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THE NEW CENTURY BOOK OF FACTS

A HANDBOOK OF READY REFERENCE

EMBRACING

LANGUAGE · HISTORY · GOVERNMENT · LAW · COMMERCE
ECONOMICS · USEFUL ARTS · SCIENCE · LITERATURE
FINE ARTS · EDUCATION · ETHICS

EDITOR-IN-CHIEF
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AUTHENTIC, COMPREHENSIVE, UP-TO-DATE

THE KING-RICHARDSON COMPANY
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PREFACE

ORIGIN. The publication of the New Century Book of Facts has been brought about by the universal demand of the American people for a reliable handbook of quick reference. Such a reference work requires constant revision to hold place with events, discoveries, inventions, and political changes, and in keeping up with this progress lies its great usefulness. So extensively has this work been done in the past by the publishers that the 1902 edition of the Century Book of Facts bears slight resemblance in many important respects to the edition of 1908. In six years the work of revision has practically changed the identity of the book. As a result of these improvements made in response to actual needs based upon the experience of many thousand users, the demand became so great that it has been impossible to take the plates from the presses for a sufficient length of time to make the radical betterments long planned by the publishers.

PURPOSE. Consequently, as the publishers had long foreseen, it was necessary to make an entirely new book, in the preparation of which there has been one supreme object, namely: the production of the best possible single-volume reference work in the English language, surpassing all others in scope, quality, and adaptation to present day needs in the same degree that a modern locomotive excels the first models.

PREPARATION. To accomplish this, three years have been spent in the selection, condensation, and arrangement of the subject matter, which is the most comprehensive and complete yet presented in a single volume.

EDITORSHIP. This vast array of facts was brought into logical order, verified, and made available for instant use under the direction of Hon. Carroll D. Wright, editor-in-chief, late president of Clark College, recognized throughout the world as a statistician and economist of the first order, and eminently qualified to shape a fact book along the lines of highest usefulness. In order to maintain a uniformly high standard throughout the several departments, he personally selected a board of sixteen associate editors, composed of specialists of the foremost rank, for the most part connected with our leading universities and colleges, and representing an average of editorial competency and scholarship not only higher than that of any other single-volume reference work, but also exceeding that of our largest encyclopædias.

ARRANGEMENT. The topical arrangement of the subject matter was chosen with full realization that it imposed upon the editorial staff the necessity of fuller and better balanced treatment of each department than would either the alphabetical arrangement or the grouping of several departments into one. Each of the twelve departments consists of one and only one general subject. The great educational advantage of proper correlation of matter is gained by it, and it also does away with the unnecessary and disorderly miscellany so confusing in works of reference. The classification of the matter has proceeded on the basis of the Dewey decimal system for libraries, except that the large general division of sociology was divided

into Government, Law, Commerce, and Economics, while religion and philosophy were combined with social reform under Ethics. Further, the arrangement of the twelve departments beginning with Language, which is primal and fundamental, and ending with Ethics, which embodies the highest moral achievements, is an epitome of the progress of mankind from the dawn of history to the present.

SPECIAL FEATURES. Among the special features we mention the appearance and style of type page; the half-tone and line engravings in the text illustrating some three hundred subjects; the color plates illustrating over fifty subjects; the extensive tabulations entitled World's History in Graphic Outline, Important Wars, Facts about Presidents, Data concerning States, Chemical Elements, Cultivated Plants, Domestic Animals, and Outlines of the World's Literature, together with one hundred others throughout the text; and more than thirty special dictionaries, including dictionaries of Synonyms, Americanisms, History, Commercial Geography, Weights and Measures, Coins and Coinage, Business and Financial Terms, Plants and Animals, World's Masterpieces of Art, Literary Plots, Characters, and Allusions, Mythology, and various biographical dictionaries covering over five thousand important biographies.

TO USERS OF THE CENTURY BOOK OF FACTS. There are recorded in our files the names and addresses of over a half million purchasers of the Century Book of Facts, which is incontrovertible proof of the popularity of our plan of constant improvement and revision. We take this opportunity to express our appreciation of suggestions offered by users of the earlier work, which have made possible many excellent features of the new. To the hundreds of thousands of our appreciative patrons we wish to make clear that owing to the increase in number of pages, larger type page, superior condensation and more extensive tabulations, the text contains valuable new matter more than equaling the entire contents of the earlier work, while the important subject matter of the older book receives vastly improved treatment in the new. In point of actual contents, the New Century Book of Facts contains nearly two and one-fourth times as much subject matter as the last 1908 edition of our earlier work. Consequently, it will prove an invaluable companion volume, supplementing and enlarging the usefulness of the old to several times its original extent.

INTERMEDIATE BETWEEN ENCYCLOPAEDIA AND DICTIONARY. While in wealth of pertinent facts it fulfills the office of an encyclopædia, nevertheless, by virtue of topical arrangement and special tabulations, it avoids the cumbrous but necessary repetitions of encyclopædias and gives relief from the confusion arising from grouping totally unrelated subjects in alphabetical order. On the other hand, it is not merely a collection of definitions, but presents related facts in a systematic way, giving the essentials of numerous text-books or treatises on its various subjects, and in range of available information it exceed the resources of all except the largest libraries.

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BOOK I.

LANGUAGE.

MANUSCRIPT BOOK.

PRINTED BOOK.

Mural Paintings in the Congressional Library, Washington.
BY J. W. ALEXANDER.

LANGUAGES OF ALL NATIONS. ENGLISH LANGUAGE. AMERICA'S CONTRIBUTION TO THE ENGLISH LANGUAGE. AIDS TO SPELLING. HOW TO PUNCTUATE SENTENCES. WHEN TO USE CAPITAL LETTERS. WORDS FREQUENTLY MISPRONOUNCED. WRONG FORMS OF SPEECH AND WRITING. EXACT USE OF SYNONYMOUS WORDS; THEIR SHADES OF MEANING DISTINGUISHED AND ILLUSTRATED. FORMS OF LITERARY EXPRESSION, STRUCTURE OF SENTENCES, AND PARAGRAPHS. LETTER WRITING. ABBREVIATIONS AND CONTRACTIONS. WORDS, PHRASES, AND QUOTATIONS FROM CLASSICAL AND FOREIGN LANGUAGES.

LANGUAGES OF THE NATIONS.

The several languages and dialects spoken in the world number about 1,000. These are classified according to their grammatical construction into (1) the monosyllabic or isolating languages, (2) the agglutinative or affixal languages, and (3) the inflectional languages.

The monosyllabic or isolating languages are those in which the words, all of one syllable, are each an integral sign and used to express the root idea. The best example of this class is the Chinese language.

Agglutinative or affixal languages are those in which the roots of the words do not change, but modifications of the meanings of these words are indicated by inflection or change of the terminations or affixes.

Inflectional languages are those which, as in the Latin, consist largely of stems which change the termination or suffixes to indicate case, tense, number, etc.

Historical Classification of Languages.—Languages are classified according to their origin, history, or nationality into eight large groups and one unclassified group as follows:—

A. Indo-European Languages, spoken by about 830 millions of people, first recorded in the Sanskrit, and used by the nations of Europe and their descendants in other parts of the world, as well as by the people of India, Persia, Afghanistan, the Kurds, Nepaulese, Caucasians, and others. These languages are subdivided into:—

1. The Teutonic Languages, spoken by about 238 millions.

(*a*) **English,** spoken by 130 millions all over the world.

(*b*) **German,** spoken by 84 millions in Germany (except on the northern borders), the Alpine countries of Austria, parts of Bohemia, Moravia, Silesia, Hungary, Transylvania, Bukowina, north of Switzerland, some of the Baltic provinces of Russia, in Luxemburg, United States of America, Brazil, Australia, and German colonies.

(*c*) **Swedish,** spoken by over 5½ millions in Sweden and in the towns of Finland.

(*d*) **Danish,** spoken by nearly 5 millions in Denmark and Iceland.

(*e*) **Norwegian,** spoken in Norway.

(*f*) **Dutch,** spoken by 6⅓ millions in Holland and the Dutch colonies.

(*g*) **Frisian,** in North Holland and on the islands in the North Sea, spoken by 1 million.

(*h*) **Flemish,** spoken by 3¾ millions in Belgium (Brabant and Flanders) and on the Netherland borders.

2. Romanic-Greek or **Romance Languages,** spoken by 177 millions.

(*a*) **French** or **the Langue d'oil,** spoken by 52 millions in France, the west of Switzerland, Belgium, Canada, Algiers, and the French colonies.

(*b*) **Provençal or the Langue d'oc,** spoken by 12 millions in the south of France.

(*c*) **Walloon,** spoken by 2½ millions in the south Netherlands, Belgium, Luxemburg, and the north of France.

(*d*) **Spanish,** spoken by 46 millions in Spain, Central and South America (excepting Brazil), the West Indies, and other Spanish colonies.

(*e*) **Portuguese,** spoken by 15 millions in Portugal, Brazil, and Portuguese colonies.

(*f*) **Italian,** spoken by 34 millions in Italy, Corsica, south Tyrol, Görz, and the coasts of Istria and Dalmatia.

(*g*) **Rhaeto-Romanic** and **Ladin,** spoken by 100,000 in Grisons, the Engadine, and south Tyrol.

(*h*) **Furlanish,** spoken by 400,000 in Friuli (north and east Italy).

(*i*) **Roumanian,** spoken by 10 millions in Roumania, Bessarabia, east Servia, Bukowina, southeast Hungary, Transylvania, and (a dialect) in Greece.

(*j*) **New Greek,** spoken by 5 millions in Greece, European Turkey, Crete, Cyprus, adjacent islands, and on the coast of Asia Minor.

3. **Slavonic Languages,** spoken by 134 millions, of which the North Slavs number nearly 117 millions.

(*a*) **Russian,** spoken by 85 millions in Russia.

(*b*) **Ruthenian,** spoken by about 4 millions in east Galicia and north Hungary.

(*c*) **Polish, Mazurish,** and **Kassubish,** spoken by 17 millions in Poland, Galicia, and the borders of Posen, Silesia, Pomerania, and of East and West Prussia.

(*d*) **Czechish** or **Tcheckish, Moravian,** and **Slovak,** spoken by 10 millions in Bohemia, Moravia, Silesia, and north Hungary.

(*e*) **Wendish,** spoken by 100,000 in Saxony and Lusatia.

(*f*) **Servo-Croatian,** spoken in Servia, Bosnia, south Hungary, Istria, Montenegro, and Dalmatia, by 7½ millions.

(*g*) **Slovene,** in south Styria, Carinthia, Carniola, Istria, and parts of Görz and Gradiska.

(*h*) **Bulgarian,** in Bulgaria and Turkey.

(*i*) **Albanian,** spoken by 1½ millions in Albania (north of Greece).

(*j*) **Lithuanian** and **Lettish,** spoken by 4 millions in Lithuania and East Prussia.

4. **Keltic Languages,** spoken by 3¼ millions, including: (1) Irish, (2) Gaelic in the Highlands of Scotland, (3) Welsh, (4) Manx, (5) Bas-Breton or Armorican, and (6) Cornish, which died out about the beginning of last century.

5. **Iranian Languages,** spoken by about 22 millions in southwestern Asia and the Caucasus, including New Persian, Afghan, Lesghian, Grusian, Kurdish, Pushtu, Ossetian, and others.

6. **Armenian,** spoken by about 3 millions in Armenia and in parts of Turkey, Hungary, Russia, and Persia.

7. **Indian Languages,** spoken by about 255 millions in all of the East Indies except parts of the Dekkan, Burma, and the Malay Peninsula.

The chief dialects are the Hindi, Hindustani or Urdu, Punjabi, Bengali, Mahrati, Sindhi, Gujarati, Uriya, Assamese, Nepauli, Kashmiri, Kafir, and others.

B. **Ural-Altaic Languages.**

1. Languages of the Finns, Esthonians, Livonians, Permians, Mordvidians, Samoyeds, Voguls, and Lapps of northern Europe, spoken by over 7 millions.

2. **Magyar** of Hungary and the language of the Szeklers in Transylvania, spoken by 8¾ millions.

3. **Turko-Tataric Languages** of the Osmanlis or Turks, Nogays, Kalmuks, Turcomans, or Turkmen, Kirghiz, Uzbeks, Yakuts, and others of Turkey and northern Asia, spoken by 23¼ millions.

4. **Languages of the Mongols,** Manchus, Samoyeds, Buryats, Tunguses, and others in northern Asia, spoken by 18 millions.

C. **Caucasian Languages,** spoken by the Georgians, Mingrelians, Lazisians, Circassians, Tchetchentses, Avars, and others, to the number of about 8 millions.

D. **Malay-Polynesian Languages,** spoken by about 35 millions.

1. **Malay** proper, spoken by the Sundanese, Tagalians, Dyaks, Alfurus, Kawis, Battaks, and others of the Malay Peninsula, the Sunda Islands, and the eastern part of Madagascar.

2. **Melanesian** and **Polynesian** or **Maori** of New Zealand and adjacent islands.

E. **The Monosyllabic** or **Isolated Languages,** spoken by about 450 millions of Chinese, Anamese, Tonkinese, Siamese, Cambodians, Shans, Tibetans, Talaings, Burmese, and others of southeastern Asia.

F. **The Japanese-Korean Languages,** spoken by about 48 millions of Japanese and 10 millions of Koreans.

G. **The Hamitic-Semitic Languages,** spoken by over 50 millions.

1. **Hamitic,** spoken by over 20 millions in north Africa, including the Berbers, Kabyles, Tuaregs, Copts, Gallas, Somalis, Sahos, Bejas, and others.

2. **Semitic,** spoken by 30 millions. It includes the Arabic, Ethiopic or Geez with its dialects Tigré and Tigriña, the Amharic, Harari, in Arabia, northern Africa, and some parts of Abyssinia; and the Hebrew, spoken all over the world. The descendants (around Palestine and in parts of Asia Minor) of the ancient Chaldeans, Syrians, Phœnicians, Babylonians, and Assyrians speak both Hebrew and Aramaic.

H. **Bantu Languages,** spoken by 27 millions in central and south Africa, including the Kaffirs, Zulus, Swahilis, Hereros, Bechuanas, Marutses, Bundas, Congos, Basutos, Matongas, and others.

I. **Languages of the Interior of Africa.**

1. Several **Negro** tongues, spoken by over 70 millions of Wolofs, Hausas, Bornus, Baghirmis, Nube, Fulbe, and others.

2. **The Clicking Languages** of the Hottentots and other south African races.

J. **Dravidian Languages,** spoken by over 60 millions in the Dekkan, southern India, and the west of Ceylon, including the Tamil, Telugu, Kanarese, and Malayālam.

K. **American Indian Languages,** spoken by about 10 millions.

1. **In North America** the languages of the Apaches, Iroquois, Pawnees, Sioux, Delawares, Crees, Dakotas, and others.

2. **In Central America** the Maya language, Otomi, Aztec, Zapotec, and others.

3. **In South America** the Quichua, Yunca, and other languages of the Peruvian group; the languages of the Araucanians, Obohuds, and others.

L. **Unclassified Languages.**

1. **The Basque,** spoken by 600,000 in the Pyrenees and around the shores of the Bay of Biscay.

2. The languages of such inhabitants of northern Asia and America as the Kamtchadales, Aleutians, Yakuts, Ostyaks, and Eskimos.

ENGLISH LANGUAGE.

Historically, English belongs to the western branch of the Teutonic languages, is in the Low German subdivision of that branch, and is most closely allied to the Frisian. Its growth is divided into three leading periods:—

1. The Anglo-Saxon Period (449-1100).
2. The Middle English Period (*c.* 1100-1500).
3. The Modern English Period (1500-the present time).

The English language was introduced into Britain (as the country was then called) in 449 by the Teutonic invaders, who came under the leadership of Hengist and Horsa to help the Britons or Celts to drive out the Picts and Scots who had descended from the north upon the lowlands. Very few words were borrowed by these Teutons from the Celts or Britons whom they drove into Wales and other parts of the island. Skeat gives only ten nouns (in his *Principles of English Etymology*) as being derived from this source. Among them are *bannock, mattock, down,* and *cart.* A few Latin words which the Celts had borrowed from their Roman conquerors came in in the same way: *street, mount, lake, castra* (as seen in *caster, cester,* and *chester*) a camp. But when Christianity was introduced by St. Augustine in 597, many ecclesiastical and general terms came in from the Latin; in all about 140 words, according to Skeat's estimate. Among them are *altar, mass, priest, psalm, temple.* Many words of Scandinavian origin were contributed by the Danish invaders of England. For example, *earl, husband, knife, take,* and *window.*

Middle English Period (1100-1500).—The early part of this period is known as Semi-Saxon. It is marked by a period of transition or breaking up of the language, to which process the Norman conquerors greatly contributed. The most noticeable change was the gradual dropping of inflections or changes in the terminations of words. Nouns and adjectives, that in the old Saxon had a distinct termination to indicate several cases and numbers, gradually but surely lost these, partly by the unwillingness of the Norman-French conqueror to observe or even to learn the inflections of the conquered Saxon, upon whom the Norman thought he conferred a sufficient favor by learning the root of the word. The introduction of an immense number of Latin words that had come through the French was another marked feature of this period. French became the language of the court, the camp, and the chase. We observe the French influence in the poems of Chaucer and Gower. The Renaissance added many Latin words.

Modern Period (1500-the present day).—The most distinctive feature of this last period of English is the remarkable enriching of the vocabulary by the introduction of words from nearly every language in the world. In the development of the mercantile and colonial policies of the empire, the language levied tribute upon all of the peoples with whom the sailors and merchants came in contact. We accordingly find in the language traces of the English contact with the Dutch in the carrying trade of the world; of the conquest of India; of contact with the Maoris of Australasia; with the Indians in Canada; with the Boers in South Africa; and of commercial relations with China, Spain, Portugal, and other nations. The ease and rapidity with which words of foreign origin are assimilated and incorporated into the English language are remarkable. The advances of science and its application to the useful arts have greatly increased the vocabulary by the introduction of scientific names and technical terms.

Richness of the Language.—Our dictionaries contain from 100,000 to 300,000 words, but it is not to be supposed that all of these are by any means in common or frequent use. While Milton used but about 7,000 words in his poetical and prose writings, Shakespeare used over 25,000 words. In our daily intercourse it is possible that the vocabulary of the average educated person seldom exceeds 2,500 words; and that of the uneducated person contains less than 800 different words. Yet the extent of one's vocabulary may be regarded as a fair measure of one's education.

GERMAN LANGUAGE.

The German language ranks third among the great languages of Europe,—English first, Russian second, and French fourth. It is spoken by about 84 millions. The area in which the German language is spoken is not at all identical with the area of Germany, where there are about 56,000,000 people. Of these 4,200,000 are returned in the census as speaking foreign languages (mostly Polish). Outside of the empire German is the common language of nearly all of Luxemburg, the greater part of Switzerland, and parts of Austria-Hungary and Russia. Outside of Europe the greatest number of German-speaking people is to be found in the United States, whose population of German parentage exceeds 3,000,000, of which New York City returns 786,435, while the number of Pennsylvania Germans or "Pennsylvania Dutch" has never been accurately determined.

From the seventh century, the German language followed along two main divisions: the High German or Hoch-Deutsch and Low German or Platt-Deutsch. High German is the language of upper or southern Germany. In its development there may be traced three main periods:—

1. Old High German, from 700 to about 1100.
2. Middle High German, from about 1100 to about 1500.
3. Modern German, from about 1500 to the present time.

Low German or Platt-Deutsch is the language of lower or northern Germany and the Netherlands. It included, besides Platt-Deutsch, the Friesic; Anglo-Saxon or Saxon; Old Saxon; Dutch or Low Dutch with Flemish.

Modern or New High German.—The chief influence in determining the form of modern literary German was the translation of the Bible by Luther between the years 1522 and 1534. He chose the language of the Saxon Chancery for his translation. The diction prescribed by the several administrative chanceries or chancelleries determined the form of the language within the several jurisdictions. In the reign of Emperor Louis the Bavarian (1314-1347), the Imperial Chancery ordered its official documents to be written in German instead of Latin. While, therefore, the Midland German became a

literary language very early in the sixteenth century, it was not until after 1750 that the present form of the literary language became a national language.

SWEDISH LANGUAGE.

This language belongs to the northern branch of the Germanic family. It developed from the old Danish, which was spoken throughout the whole of Scandinavia up to the year 900. Then began a movement which slowly divided the old Danish into an eastern division of Danish and Swedish and a western division of Norwegian and Icelandic. The language between the years 900 and 1500 is known as Old Swedish. Until somewhat later than the year 1200, Swedish was written in the old Scandinavian characters known as runes. In the thirteenth century the use of the Roman alphabet began. The great difficulty which Swedish presents to a foreigner who attempts to learn it lies in the fact that the printed language abounds in silent letters. Another difficulty is the peculiar musical modulation of the voice upon which not only correct pronunciation but the very meaning of the word depends.

DANISH LANGUAGE.

The development of modern Danish dates from the year 1000, when wide dialectic differences in the common language of Scandinavia caused the formation of several languages. The Danes used Latin so extensively that their language was much affected by it in both syntax and vocabulary. The great agency in fixing the Danish vocabulary was the first literal translation of the Bible into Danish in 1550 under Christian III. By the Union of Kalmar in 1397, by which Norwegian independence was lost, the Danish language was substituted in literature and in the transaction of public business, though Norwegian was spoken in the country districts. This accounts for the slight differences between the languages of the two countries. The Danish itself underwent many changes, and that spoken in Norway is often called Dano-Norwegian and has been described as Danish with a Swedish accent. In 1537 Danish became the official language of Norway. The standard of Danish literary form was erected by Holberg (1684-1754). From 1750 until 1800 German and Danish were used in common just as in earlier days Danish and Latin were used, and German had a marked influence upon the Danish syntax and vocabulary. But in the last few years, because of the war with Germany, the German element is being rapidly eradicated and a purer Danish style obtains. The Danish and Swedish languages have much in common. The fundamental principles of these languages are the same, but the essential differences are in pronunciation. Danish pronunciation calls for the use of a peculiar closing of the glottis in some sounds which suggests to the foreigner the sound of a hiccough. Danish also lacks that peculiar musical modulation which is so marked in the Swedish. The language of the Danes in the United States is different from that of the mother country, especially in the vocabulary and in some of the syntactical forms. These are caused by the American influence.

DUTCH LANGUAGE.

This language is classified in the Low Frankish division of the Low German. It is so closely related to the Flemish language that the printed form of these two languages is practically identical. It is the language of the Netherlands. The Boer language of South Africa is a dialect of it. The Dutch call their language Nederlandsch; the Germans call it Holländisch. In its history and development the Dutch language has passed through nearly the same changes as the English language has experienced. There are three main periods:—

1. Old Dutch (to about 1100).
2. Middle Dutch (1100-1550).
3. Modern Dutch (1550-the present day).

The standard of Dutch vocabulary and spelling was erected by the publication between the years 1619 and 1637 of the *Statenbibjel* or authorized version of the Scriptures. Its spread among the people did much to fix the form of the Dutch language in its written form. In inflection and grammar the language corresponds closely to the German; the use of capitals, however, is the same as in English, and the Roman alphabet is used.

FLEMISH LANGUAGE.

The name given to the Low German language and literature of Belgium (French being also largely used in that country). It is especially spoken by the people of Flanders, Brabant, and of the provinces bordering on the Netherlands. Like the Dutch, the Flemish language is a dialect of the Old Low Franconian division of the Low German. The Dutch and Flemish spoken languages were so closely related that there was a great effort made in the sixteenth century to unite the two in one common written form. But when, in 1581, the northern provinces threw off their allegiance to the crown of Spain, declared their independence, and formed the Dutch republic, this hope was fruitless. The southern provinces, after the taking of Antwerp in 1585 by the duke of Parma, were separated from Holland, held by Spain until 1714, when they were given to Austria. Then in 1794 they were taken by France and held by her until 1815, when Belgium was united with Holland. When, by the revolution of 1830, Belgium was separated from Holland and made an independent state, French was made the official language, and all possibility of making the Low German a literary language in Belgium was apparently ended. But the "Flemish movement," begun in 1830 by Jan Frans Willems, has been successful in restoring the Low German as both a literary and official language in Belgium, where, by the laws of 1873, 1878, 1883, and 1886, it holds an equal position with the French tongue. In 1886, the Koninklijke Vlaamsche Academie was founded, which has advanced the cause of the Flemish language. It is not surprising that the Flemish language of to-day contains very many more words of French origin than does the Dutch.

FRENCH LANGUAGE.

When, in the first century B. C., Julius Cæsar conquered Gaul, the Latin language was imposed upon the Gauls or Celts, who spoke a language

similar to that of Brittany and of Wales. During the four centuries of Roman rule in Gaul, the use of the Latin language became universal. When, in the fifth century, the Visigoths, Burgundians, and Franks conquered Gaul, and the Franks ultimately ruled all of the country, the conquerors adopted the language of the people. It is remarkable that the Franks contributed only about 400 words of German origin to the common speech. After a transitional period of six centuries the language spoken in Gaul differed sufficiently from that of Rome to be distinguished by the name Romanic.

A marked difference was noticeable between the speech of the people in the north of France and that of the people in the south. The dividing line between the two peoples may be drawn from La Rochelle through Limoges to Grenoble. The word for *yes* in the north was *oïl;* in the south *oc.* The form of speech used in the north was called the *langue d'oïl,* the parent of the French of to-day; and that in the south, *langue d'oc,* the parent of what is now called Provençal, spoken by 12,000,000 people in the south of France.

Attempts to fix the language began in the sixteenth century, after the reduction of endings and of inflections which had occurred during the Middle Ages. The influence of Catherine de' Medici caused the adoption of many Italian customs at the French court, and the war with Italy caused the adoption of many terms pertaining to warfare. These two influences brought over 500 words of Italian origin into the language. In the seventeenth century about 100 words of Spanish origin were incorporated. The Académie Française was founded in 1635, and in 1694 published a dictionary which had a marked influence in limiting the language. A number of new words came in as a direct result of the Revolution; and in the nineteenth century a very considerable number of English words were introduced and naturalized. In 1878 the Académie published an edition of the *Dictionnaire* in which 2,200 new words obtained from other languages were incorporated. This came about as a direct result of the cosmopolitan influence upon the language, which has always been regarded as the most refined among the languages of the world, though English is now the most practical. This disturbance of the purity of the language is deplored by many who have followed in the ways of Voltaire in the refinement of the French language.

SPANISH LANGUAGE.

Spanish is a Romanic language that has grown out of the Latin which was imposed by Roman conquerors upon the Iberian peninsula. There are now more Spanish-speaking people in the New World than there are in Spain. There are five leading dialects in Spanish: (1) Asturian, (2) Leonese, (3) Aragonese, (4) Andalusian, and (5) Castilian. The standard literary speech is the Castilian. Of the foreign elements in the language, the words of Arabic origin are most noticeable. They were infused into Spanish during the occupation of the country by the Arabs. The majority of such words have the characteristic Arabic article *al* before them.

PORTUGUESE LANGUAGE.

A Romanic tongue derived from the Latin of the Roman soldiers. It most closely resembles the Spanish language. The influence of both Spain and France is to be seen in the vocabulary and the grammar of the language.

ITALIAN LANGUAGE.

The Italian language is a Romanic language, one of the several descendants of the Latin. Its chief characteristic is that it does not depart so far from the original Latin as do the other languages of this group. Between the spoken languages or dialects of the Italian peninsula and the written language there is a wide difference. There are to be found several hundred patois and dialects spoken in Italy, and these are in some cases so widely different that one born in the south of Italy makes himself understood only with the greatest difficulty by those in the north. The Italian of culture and of literature is based upon the Tuscan dialect, for it was in this form that Dante, the founder of the literary language, wrote his works. The Tuscan dialect has become the fixed standard of literature used by most of the great writers since Dante's time. The Accademia della Crusca published a dictionary of Tuscan in 1612 as the standard of purity of the national language.

ROUMANIAN LANGUAGE.

A Romanic language founded upon the Latin, and now spoken in three dialects:—

1. **Daco-Roumanian** by 9,000,000 people in Roumania, Transylvania, Bessarabia, the Hungarian Banat, and Bukowina.
2. **Macedo-Roumanian** by several hundred thousand people in Macedonia, Albania, Thessaly, and Epirus.
3. **Istro-Roumanian** by 3,000 people in Istria.

Owing to the Slavonic influence, the language has acquired more words of Slavonic origin (about 3,800) than there are words from the original Latin (about 2,600). It is only within the last fifty years that the language has been freed from the use of the Slavonic alphabet.

NEW-GREEK LANGUAGE.

The language of ancient Greece comprised a number of dialects. After the conquest of the world by Alexander the Great (330 B. C.) and the spread of the language, a "common dialect" based upon the Attic was generally adopted as the Greek language. It is the Greek of the New Testament, of Aristotle, Plutarch, and Lucian. This "common dialect" gradually underwent changes as a spoken language, and from it the New-Greek now spoken has descended. The differences between ancient and modern Greek are not so great as are supposed by many. Naturally there have been great additions to the vocabulary in order to keep pace with inventions, improvements, and the onward march of civilization. The alphabet is the same. The rough breathing is still written but is never used. Accents are still written, but they are now indications of stress as in English. The dual number is no longer used. Only a few verbs have the middle voice. The dative case is nearly always replaced by the genitive or

accusative with a preposition. There is no optative mood, the subjunctive taking its place. There is a strong movement to purify the language and to strive for a stricter conformity to ancient usage.

RUSSIAN LANGUAGE.

This most important of the Slavonic languages is spoken by over 90,000,000 people in Russia and by nearly 4,000,000 Ruthenians in east Galicia and in north Hungary. The alphabet now used was introduced by Peter the Great, and the present form of the language was practically settled in the sixteenth century, though Russian, as a literary language, dates only from the middle of the eighteenth century.

The three dialects are:—

1. **Great Russian,** spoken by 60,000,000 people in the north, the center, and the east of Russia, but in its greatest purity around Moscow. It is the basis of literary Russian.
2. **Little Russian,** spoken by over 20,000,000 people in the south and the southwest of Russia, and by the Ruthenians in Austria-Hungary.
3. **White Russian,** spoken by about 5,000,000 people in the west of Russia, and around Lithuania.

POLISH LANGUAGE.

The second in importance among the Slavic languages, is spoken by about 16,000,000 people in the parts of Russia which at one time formed the kingdom of Poland, and by over 1,000,000 persons in the United States. The language, like the people, has suffered many vicissitudes. When Christianity was introduced, about 965, Latin predominated. The large number of German settlers in Poland brought many of their common words into the language. The literary classes added many French words, and Russian technical and other terms have been freely incorporated. But all of this has recently been strongly and successfully opposed by the Romanticists and a greater purity in the literary standard has resulted. There are many dialects, of which the most important are: **Great Polish,** in Posen; **Little Polish,** an extremely euphonious dialect spoken in Galicia; **Mazurish** or **Masurian,** spoken in the northeast around Warsaw; **Lithuanian Polish,** used by Mickiewicz and other writers; **Prussian** and **Silesian Polish.** The alphabet is Latin, slightly modified.

CZECH OR BOHEMIAN LANGUAGE.

The Czech (chĕk) or Tcheck language belongs to the Slavic group. Of the 6,000,000 who speak the Czech language, 3,650,000 are found in Bohemia; 1,500,000 in Moravia; 130,000 in Austrian Silesia; 300,000 in other parts of Austria-Hungary; 100,000 in Germany; and 250,000 in the United States. At first the Slavic alphabets were employed by the Czechs, but when Roman Catholicism replaced the Greek Church the Latin alphabet was used. As this could not express all of the sounds of the language, *c*, *s*, and *z* were made additional letters by adding diacritical marks to them, and they then took the sounds of *ch*, *sh*, and *zh* respectively.

SLOVAKIAN LANGUAGE.

This is spoken by 2,500,000 in northwest Hungary and the United States. It is very closely related to the Czech language in form, vocabulary, and syntax.

SERVO-CROATIAN LANGUAGE.

One of the Southern Slavic languages. The Servo-Croatian language is spoken by about 8,000,000 persons in Servia, Montenegro, Bosnia, the Herzegovina, Old Servia, Croatia, Slavonia, southern Hungary, Istria, and Dalmatia. Among the Croatian Catholics the Roman alphabet is used; the greater part of the Servians, who belong to the Greek Orthodox Church, use the Kirillitsa or Cyrillic alphabet, a form of the Russian introduced by Cyril. The language differs in minor phonetic peculiarities from the Northern Slavonic, and is one of the most musical and expressive among the Slavonic group.

BULGARIAN LANGUAGE.

One of the Southern Slavonic languages and spoken by about 5,000,000 persons. It has fewer inflections of words than have the other languages of the group. Its vocabulary has drawn from the Turkish, Albanian, Serbian, and Roumanian languages. Among the dialects are the South Thracian, Rhodopian, and West Macedonian. "Old Bulgarian" is the ancient church language, which was the written language. Middle Bulgarian dates from the twelfth century, but Turkish influence interfered with its development until well into the nineteenth century. The Danubian dialect now prevails as a literary language. The Cyrillic alphabet is most generally used. From the tenth to the middle of the eighteenth century, Old Bulgarian was the literary language of Russia.

NEW PERSIAN LANGUAGE.

The Iranian language now spoken in Persia. It dates from the ninth century. The Middle Persian is called Pahlavi, from which the New Persian differs but slightly. The invasions by the Mohammedans enriched the Persian vocabulary by a great number of words which have not only gained a permanent place in the language but whose use marks elegance of style. The dialects are divided into three groups: Pamir, Caspian, and Central.

ARMENIAN LANGUAGE.

The Armenian language was for a long time regarded as one of the Iranian languages; and this belief was supported by the great number of Iranian words which the language had borrowed. But, mainly through the investigations of Heinrich Hübschmann, it has been made clear that Armenian is an independent language and is one of the great members of the Indo-European group. The language is divided into the Old or Classical Armenian, which is remarkably pure; and the Modern Armenian, of which there are many dialects. The alphabet consists of thirty-six original letters, to which two more were added in the twelfth century. The alphabet was devised and introduced by Mesrob, a bishop of the Armenian Church, in the fifth century, and it is probable that he made free use

of the Greek sources. The spoken language is marked by harsh-sounding consonantal combinations and its general effect upon a stranger's ears is guttural.

HINDUSTANI LANGUAGE.

The name given to the language of northern India. It is a dialectic form of the ancient Sanskrit much changed through the Prakrit of the middle periods. It is divided into about sixty subdialects; the standard of correct speech is the dialect spoken in Delhi, Agra, and Mathura. The language has borrowed freely from the Turkish, Arabic, Persian, and Dravidian languages. This corrupt form is the "Urdu"; the purer form is called "Hindi." The latter is written in the Devanagari alphabet, like Sanskrit and Mahrati; "Urdu" is written in Perso-Arabic script. It is estimated that the Hindustani in some form is spoken by about 100,000,000 persons within an area of 248,000 square miles.

PUNJABI LANGUAGE.

The modern language of the Punjab. It has been regarded as an archaic form of the Hindi, corrupted by many words of Arabic and Persian. It does not contain so large a proportion of Sanskrit words as do the Bengali and Uriya languages. Punjabi contains many dialects, the chief of which are the Multani in the south, Jathki in the center, and Chibhali-Dogri in the north. The official alphabet of the government is the Arabic, while there are several alphabets in popular use.

BENGALI LANGUAGE.

This modern Indian dialect is closely related to the Hindustani and to the Uriya. It is spoken by about 42,000,000 persons. Among the many dialects the Calcutta is the standard. There are more words of Sanskrit origin in the Bengali than in any other modern Indian language. The Bengali alphabet is a beautiful form of writing derived from the Sanskrit or Devanagari.

MAHRATI LANGUAGE

The language of western India, spoken by nearly 20,000,000 people. Of the many dialects, the Dakhani and the Konkani are the chief. The standard of correct speech is the Deshi, spoken near Poona, in the Dekkan. Around Goa there is to be found a large incorporation of Portuguese words. The Mahrati in form very closely adheres to the ancient Sanskrit. The alphabet is the Devanagari in which Sanskrit is written.

SINDHI LANGUAGE.

The language of Sindh is noted for the large number of Prakrit elements which it contains. It was the first of the languages of India to come under Mohammedan influence and contains a great many Persian and Arabic words. It also contains probably the fewest number of Sanskrit words. It has many dialects, of which the Sirai, near Haidarabad, is the standard. The two alphabets in use are the Arabic and the Devanagari.

GUJARATI LANGUAGE.

The language of Gujarat, in western India, is spoken by about 11,000,000 persons. It is of Prakrit origin and contains many words of Sanskrit, Arabic, and Persian origin. The alphabet is derived from the Devanagari or Sanskrit script but the bar above the letters is omitted.

FINNISH LANGUAGE.

The Finnish language, or Suomi, as the natives call themselves, is spoken by the Finns at home in Finland, in Lapland, the Baltic provinces, on the banks of the Volga, and in West Siberia. It and the Magyar, the language of Hungary, are the most highly developed of the Finno-Ugric branch of the Great Ural-Altaic family. Over 2,000,000 people speak Finnish. There are three important dialects:—

1. East Finnish or Karelian,
2. South Finnish,
3. West Finnish.

The East Finnish or Karelian is the oldest and most imperfectly developed; the South Finnish is the chief medium of the mass of Finnish literature. Though there is no article used with nouns, and gender is not indicated, yet there are fifteen cases whereby the noun expresses relations which in English are expressed by prepositions; only the present and past tenses of verbs are found, the future tense being expressed in a roundabout way. Despite the limitations which have been noted, the language is capable of expressing the finest shades of meaning.

HUNGARIAN LANGUAGE.

This language is called by the people who use it, Magyar. It is one of the Ural-Altaic languages and is one of the few European languages which do not belong to the Indo-European group. For a long time, Hungarian was thought to be related to the Turkish language, but it is now clearly decided that it belongs to the Finno-Ugric group. The roots are monosyllabic and affixes are added to the unchanged roots, though the affixes are changed to conform to very decided laws of euphony. This process of upbuilding of words may be carried to an almost incredible degree, and, though the roots are of one syllable, some of the words made from them are of very many syllables. The verb is the chief word in the sentence and is capable of being made to express the finest shades of meaning. All of which is most surprising when it is considered that there is no grammatical gender and no verb "to have" in the language.

TURKISH LANGUAGE.

The Turkish is the most important of the Finnish-Ugrian group of languages. In ancient times the Turks had alphabets of their own, but since their conversion to Mohammedanism they have used the Arabic alphabet. They have increased the 28 letters of the Arabic alphabet to 33 by adding dots to five of the characters. The root of every word is unchangeable, but prefixes and suffixes are lavishly used. Each Turkish verb is capable of over 25,000 changes to indicate all of the moods, tenses, numbers, and persons; and all of this seemingly appalling complexity is brought about by memorizing some forty-four syllables or enclitics with which singly and in combination the building is done.

The vicissitudes to which the Turks have been subjected have brought about a great number of dialects among the people who speak Turkish, so much so that while any Turk might be able to satisfy his simplest needs in any part of the empire, an inhabitant of Bokhara, beyond the Caspian Sea, would require the services of an interpreter in Constantinople.

MONGOLIAN LANGUAGE.

The language of the Mongols is one of the Ural-Altaic group, very similar to both the Manchu and the Korean. It is remarkably free from dialectic variations. The alphabet was introduced in the time of Genghis Khan, having been borrowed from the Uighur Turks who had, in their turn, derived it from the Syriac. It consists of seventeen consonants, seven vowels, and five diphthongs. The book language differs from the spoken language.

GEORGIAN, IBERIAN, OR GRUSINIAN LANGUAGE.

This is the chief of the Caucasian group of languages. The chief characteristics of the entire group are the few vowels and the difficult combinations of consonant sounds, gutturals, and sibilants. The language as written is a modified form of the Armenian alphabet, a translation of the Bible dating back to the eighth century.

CHINESE LANGUAGE.

One of few very rudimentary forms of speech that have maintained a lengthy endurance is the language of the Chinese. It is a monosyllabic language. Each word is uttered by a single effort of the organs of speech and conveys a complete idea. It has no inflections and no parts of speech. Case, gender, number, and person are indicated not by any change in the word but by the addition of another word to the sentence. Shades and changes of meaning in the one word are made by a change of tone, and some words have as many as seven separate tones. It is one of the most difficult languages in the world to learn for that reason and also because one must learn the two or three different forms of the book language and the spoken languages in their many dialects. There is a vocabulary of 24,235 separate words, and the addition of rare and obsolete forms brings the total in Kang-hi's dictionary up to 44,449. The vocabulary of daily life, however, does not exceed 3,000 words. To learn the written language the first step is to learn the 214 signs. There are only 400 sounds in the language, but these are increased to the desired number by using different tones and by the aspirates or breathings in the case of vowels. The word forms employed in the written language are not in any way an alphabet of the language for there is none; they form rather a dictionary. Two forms of writing are in general use,—the "pattern" and the "running" hands.

JAPANESE LANGUAGE.

The Japanese is not at all related to the Chinese language or the Aino language of the aboriginal inhabitants of the Japanese Archipelago. It is most nearly related to the Korean language in structure, but less in etymology. The languages of the people of Loo-choo and other islands around Japan are its nearest neighbors and closest relatives. The spoken and the written forms of the language differ so much that two sets of grammars and dictionaries are needed. Since the ninth century the learned people have spoken Chinese, just as in some other countries Latin was the language of the learned. But the Chinese spoken in Japan is based upon an obscure and rather traditionary dialect, so that it is unintelligible to both the common people of Japan and even to the Chinese themselves. Previous to the introduction of Chinese into Japan there was no writing. The Japanese use the Chinese characters in writing, but as these are representations of monosyllabic words in Chinese, their use by the Japanese in representing the polysyllabic words which their language contains only adds to the already too great confusion of both speech and writing. Among the many grammatical peculiarities which the language presents may be noted that nouns do not distinguish gender, number, or case; there are no personal or relative pronouns, or article; prepositions are placed after and not before the words with which they are connected by sense; the verb has only three tenses, present, past, and future, but an almost endless number of moods; the verb has neither number nor person; adjectives have only the one form of the positive degree, other degrees of comparison being indicated by added words; the native Japanese numerals extend only to ten, the Chinese are used as well and for the higher numbers. Every Japanese word ends with a vowel sound.

KOREAN LANGUAGE.

The Korean language occupies a place midway between the Japanese and the Mongol-Tatar. Chinese is the literary and official language but not the language of the common people. The Korean and the Chinese languages are entirely distinct, though it is inevitable that many words of Chinese origin and form should be found in the Korean language. There are eleven vowels and fourteen consonants in the Korean alphabet, which goes by the name of Onmun or the "vulgar characters." There is no indication of gender; no plural terminations; no grammatical means of distinguishing animate or inanimate objects; but the variety of form and the expressiveness of the Korean verb are almost unequaled in any other language. Over one fifth of the words in the language are verbs and they take on a variety of forms. Words may end with either a vowel or a consonant.

ARABIC LANGUAGE.

Of the Semitic group, the Arabic and some Aramaic dialects spoken in Palestine, Mesopotamia, Kurdistan, and Armenia are the only languages which may in any sense be regarded as living languages. Arabic is divided into:—

1. Old Arabic,
2. Modern Arabic of
   - (*a*) Syria,
   - (*b*) Mesopotamia,
   - (*c*) Egypt,
   - (*d*) Tunis,
   - (*e*) Malta, and
   - (*f*) Oman and Zanzibar.

3. South Arabic.
   (*a*) The Minean and Sabæan inscriptions.
   (*b*) Some dialects of southern Arabia.

The alphabet consists of 28 characters, being distinguished by 11 diacritical marks. Writing is from right to left as in Hebrew and Aramaic and the opposite of our method. The language has an exceedingly extensive vocabulary and the verbal forms are very complicated. The Arabic is the common language to-day in Palestine, Syria, Mesopotamia, Arabia, Egypt, northern Africa, and Malta.

ARAMAIC LANGUAGE.

The Aramaic, the language which Jesus spoke in his daily life, is one of the divisions of the Semitic. It was spoken over the whole range of Semitic influence, except in southern Arabia and Abyssinia. Aramaic encroached upon the Hebrew in Jerusalem as early as the return of the Jews from the Babylonian captivity, and became the popular language; while Hebrew became more and more the sacred and literary language. There is to-day a great Christian literature in Aramaic dialects produced by missionaries in the Holy Land.

AFRICAN LANGUAGES.

1. **Semitic,** Arabic and Abyssinian.
2. **Hamitic,** Libyan.
3. **Hottentot,** Bushman.
4. **Bantu Languages,** embracing nearly all of Africa south of the equator. The type is the language of the Zulu Kaffirs.
5. The **Negro Languages,** spoken by the negroes between the equator and the Sahara, present a remarkable complication of linguistic difficulties which have not yet been solved.

The only one negro dialect which has risen to the development of a writing and an alphabet of its own is the Vei, on the west coast near Cape Mount. It was invented in 1834 by a native, Doalu Bukere, and several books have been written in it. Missionaries, however, decline to use it, and it is lapsing. Elsewhere throughout Africa writing is almost exclusively confined to the white race, who use the Semitic or European characters.

UNIVERSAL LANGUAGES.

Several attempts have been made to build up an artificial language which can be most readily acquired by persons of all nations, with a view to easy and rapid communication. In the several systems which have been presented, the avowed purpose has been to facilitate business, travel, and correspondence, rather than to obtain a medium for literary expression.

In political use the French language has approached universality. In commerce, trade, and in diplomatic use English has gained ground rapidly.

As far back as 1688, Bishop Wilkins published his *Essay toward a Real Character and a Philosophical Language*, in which, by a system of characters much resembling modern shorthand, he sought to provide a common medium of communication.

Volapuk.—Johann Martin Schleyer, a German priest, in 1879, published his "world-speech," Volapük. He chose elements which were common to several languages, reduced them to their simplest forms (which often rendered them unrecognizable), and adopted an alphabet of 27 letters, to which he gave their Latin, German, or French values. A system of upbuilding upon the roots required the frequent use of grammar and dictionary. The plan attracted world-wide attention. Societies to promote it sprang up everywhere, and the language spread widely for a time. But defects, limitations, and faults were recognized by its students. The board of directors opposed radical changes proposed, and amid dissensions the scheme nearly collapsed. Reorganization gave the plan new life. Changes were made, and under the directors, Woldemar Rosenberg (1893-1898) and Rev. M. A. F. Holmes (1898-1903), practically a new language was adopted,—*Lingu international* or *Idiom neutral*, "the neutral language."

Esperanto.—An artificial language invented by a Russian scholar, Dr. L. L. Zamenhof, of Warsaw, in 1887. The essential difference between it and Volapük lies in the fact that the elements of the words are common to all of the European languages. Upon this is based the hope that it will be most easily acquired by all. The pronunciation is invariably phonetic. There are only 2,500 root words, and yet the language is wonderfully rich in power of expression, a quality which is secured by numerous affixes and by facility of combination. There are no exceptions to grammatical rules. The system was practically unknown in the United States before 1905. Since then the study has been enthusiastically taken up by several societies, and its spread has been both marked and rapid.

The Esperanto movement in New York is supported by the Society for the study of Esperanto with 2,000 members, and 2,000 others belong to the *North American Review* Society. There are probably 6,000 other Esperantists throughout the United States.

But in the latter part of 1908 a strong reaction took place in the United States against Esperanto. It was stated by many of its former strong adherents that the language inadequately met the requirements of a universal speech. In consequence many fell away in their support. Then followed the criticism that the device in no way met the requirements of a literary language, that nicety of expression could not be conveyed by it, and that it did not fulfill the demands of the best vehicle for conveying thought.

Ido.—This system, sometimes called Esperanto Simplified, or Internacione Linguo, is spoken of as the quintessence of European languages. It has been adopted by the New York Society for the Study of Esperanto as a substitute for Esperanto. In Ido all arbitrary roots and words are thrown aside and the choice of roots is in every case decided by a resemblance to the greatest number of European roots. This resemblance is called the "maximum internationality." Simplicity and regularity are aimed at; and there are no exceptions and no unnecessary rules. Already much literature has appeared in Ido and the accomplishment of its purpose is confidently predicted by its enthusiastic supporters.

AMERICANISMS.

Americanisms are not barbarisms or vulgarisms. America has made important and valuable additions to the English language. In America the English language has grown, expanding in certain directions, contracting in others, and sharing in the great process of evolution which every language undergoes. The language in America to-day is by no means the same as that brought by our forefathers from England. At the same time it must be remembered that the language in England to-day is by no means the same as it was when our forefathers left England. In the minds of some the term "Americanisms" implies undesirable, inelegant, or even vulgar additions made to the English language by Americans. This is by no means true either in fact or in definition. By Americanisms are meant those different meanings and uses of the words common to both countries which prevail in America; and also the words new to the language which Americans have introduced. Among the classes of words which are regarded by students of the language as being more or less peculiar to America are:—

1. Archaisms, obsolete meanings in England.
2. Words used in a different sense in America from that in England.
3. Words which in America retain their old meaning but have taken on a new meaning in England.
4. English colloquial or provincial or dialectic words which have been incorporated into the language in America.
5. Words which the new conditions or new products in America have required to be newly coined.
6. Contributions from the French, Spanish, and Dutch languages, which America has received but England has not, chiefly because she has neither need nor use for them.
7. Words of American Indian origin.
8. Peculiarities of negro dialect and of African words used by negroes.

It is not at all strange that there are some differences between the language of the people of England and those of the United States. The most remarkable thing is that there are so few. In the narrow limits of England, dialects exist so different from each other that it is with difficulty that some of the people are understood by others. Three hundred years of separation from England, all of the time geographically and part of the time politically, is of itself enough to account for many of the changes. Among these is the retention by Americans of the older meanings of many English words, which have become obsolete or archaic in England. Americans continue to use many words as their forefathers learned them in England in the olden time. The large influx of foreigners into America is responsible for the introduction of many words which have become naturalized in this country but are unknown in England. The settlement of new regions, the introduction of new arts, and the new political and social conditions under which Americans live are also responsible for many changes.

Literary and commercial intercourse are large and powerful factors in preserving the similarity of language. Despite these, some radical changes in the language have been brought about in America.

A List of Words or Meanings Peculiar to America, with Their Sources.

ADOBE. Sun-dried brick used in Mexico and other countries having small rainfall. Introduced directly from the Spanish.

BACKWOODS. A newly coined word used freely in the United States and Canada to designate any thinly populated or remote districts away from cities.

BAGASSE. A plantation term to describe the refuse of sugar cane after crushing and extraction of the juice. Derived from the Spanish *bagazo* and the French *bagasse*. Contributed by the planters.

BARN. An American use of this word is a stable for horses. The English use the word stable in that sense, and restrict the use of barn to a place in which to store grain, hay, etc.

BAYOU. Used in the southern United States to denote the outlet of a lake, a member of a delta of a river, or a sluggish water course. Derived from the French *boyau*.

BEAD, TO DRAW A. A phrase of western American origin meaning to take deliberate aim. Draw in the West is a mining term indicating lifting or raising; the bead is the round or globular sight on the fore part or muzzle of the barrel of a rifle or revolver.

BED ROCK. A mining term used to describe solid rock underlying loose detrital masses such as sand and gravel.

BLAZE. A white spot made on a tree to show a boundary, trail, or path in the woods.

BLOODY SHIRT. A political contribution signifying to arouse indignation or resentment by referring in a demagogic manner to murders and outrages committed by political partisans, especially by members of the Kuklux Klan during the period of reconstruction in the South. The bloody shirt is the symbol of murder or outrage.

BOARDS. In America, boards are more than 4½ inches wide and less than 2 inches thick. The English use the word deals where we use boards.

BOGUS. A trade contribution originally used to describe counterfeit money; gradually extended to apply to anything based on sham or false pretense. Much conjecture has been indulged in tracing the origin of the word, some suggesting bagasse, others tantrabogus. It was used in 1827 in the Painesville (Ohio) *Telegraph* to describe a counterfeit money apparatus.

BONANZA. A mining term denoting a rich mass of ore; hence a profitable enterprise, good luck. Derived from the Spanish *bonanza*, meaning good weather at sea, prosperity, success. To strike a bonanza.

BOODLE. A political contribution referring to the fraudulent obtaining of money in public service. Derived from the Dutch *buidel*, property, estate, etc. Largely replaced by the modern word graft.

BOSS. A Dutch contribution from *bass*, signifying an overseer or superior.

BROOM CORN. The *Sorghum vulgare* grown extensively in the United States. From its panicles brooms and brushes are largely made. A plantation contribution.

BROTTUS. A word used by the negroes of Georgia to denote a small gift. It is also used to denote a quantity added or thrown in as a gratuity or "for good measure." Often spelled brotus. The word is of Anglo-Saxon origin.

BUCCRA, BUCKRA, or **BOCKRA.** A word, supposed to be of African origin, used by the negroes of the southern United States, the West Indies, and elsewhere to denote a white man.

BUGGY. In England, a one-horse, two-wheeled vehicle without a top. In America, a light, one-horse, four-wheeled vehicle, usually with one seat, either with or without a top or hood. The word is of Anglo-Indian origin.

BUMMER. A German contribution from *bummler*, a braggart or wanderer. The word is both colloquial and slang, especially in its contraction, bum, which signifies a drunken loafer.

BUNCOMBE. A political contribution signifying empty or meaningless talk; pointless speech-making. Wheeler's *History of North Carolina* says that a member for Buncombe in North Carolina tired out the members of Congress with an unentertaining speech which he admitted was only for Buncombe. Sometimes spelled bunkum.

BUTTE. A term used on the upper Missouri and west to the Pacific to denote a hill or mountain which is so conspicuous that it may be used as a landmark. The word is taken directly from the French, and its use is in a great measure a relic of the former occupancy of the Northwest by the French.

CACHE. A word introduced by the Canadian voyageurs around Hudson Bay. It means to conceal or a place of concealment, and relates to stores of provisions.

CALICO. In England, this is white or unprinted cotton; in the United States, it is printed or figured, never plain. First imported into England from Calicut, India, whence the name.

CANYON. The use of this word is peculiar to the United States; very rarely used in Mexico; and not at all in Spanish South America. A gorge or narrow valley with precipitous sides throughout the Cordilleras.

CARPETBAGGER. A political contribution describing those Northerners who, during the reconstruction in the South, sought for political office there and to influence the negro voters for unworthy purposes. An opprobrious epithet applied to any unpopular Northerner in the South.

CAUCUS. A political contribution describing the meeting of the members of a political party for conference. The word appears in the diary of John Adams under date of February, 1763. It originated in Boston, Mass., and some have conjectured that it is a corruption of *Calker's meeting*; others think this improbable.

CHINQUAPIN. A word of American Indian origin denoting a kind of dwarf chestnut (*Castanea pumila*) ranging from Pennsylvania to Texas; also the *Castanopsis chrysophylla* of the Sierra Nevada and Cascade mountains.

CHOWDER. A dish in which the chief ingredient is clams or other fish. Supposed to be derived from French *chaudière*, a caldron.

CLEARING. A word of American origin indicating a tract of land cleared for cultivation.

CLEVER. An American use of this word is in the sense of charitable, hospitable or good-natured. In England it is now restricted to skillful or intelligent.

COLD SLAW (properly *Cole Slaw*, or *Cabbage Slaw*). A Dutch contribution from *kool slaa*.

CONDUCTOR. This official on an American railway train is not known in England. The officer who most nearly takes his place there is called the guard; but his duties and authority are not nearly so extensive.

COPPERHEAD. A political contribution descriptive of a Northern sympathizer with the South. Derived from the venomous serpent of that name.

CORN. In the United States the word is restricted to mean maize or Indian corn; in England it is generally applied to wheat, rye, oats, and barley; in Scotland, to oats; in Ireland, to barley.

CORN SONGS. Used by the negroes in Maryland for harvest songs.

CORRAL. A term contributed by Western ranch life in America. It is the pen or inclosure into which horses or cattle are driven. A colloquial use of the verb to corral is to express the idea of capturing, making a prisoner of. The word is of Spanish origin and is accented on the last syllable.

COWBOY. A term contributed by American ranch life, indicating a man employed to care for grazing cattle and generally doing his work on horseback.

CRACKER. Used in the United States to denote the lower class of white hill dwellers of Georgia, Florida, and other Southern States. It is supposed to signify that his diet is chiefly cracked corn.

CRACKER. In the United States this is a hard, thin, crisp biscuit. A purely American use of the word.

CRACKLING. In the United States this word is used to denote the crisp residue from hog's fat after the lard has been tried out.

CRACKLINGS. A word used by negroes in the Southern States to denote a sort of bread containing roasted pork rinds.

CREOLE. A native of Louisiana of French or Spanish descent. Derived from the Spanish *criollo*.

CROW, TO EAT. A political contribution signifying doing something distasteful or humiliating; swallowing one's words; to be particularly mortified.

CRULLER. A Dutch contribution from *kruller*, to twist. It is a twisted doughnut.

DARK HORSE. A political contribution derived from horse racing, where a horse whose former performances are not known and little information can be obtained concerning it is called a dark horse. A candidate unexpectedly brought forward at a political convention about whose past career little is known.

DEPOT. An American use of this word in connection with railways was recently general in speaking of the passenger depot and the freight depot. The word station, commonly used in England, in this connection, is becoming more general in America; and freight house is also growing in use.

DIGGINGS. A mining term originally descriptive of a place where mining is carried on; but, in a colloquial sense in the western United States and in Australia, used for region, place, or locality generally.

DOUGHFACE. A political contribution describing a Northern politician who was inclined to accede to the demands of the South just before the war.

DRESS. American use of dress is often restricted to the garment worn by women which the English call a gown or robe.

DRUMMER. A trade contribution applied to a traveling salesman or commercial traveler; one who drums up trade.

EDITORIALS. The opening articles of a newspaper are called in America editorials; in England they are leaders; and in France they are *chroniques*.

ELEVATOR. In England this passenger and freight hoisting apparatus is called a lift.

FALL. Used when the English would use autumn. An old English use. It is the English people that have changed the use of this word.

FAVORITE SONS. A political contribution describing possible presidential candidates from the several states.

FENCE-RIDING or **TO BE ON THE FENCE.** A political contribution indicating a state of indecision or of neutrality concerning parties, persons, or questions.

F. F. V'S. An abbreviation for "first families of Virginia." A humorous allusion to the highest social class in the South.

FILIBUSTER. A political contribution to denote a member of the minority who resorts to obstructive or irregular tactics to prevent the adoption of a measure favored by the majority.

FIRE-EATER. A political contribution denoting a violent, bitter, Southern partisan before the war.

FIRE, TO FIGHT. An American contribution alluding to the desperate efforts of frontier settlers to prevent the spread of forest or of prairie fires.

FLESHY. The old English sense of stout, no longer prevailing in England, is preserved in America.

FOREHANDED. An old English sense of being well circumstanced regarding property or money has survived in America. The English use is now limited to the sense of early, timely, or seasonable.

FRESHET. The English use flood. An old English word, which the English themselves have changed.

GARROTE. To put to death by the garrote. Taken directly from the Spanish.

GERRYMANDER. A political contribution denoting an arbitrary arrangement or rearrangement of the political divisions of a state without regard to natural or proper boundaries, for the purpose of changing the political aspect or vote of the district. So called from such redistricting of Massachusetts in 1811 when Elbridge Gerry was governor.

GONE COON. A slang expression current in the United States and indicating one in a very bad way or in a hopeless condition or situation. Coon is an abbreviation of raccoon.

GOOBER. A term in the southern United States for the peanut; supposed to be of African origin.

GREENBACKER. A political contribution denoting a member of the party which demanded the suppression of banks of issue (1874), the confinement of currency to greenbacks, and the total or partial payment of the national debt in that currency.

HACK. In America, applied to a coach, or hackney-coach; in England a hack is a hired horse.

HALF-BREED. A political contribution denoting a member of the Republican party in New York state that in 1881 and succeeding years opposed the "stalwarts" of the party, who controlled the organization. Such was considered only half a Republican.

HATCHET, TO BURY THE. An expression denoting a cessation of hostilities or the end of a quarrel; founded on the ceremony of burying the tomahawk by North American Indians as a signal of friendship.

HEFT. In America heft means to estimate the weight of an object by lifting in the hand; in England the old sense of lifting has been retained.

HESSIAN FLY. A destructive insect, injurious to wheat; supposed to have been introduced into the United States during the War of Independence by the Hessian troops. The *Cecidomyia destructor.*

HOG-WALLOW. An American contribution to describe a peculiar kind of irregular surface upon which the clayey soil is broken up into a succession of hillocks and hollows like "cups and saucers turned topsy-turvy."

HOMELY. In America, plain-featured, not handsome; in England, homelike or unadorned.

HOMINY. A word of American Indian origin denoting hulled and ground or broken maize.

HOOK. A Dutch contribution from *hoek*, a corner; it is applied to a point of land turned landward at its outer end. Common in proper names on the New York and other coasts early settled by the Dutch.

HORSE CAR. The English speak of this conveyance as a tram.

HUNKER. A political contribution denoting a conservative in the Democratic party of New York state in 1845 who opposed the Barnburners or radical section.

INDIAN MEAL. A plantation contribution describing the meal made from maize or Indian corn.

JAYHAWKER. A political contribution denoting one who carried on irregular war in eastern Kansas in the early days of the Civil War.

JERKED BEEF. Beef cut into long, thin strips and dried in the sun. Derived from the Chilian *charqui.*

JEW. In America, to haggle or dispute in selling; in England, to cheat. An American might speak of trying to jew one down in price; an Englishman might declare that one tried to jew him out of a thing.

KEY. A low island near the coast. Used especially in regions where Spanish is or was formerly spoken. Derived from the Spanish *cayo.*

KILL. A Dutch contribution; signifies a small stream.

KOTOW. A word of Chinese origin indicating obsequious politeness.

KUKLUX KLAN. A political contribution; the name of a secret oath-bound society in the Southern States after the close of the Civil War whose members sympathized with secession and perpetrated outrages upon negroes and Northern sympathizers. The name is derived from the Greek *ku'klos*, a circle.

LAGNIAPPE. A word commonly used by the negroes of the Southern States to denote a gift from tradesmen when buying; good measure; a brottus.

LAM. To beat or to thrash. Of old English origin. No longer used in England, except, perhaps, provincially.

LASSO. A rope of hide from 60 to 100 feet in length, with a sliding noose, used in catching cattle and wild horses. Derived from the Spanish *lazo*, a snare.

LEVEE. A term in use in southern and western United States to denote an embankment along a river to confine it in its channel and also a landing place for vessels. Derived directly from the French.

LIKELY. An American use of the English word promising. An American may speak of a likely-looking colt, where an Englishman would call it a promising colt.

LOCOFOCO. A political contribution denoting one of the equal rights section of the Democratic party in 1835.

LOGGING CAMP. An American contribution to indicate the headquarters for men and horses while carrying on lumbering.

LOG ROLLING. A political contribution denoting the exchange of services to secure the passage of schemes or measures by politicians. Neighbors joined in helping one another to roll their logs; so politicians who assisted one another in their respective interests were engaged in log rolling.

LUMBER. An American speaks of lumber where an Englishman calls it timber. The English use of lumber is in the sense of something which encumbers or is heaped together in disorder, as, to lumber up a room.

LYNCH LAW. The administration of penalties by unauthorized persons to anticipate legal delays. The kind of law exercised by Charles Lynch (1736-1796), a Virginia planter who, with his neighbors, Robert Adams and Thomas Calloway, outraged and maltreated lawless or disaffected persons in his neighborhood, especially Tories and those opposed to the Revolutionary party.

MAIL. In America a letter is mailed; while in England it is posted. In America a package comes by mail; while in England it is received by post.

MESA. Commonly used throughout the southwestern United States to denote a table-land, a broad and flat river terrace, or a level or gently-sloping region. Taken directly from the Spanish.

METIF. An Indian half-breed or the offspring of a white person and a quadroon. From the French *métif.*

MOCCASIN. A word of American Indian origin denoting their peculiar foot gear.

MOONACK. A name of the woodchuck in southern United States. The negroes also use the word to denote a mythical animal. Supposed to be of American Indian origin.

MUGWUMP. A political contribution denoting one of the independent members of the Republican party who refused to vote with the party in 1884, but voted Democrat, Prohibitionist, or abstained from voting.

MUSTANG. A wild horse of the pampas and prairies of America. Derived from the Spanish *mesteño.*

NOODLES. A Dutch contribution from *noodlejes*, an imitation of macaroni; made from wheat flour and used in soups, etc.

NOTIFY. In America notify means to give notice; in England, to make known. The word is also used in America, where inform would be preferred in England.

OFFAL. Literally that part which *falls off.* An English term for those parts of a slaughtered animal not fit for food; also used in America. In the vicinity of Chesapeake Bay, "offal" is the small fish taken in nets and used for fertilizer because they are unfit for food.

OMNIBUS BILL. A political contribution applied to a bill embracing several distinct objects; it was the popular name for the Compromise of 1850 in which Clay combined several different objects. The bill was broken up into several individual bills and passed separately.

OPOSSUM. The name of this well-known animal is of American Indian origin (*opassom*).

OVERSLAUGH. A Dutch contribution from *overslaag*, to skip or pretermit. The word is peculiar to the United States and denotes to pass over in favor of another; to hinder or obstruct; to oppress or keep down.

PAN OUT. A mining term originally used to describe the yield of gold panned in a locality, but extended to mean yield or afford in any sense; to turn out more or less satisfactorily.

PICKANINNY. A child of a member of any negroid race. Derived from the Spanish *pequeño niño.*

PINDER. A name given to the peanut among the negroes in Florida and other Southern States. Supposed to be of African origin. Also pindar and pindal.

PIPE-LAYING. A political contribution denoting the preparation of plans for promoting a political scheme or measure.

PLANK. A political contribution denoting one of the articles or paragraphs in the platform of a party. The use is purely a figurative one, where the word platform is taken in a double sense.

POND. In America, a natural or artificial pool of water; in England, only artificial pools are called ponds.

PORTAGE. A common use in the United States; denotes portions of interrupting land along river courses which necessitate carrying the goods, boats, etc., from water to water. Derived directly from the French.

POSTED. A trade contribution derived from the ledger; supplied with fullest information; possessed of needed intelligence; well-informed.

POWWOW. A word of American Indian origin from *powan*, a prophet or conjurer. The word has a colloquial use denoting a meeting or conference at which there is more noise than deliberation.

PRAIRIE. This word is taken directly from the French. It was frequently used by Father Hennepin and other French writers in describing the areas adjacent to the Mississippi. Inhabitants of the prairies never speak of them as plains. The latter term is restricted by them to the arid, treeless wastes; but never applied to the richly fertile undulating prairies.

PRAIRIE SCHOONER. A term originating in western America and used to designate the white-covered wagon used by emigrants to convey themselves and goods across the prairies before the completion of railroads across the continent.

PRETZEL. A German contribution denoting a small, brittle biscuit fashioned in the form of a knot and salted on the outside.

PRIMARY. A political contribution denoting a meeting of voters belonging to the same political party who meet to choose candidates or delegates, etc.

PROSPECT. A mining term meaning to look for indications of gold or other mineral; gradually extended to describe a search or investigation for other things.

RACCOON. The name of this familiar animal is of American Indian origin.

RAFT. A colloquial use in America to indicate a miscellaneous or unassorted collection of articles as, a raft of papers, or a whole raft of things to attend to. The word is derived from the use of raft to indicate the collection of trees transported in rafts.

RECONSTRUCTION. A political contribution denoting the process by which, after the Civil War, the seceding states were restored to rights and privileges as members of the Union (1865-1870).

RELIABLE. An American uses reliable when an Englishman would use trustworthy.

ROUND-UP. A ranching term from western America and describing the herding or driving together of animals on a ranch for inspecting, counting, sorting, or branding. The word has acquired a meaning of the completing or finishing of some large task.

SACHEM. A word of American Indian origin, a sagamore or chief.

SALOON. In America this is applied to a place where intoxicating liquors are sold. An Englishman speaks of such as a tap-room, or grog-shop, or public-house. English use restricts saloon to a spacious, elegant apartment, or a hall for public amusements or entertainments.

SALT RIVER. A political contribution denoting the defeat of a candidate for political preferment. Such an one is said to go, row, or be sent up Salt River. It is said that the navigation of Salt River in Kentucky is extremely arduous and a hard task for the unfortunate rower.

SAMBO. The offspring of a black person and a mulatto. Derived from Spanish *zambo*.

SETTLE. A trade contribution from the accounting room; to liquidate; to pay; to balance.

SHINPLASTER. A political contribution denoting the small paper fractional currency issued by private and irresponsible parties during the suspension of specie payment. These were especially abundant in the panic of 1837 and during the war (1861-1865). Few of them were ever redeemed. When the government assumed the issuance, the term was applied to them also.

SHIVAREE. A mock serenade with horns, kettles, bells, either in annoyance or insult. Derived from the French *charivari*, and often so spelled.

SICK. The old English sense is retained in American use. The modern English use implies affected by nausea and a desire to vomit. In many cases where an American might use sick, an Englishman would say ill.

SKUNK. The name of this animal is of American Indian origin.

SLEEPER. This American designation of the wooden supports of car rails is a tie in England.

SMART. Several colloquial uses of smart are to be noticed in America. (1) Considerable or large; as, a right smart distance. (2) Extremely bright and clever; as, smart as a steel trap. (3) Keen in business; sharp and often of questionable honesty. In England the word is restricted to talented.

SMUDGE. In America, a smoke made to drive away mosquitoes, etc.; in England, any overpowering smoke.

SPELLBINDER. A political contribution denoting a political orator or party speaker. The term was first used during the presidential campaign of 1888.

SQUATTER. A term of American origin used to indicate one who settles upon land, usually public, without title to the same.

SQUATTER SOVEREIGNTY. A political contribution denoting the theory advocated by Democrats 1847-1861) and under Douglas that the people of a territory and not Congress had the right to decide whether slavery should exist within a territory. Called also popular sovereignty.

SQUAW MAN. An American contribution from the West to denote a white man who has married an Indian woman and has taken up the Indian mode of life either in part or in whole. Its use is generally contemptuous.

SQUELCH. To crush down; to put down. An old English word used by Samuel Butler in *Hudibras* and by others. No longer used in England.

STAKE A CLAIM. A mining term used to describe the marking out of a claim in gold regions. Later it meant the dividing off by means of marks or stakes.

STAMPEDE. A ranch term derived from the Spanish *estampido* and describing the panic-stricken rush of cattle in herds or droves.

STOOP. A Dutch contribution from *stoep*, and signifies the step or steps leading up to a house.

STORE. In America, applied to a shop. The English restrict the meaning to a place where goods are stored, and their use of the word corresponds to our idea of a warehouse or storehouse.

SUCCOTASH. Of American Indian origin, denoting a dish of maize and beans mixed.

TARRY. To delay. This is the old English form, common in the Bible and Book of Prayer. The English have discarded the word to a great extent.

TAVERN. Americans call a tavern what Englishmen call an inn, for in England there is never any lodging at a tavern. When lodging is supplied the place is an inn.

TEMPER. In America temper is the show or display of passion; in England it is the control of it.

TIMBER, THE. An American term to indicate the woods or the growing timber. The slang expression "taking to the tall timbers" means seeking a refuge from an embarrassing situation, and is a modification of "taking to the woods."

TOBOGGAN. A word of American Indian origin denoting a kind of sled without runners.

TOMAHAWK. A word of American Indian origin; the war ax of the Indians of North America. To bury the tomahawk was a signal of peace among the Indians.

TRACK. In America this means the rails upon which a train runs; in England it is always spoken of as the line.

TRAPPER. An American contribution indicating one who makes his living by trapping animals.

TRUCK-PATCH. A farm contribution descriptive of ground upon which vegetables, fruits, etc., are raised for market. The use of truck to describe the produce of a market garden is peculiar to the United States.

UGLY. In America ugly is often used where in England ill-natured would be used.

VENISON. In America venison means only deer's meat; while in England it means wild meat of any kind.

VEST. In England this article of a man's dress is always called a waistcoat.

VOYAGEUR. A French word in common use in America to denote the travelers in rivers and inland waters by boats or canoes. It has come directly into the language and has been widely disseminated by the very voyageurs themselves who early penetrated the remote parts of the country.

WIGWAM. A word of American Indian origin denoting a hut or house used by the Indians.

WILT. A colloquial use in America is that of becoming languid; of losing energy or strength. In America it is often used of plants when in England wither would be used.

WIRE-PULLER. A political contribution denoting a person in authority who manages the carrying through of a political enterprise or guides a political organization.

YAZOO FRAUD. A political contribution denoting the bill for the sale of a tract embracing what is now the state of Mississippi and one half of Alabama in 1795 by Georgia. The law was repealed in 1796 because it was fraudulently enacted. The U. S. Supreme Court in 1810 declared the repealing act void.

HOW TO WRITE OUR LANGUAGE CORRECTLY.

Style.—The term indicating clear, concise, melodious written language. When well written the words glide one after another without jar or harshness. The ear is pleased, and there is nothing to prevent the mind grasping the subject or the thought under consideration. Poor style is simply a lack of polish to the written literary diamond. The valuable idea, the powerful mental lever, may both be in evidence, but are heavily discounted in their capacity to convey.

Form.—The first step is to gather every possible detail of information concerning the subject treated. This should include every item already in the writer's mind, and all things available from other sources. Then present the facts in a manner suited to the intellectual caliber of the audience addressed. Whether it is an informal letter, a school composition, an essay, a thesis, a sermon, a legal plea, or the ringing oration of a statesman, the same rules of "form" apply. Lack of attention to these rules is the most noticeable weakness of untrained writers. Firstly—the subject is not thoroughly investigated; secondly—there is not grasped the immense importance of making the written thought carry the idea to the reader without possibility of misunderstanding. All written matter is a problem dubiously keyed to the intelligence of the reader. Thus the communication must be clear, simple, and direct to carry effectively to the greatest number.

Skeleton.—The skeleton of a letter, book, or speech is the ground-plan of the ultimate literary structure. The gathered facts are reviewed and arranged, thus forming the skeleton or outline of what is to be said. By use of this method each item is introduced according to its importance, each paragraph and sentence increasing the interest, and leading to the desired consummation. If no skeleton is made the items are extremely liable to be disadvantageously placed, or jumbled, and the direct, sledge-hammer blow of conviction seriously minimized. The expert and experienced writers of the day use the skeleton in every form of literary composition. The scenario is the skeleton of the prospective drama or opera. The framework is similar to that of a chronological table, successively and in correct order of importance presenting each memorandum of fact to be fully developed in the completed manuscript.

Purity of Style.—This exceedingly rare modern quality in literature is obtained by the use of strictly appropriate English words and phrases. The principal rules are:—

(1) Avoid, as far as possible, the use of foreign words or idioms.

(2) Avoid old-fashioned or quaint words; as *methinks, albeit, yclept,* and *erstwhile.*

(3) Avoid strange sounding, unusual, and unauthorized words.

(4) Avoid long, high-sounding words and a stilted or affected style.

(5) Avoid all slang, coarse, and vulgar words and expressions.

Exactness of Style.—Technical terms should only be used in technical articles.

The same word should not recur in a sentence. It is evidence of a limited vocabulary.

Essential parts of a sentence should not be omitted, or the sentence left ambiguously elliptical.

The natural order and logical sequence in a sentence should be observed.

Useless repetitions should be avoided.

The exact shade of meaning should be expressed by a correct use of synonymous words.

Perspicuity of Style.—Perspicuity means a freedom from obscurity, ambiguity, or doubt as to meaning. To attain it:—

(1) Adjectives, relative pronouns, participles, adverbs, and explanatory phrases must be placed as close as possible to the words with which they are grammatically connected or related.

(2) Repeat words needed to make the sense clear, to obviate double or ambiguous meaning.

Unity of Style.—This refers to a straightforward, unbroken line of thought in each paragraph and sentence throughout the manuscript. Where necessary to diverge, such broken connection should be brief and clearly marked. Distinct items should have separate paragraphs, and great care should be taken that these side-issues appear in the right place. Everything not actually pertinent to the subject must be sacrificed to the cohesion of the main thread of interest, no matter how alluring, decorative, or humorous the deviation appears to the mind of the writer.

Strength of Style.—Mainly consists of harmoniously blending directness, brevity, and cohesion of well-chosen words. Introduce the subject in as few words as possible to do full justice, state the evidence along all lines, and draw the conclusion or point the moral. Concentration is most effective when not overdone. Every writer must be his own editor, eliminating superfluous words, choosing simple words of the broadest, greatest scope and significance. As a rule, the thought expressed in fewest words is the strongest and the best English. The familiar, "He gives it as his opinion," should be "He states," or, at the most, "In his opinion," etc. A strong impression may be made by careful arrangement of the important words in a sentence. A weaker statement should never follow a stronger. A sentence made up of a short part and a long part should have the longer part placed last.

Forms of Prose Composition.—The recognized divisions of prose language composition are: (1) Narration. (2) Description. (3) Exposition. (4) Argument. (5) Oratory or Persuasion.

Narration.—Narrative literature presents occurrences in their proper order in time; makes the events pass vividly before the eyes of the reader; introduces us to the persons; tells us of the places; and in one form or another tells a story that entertains and instructs. Under this head are classed historical works, biographies, memoirs, autobiographies, journals, diaries, letters, books of travel, news of the day, and fiction.

History.—This branch of narrative literature is a systematic and accurate record of past events; especially the record of the events in which man has taken an active part. It varies from a bald statement of events in the form of chronicles to the charming unfolding of gorgeous panoramas of a nation's life and development.

Biography.—This is a written account of the life, action, and character of one person. Of this class of writing Carlyle says: "Biography is by nature the most universally profitable, the most universally pleasant, of all things." When the account is that of the experiences of the writer, it is an autobiography.

Memoir.—A narrative of the events happening within the memory of the writer is called a memoir. It may comprise the greater part of his life or may cover an interesting period of history with which he was connected.

Journals or *Diary.*—The systematic record, day by day, of the events during a man's life. "Pepys's Diary" and "Evelyn's Diary" have thrown much light upon great national events and the daily social life in England. Of Nathaniel Hawthorne, Henry James says: "For myself, as I turn the pages of his journals, I seem to see the image of the crude and simple society in which he lived."

Letters.—It has been said regretfully by some that the day of the good letter-writer is gone. Certainly the charm of the letters of the men and women of the last century seems lacking in those of the present day.

Travel.—Books of travel seem to combine the autobiography, the memoir, the journal, and the letter, in which the added charm of adventure, of strange lands and people, and of a constantly shifting scene both interests and instructs.

News of the Day.—This is merely the history of the present day in which society at large plays a strong part. The newspaper is growing to be, more and more, a strong factor in the education of thousands to whom it is the only reading matter.

The writing of news items requires special training in order to acquire that clear, direct, and vivid style which impels attention. The beginner usually suffers great humiliation when his first attempts pass under the editor's blue pencil.

Fiction.—The great difference between history and fiction is that events recorded as history are true, while fiction deals with purely imaginary circumstances. Perhaps the most remarkable feature of modern literary times is the great increase in works of fiction. Still it is among the enduring works of such great writers as Dickens, Thackeray, Scott, George Eliot, Hugo, Dumas, and Irving that the masterpieces of fiction are to be sought. In the great scope which the novelist's work affords, studies of society, psychology, art, science, literature, and history are often treated with consummate skill.

Short Stories.—The short story is a condensed novel. Much more skill and literary ability are required to excel in this than in the longer novel. A short story is not a sketch in that it is compact and deals with more characters, details, and events than are found in a sketch. Edgar Allan Poe was probably the greatest, as he was the earliest, of American short story writers. Bret Harte, George W. Cable, Ruth McEnery Stuart, Edward Everett Hale, and Thomas Nelson Page are also among the most famous in America.

Description.—By this form of writing, a mental image of external objects, or an idea of a person's character and mind, is given in words. Description is closely associated with narration, to which it lends a strong support in the development of plot. Lowell says: "In description Shakespeare is especially great and in that instinct which gives the peculiar quality of an object of contemplation in a single happy word that colors the impression on the sense with the mood of the mind."

Exposition.—This is the statement and discussion of an abstract or general theme. In it are included the essay, the treatise, the editorial, the review, and the criticism.

Treatise.—A treatise aims to present its subject in a complete and thorough manner, and usually reaches the scope of an entire volume or more than one.

Essay.—An essay presents its subject in a briefer compass, and in a more popular style, and is consequently less exhaustive than a treatise. Among the most notable examples of essays are those of Emerson, Macaulay, Bacon, and Carlyle.

Editorial.—An article in a journal or periodical written by the editor or his associates and published as an official argument or expression of opinion. Richard Grant White says that editorial is "an unpleasant Americanism for leader or leading article, which name is given to the articles in newspapers upon the leading topics of the day."

Book Reviews.—These are critical expositions which give in small space the general scope and literary or practical value of recent publications. Good book reviews are helpful when they give the busy man an idea of what is going on in the literary world; and when they guide one to a selection of good books.

Debates.—The basis of a debate is the expository form of composition. An essential of a debate is that the subject be so narrow in scope or so well defined in its limits that the opposing sides must discuss the same aspects or points of the question. It is a waste of time for one side to discuss one part or aspect of a subject, while the opposing side does not answer the arguments adduced, but deals with a wholly different aspect. A good debater not only states all that is to be said in favor of his side of the question, but must also be ready to refute or to disprove what is said by the opposing side.

Oration.—This form of exposition requires careful study and preparation. When a person has the privilege of choosing a subject for himself, care must be taken that the subject is so limited in extent that a full treatment of it is possible within the time limit. After one has studied the events and facts which relate to the subject, it is well to discuss these with others who have wider knowledge of the subject, not only for the purpose of adding to the stock of knowledge, but to be set right upon any wrong views or misconceptions. Then is the time to begin to prepare the outline or skeleton from which the oration is developed. After this comes careful revision.

Sermon.—This is an oration based upon some subject contained in a text of Scripture.

Lecture.—Much more liberty is allowed in a lecture than in the more formal oration, sermon, or essay. The scope is very broad; all possible sorts of subjects find their way into consideration; the style is as varied as the subject or its

treatment; yet there ought to be a very definite and logical outline upon which the structure is built.

Spelling.—The most atrocious spelling of words in ordinary use is a very common occurrence. Civil Service examinations show that 85 out of every 100 of the candidates fail in this one subject. Probably nothing shakes our confidence in another's ability or lessens our respect for his mental attainments so much as the discovery of his inability to spell correctly.

The first point by which a literary composition is judged is the ability of the writer to spell correctly. While it is considered a disgrace not to be able to spell the words one uses, at the same time little credit is given to a good speller, because it is one of the things that are demanded of every one. Correct spelling is the indication of the extent of a person's education. Good spelling is more essential even than good writing.

There are some who are said to be good spellers by nature and who acquire a knowledge of orthography (correct spelling) with ease. There are others, as every teacher knows, who have endless trouble and, despite their best efforts, are never sure of the spelling of some words. To even the best educated persons there come moments of perplexity when the right form of even a familiar word eludes them and the more they puzzle over the word the greater their uncertainty of the spelling of the word becomes.

When one is not sure of the spelling of a word there is only one certain course—consult a dictionary. Every student and writer of any age should have one of these indispensable aids always at hand for frequent consultation. In order to make sure that one is not publicly advertising a defect of education, every written composition, from letter to theme, should be read over with a view to correcting any errors which might expose the writer to humiliation or ridicule.

Rules to Aid in Spelling.—There are many helpful rules to assist one in spelling; but these rules seldom cover all cases. The exceptions are sometimes more numerous than the cases which the rules themselves will cover. This is a result of the irregularities of the language due to the many sources from which the words are derived and to the changes which these words have undergone.

Believe, receive, and such words perplex one, because of the changed position of the *i* and the *e*. This is covered in part by the aid:—

I before E,
Except after C.

Words of one syllable ending in *l* with a single vowel before it double the *l:* as *tell, sell, call.* But if the *l* is preceded by a double vowel or diphthong there is only one *l* at the close: as *fail, rail, feel.*

Derivatives of monosyllables ending in *ll* formed by adding one or more syllables generally retain both *l's*: as *skillful, skillfulness, willful, willfulness.* So also in *installment, thralldom* and similar words. But one *l* is dropped when adding the termination *ly,* to prevent the recurrence of three *l's*: as *ill, illy, dull, dully.* Words similarly formed by adding the termination *less* are written either with the three *l's* with a hyphen before the termination or with two *l's,* with the hyphen omitted: as *skill-less* or *skilless, smell-less* or *smelless.*

Words ending with silent *e* generally drop the *e* before taking an additional syllable beginning with a vowel: as *have, having; bride, bridal; lie, liar; move, movable; force, forcible.*

But the *e* is retained in some words to distinguish them from others: as *dyeing,* meaning coloring, distinguished from *dying,* expiring; *singeing* (burning) from *singing.* The *e* is also retained in *hoeing* and *shoeing.*

Words ending in *ce* or *ge* retain the *e* before a suffix beginning with *a* or *o* in order to preserve the soft sound of *c* or *g:* as *trace, traceable; change, changeable; courage, courageous.* But legal usage favors *mortgagor.*

When adverbs are formed by adding *ly* and nouns by adding *ment* to words ending in *e,* the *e* is usually retained: as *sure, surely; confine, confinement.* But *judge* and *acknowledge* drop the *e* and form *judgment* and *acknowledgment.*

Words of one syllable ending in a consonant preceded by a single vowel double the consonant on adding a suffix beginning with a vowel: as *run, running; big, bigger.* But if the final consonant is preceded by a double vowel or diphthong the consonant remains single: as *sleep, sleeping; plead, pleading.*

Words of more than one syllable ending in a single consonant and accented on the last syllable double the final consonant when suffixes are added: as *remit, remitting; commit, committee.* But if accented on the first or other syllable than the last (as trav'el) the single consonant is retained: as *travel, traveler.*

Words ending in *y* preceded by a consonant change the *y* to *i* and add *es* to form the plural: as *lady, ladies; comedy, comedies.* But if the *y* is preceded by a vowel the *y* is retained and *s* is added: as *valley, valleys; money, moneys.* An exception is made of names of persons, which are usually formed by the addition of *s*: as *Henry, Henrys.*

Words ending in *er* generally retain the *e* before the *r* when suffixes are added: as *refer, reference;* but some, as *hindrance, monstrous, wondrous,* and *disastrous,* elide the *e.*

Words which formerly ended in *our* are nearly all spelled with *or* now in the United States, though the *our* is largely retained in England: as *labor, honor, valor.*

Words ending in *o* generally form the plural regularly, as *solos, folios,* through usage differs in regard to some of them. A few nouns ending in *o* preceded by a single consonant form the plural by adding *es:* as *echoes, heroes, potatoes, tomatoes.*

Simplified Spelling.—Benjamin Franklin and Noah Webster were strongly in favor of a spelling reform.

Isaac Pitman, the inventor of phonography, labored for many years in England to simplify the spelling.

In 1874, at the annual meeting of the American Philological Association at Hartford, the president called attention to the "monstrous spelling of the English language."

In 1875, Prof. William D. Whitney of Yale University, and the first president of the American Philological Association, was one of

a committee appointed to consider the whole subject of spelling reform. In 1876 this committee reported in favor of it and laid down the principles which should guide the reform. The committee has been continued from year to year since then.

In 1876 an international convention for the advancement of English orthography was held at Philadelphia and Prof. Samuel D. Holdeman of the University of Pennsylvania presided. The convention resolved itself, on August 17, into the Spelling Reform Association.

In July, 1877, the "Standard Phonetic Alphabet" was adopted by the Spelling Reform Association.

In 1883 rules for simplified spelling were adopted by the American Philological Association and by the British Philological Association.

In 1886 a list of amended spellings was adopted by the American Philological Association and published in their *Transactions*.

In 1898 the American National Education Association adopted twelve simplified spellings: program, tho, altho, thoro, thorofare, thru, thruout, catalog, prolog, decalog, demagog, and pedagog.

In 1906 a list of 300 words was recommended by President Roosevelt to be used by the Public Printer at Washington in all government publications. This order was withdrawn on December 14, 1906, because the committee of Congress on printing did not approve of their use.

On November 13, 1907, the Board of Trustees of Columbia University officially adopted a list of 180 words to be used in all University printing. This list is as follows:—

Abridgment
Acknowledgment
Adz
Anapest
Antipyrin
Antitoxin
Arbor
Ardor
Armor
Assize
Ax
Bark (not barque)
Behavior
Brazen
Brazier
Bun
Bur
Caliber
Caliper
Candor
Catechize
Center
Check
Checker
Chimera
Civilize
Clamor
Clangor
Clue
Coeval
Color
Colter
Controller
Coquet
Criticize
Cue
Cutlas
Cyclopedia
Dactyl
Defense
Demeanor
Depos't
Develop
Dieresis
Dike
Distil
Dolor
Draft
Dram
Dulness
Ecumenical
Edile
Enamor
Encyclopedia
Endeavor
Envelop
Eon
Epaulet
Eponym
Era
Esophagus
Esthetic
Esthetics
Estivate
Ether
Etiology
Fagot
Fantasy
Favor
Favorite
Fervor
Fiber
Flavor
Fulfil
Fulness
Gage
Gazel
Gelatin
Gild (not guild)
Gipsy
Gloze
Glycerin
Good-by
Gram
Harbor
Harken
Hematin
Hiccup
Hock (not hough)
Homeopathy
Homonym
Honor
Humor
Hypotenuse
Idolize
Instil
Jail
Judgment
Labor
Legalize
License
Licorice
Liter
Lodgment
Luster
Mama
Maneuver
Materialize
Meager
Medieval
Meter
Miter
Mold
Molder
Molding
Moldy
Molt
Naturalize
Neighbor
Niter
Ocher
Offense
Omelet
Orthopedic
Paleography
Paleolithic
Paleontology
Paleozoic
Paraffin
Partizan
Patronize
Pedobaptist
Phenix
Phenomenon
Plow
Polyp
Practise v. and n.
Prenomen
Pretense
Preterit
Pretermit
Primeval
Program
Quartet
Questor
Quintet
Rancor
Raze
Recognize
Reconnoiter
Rime
Saber
Saltpeter
Savior
Savor
Scepter
Septet
Sepulcher
Sextet
Simiter
Skilful
Smolder
Somber
Specter
Succor
Sumac
Synonym
Tabor
Teazel
Tenor
Theater
Tumor
Valor
Vapor
Vigor
Vizor
Wagon
Whisky
Wilful
Woolen

Many changes in the spelling of words have been advocated and authorized by the Simplified Spelling Board, which, through the liberal endowment of Mr. Andrew Carnegie, is conducting an active campaign in this work. The changes advocated are radical, and the work is designed to reform the spelling gradually and not to make sweeping changes.

Handwriting.—The first essential is that the matter be easily read, as that is the purpose of the writing. Too lavish use of flourishes detracts from the legibility. Use only black ink, and never use a lead pencil in correspondence or in such formal or business writing as is intended to be preserved. The "fine hand" is generally hard to read and does not hide deficiencies in grammar, spelling, or education; generally it exaggerates them. Crooked writing is to be guarded against. Care in forming the letters properly, and especially in making all figures in amounts and dates, will conduce to legibility and intelligible communication. The "copperplate" hand is neither demanded nor appreciated in business or social circles. Handwriting is said to indicate character, temperament, and habits. It should be one's aim, then, to let it markedly display care, accuracy, neatness, and thought, rather than those qualities which made Horace Greeley's illegible writing a subject for ridicule.

USE OF CAPITALS.

To be able to use capital letters correctly is a sure mark of education. Generally speaking, too many are used rather than too few. The tendency in all writing and printing is to restrict the use of capitals to a far greater degree than was customary in olden times. An old book fairly teems with capitals where one would now never think of using them. The Germans use many more than we do, for nearly every noun in that language begins with a capital. The French use, perhaps, fewer than we, for they do not capitalize the names of the days of the week, or of the months, or adjectives derived from proper names, as we do.

(1) The first word of every complete or entire sentence must always begin with a capital letter.

It is an invariable maxim that words which add nothing to the sense or to the clearness must diminish the force of the expression.—*Campbell.*

(2) The first word after a period must begin with a capital letter.

The lower Himalayas are at first extremely disappointing. The scenery is enormous but not grand, and at first seems hardly large.—*F. Marion Crawford.*

When an interrogation point or an exclamation point is used to close a sentence and is equal in value to a period, the next word begins with a capital.

Shall I stay with you always? Yes, just as long as I live, you shall be my child.—*Maria S. Cummins.*

"Tarry thou, till I come!"—The words shot through me.—*George Croly.*

(3) Every line of poetry should begin with a capital.

Like as the waves make towards the pebbled shore,
So do our minutes hasten to their end;
Each changing place with that which goes before,
In sequent toil all forwards do contend.
—*Shakespeare.*

Though the quotation does not begin a complete line, the first word must begin with a capital.

His state
Is kingly; thousands at his bidding speed
And post o'er land and ocean without rest;—
They also serve who only stand and wait.
—*Milton.*

(4) The first word of a quotation after a colon, or when it is given in direct form, begins with a capital.

Sir Henry Wotton expresses the joy of manly independence in his poem which begins: "How happy is he born and taught that serveth not another's will."

Lepers sit by the sunny walls, and your soul cries, "Unclean! Unclean!" while you loosen your purse-strings.—*George William Curtis.*

(5) The several names and appellations of Deity must begin with a capital letter.

These include: God, Jehovah, the Almighty, the Supreme Being, the Lord, Providence, the Messiah, the Holy Spirit, Jesus, Christ, Father, Son, Infinite One, the First Cause, the Saviour, etc.

(6) The names of the months and of the days of the week are written with capital letters.

January. Monday the 15th of July. He came on Tuesday.

(7) The names of holidays, festivals, fast days, and feast days, whether civil or religious, are usually written with an initial capital.

Christmas, Labor Day, Easter, Yuletide, Whitsunday, Ash Wednesday, Good Friday.

The names of the seasons, unless personified as in poetry, are not capitalized.

(8) All proper nouns are written with an initial capital. These include:—

(*a*) Names of persons, real or fictitious:—

Thomas Jefferson, Oliver Cromwell, Adam Bede, William II., Joseph H. Choate.

(*b*) Names of places:—

Chicago, New Orleans, Liverpool.

(*c*) Names of streets:—

Broadway, State Street, Pennsylvania Avenue, The Strand, Rue de Madeleine.

(*d*) Names of mountains:—

Andes, Sierra Nevada, Rocky Mountains, the Alps, Himalayas.

(*e*) Names of lakes:—

Lake Erie, Salt Lake, Dead Sea, Caspian Sea.

(*f*) Names of rivers:—

Mississippi, Amazon, Seine, Tiber.

(*g*) Names of ships:—

Lusitania, Kaiser Wilhelm der Grosse, Great Eastern.

(9) All adjectives derived from proper names:—

American, English, French, German, Jeffersonian, Alpine, Amazonian.

(10) In writing the title of a book it is customary to capitalize the important words in the title, such as the nouns, verbs, and adjectives, but not prepositions and conjunctions.

Roget's Thesaurus of English Words and Phrases. Sturgis's A Dictionary of Architecture and Building. Brown and Butterworth's The Story of the Hymns and Tunes.

In cataloguing books on library cards it is customary now to use no capitals in the title except the first initial letter and the initials of proper names which occur in the title.

Alford, Greek testament with revised text. Dodge, Bird's-eye view of our civil war.

But such is not the general and popular custom.

(11) The names of societies, associations, and corporate bodies are written with an initial capital for all important words in their titles.

Young People's Society of Christian Endeavor. Roman Catholic Hierarchy of the United States. International Order of the King's Daughters and Sons.

(12) The pronoun I and the interjection O are always in capitals.

Stay, O stay! nor thus forlorn
Leave me unblessèd, unpitied, here to mourn.
—*Gray.*

Oh is not capitalized excepting when it stands at the beginning of a sentence.

The other evening we went to the ball at the Tuileries, and oh! it was splendid.—*George William Curtis.*

(13) Names of religious denominations begin with capitals.

Methodists, Unitarians, Presbyterians, Roman Catholics, Episcopalians, Christian Scientists.

(14) In all accounts or bills, the names of the separate items begin with capitals.

(15) Official and honorary titles begin with capitals when they occur before the name of the bearer.

President Roosevelt, Senator Brown, Secretary Hay.

If written after the bearer's name, they are preferably in small letters.

The late Grover Cleveland, ex-president of the United States.

When titles of honor are abbreviated and written after the bearer's name, these are capitalized. Such include degrees from universities.

William P. Thomas, M.D., D.C.L.; Hon. William Taft, D.C.L.; James Edwards, M.C.

(16) When a word is of very especial importance, whether an event, or transition, it may at the choice of the writer be rendered emphatic by writing with a capital. Thus we see such words as renaissance, revival of letters, reformation, middle ages, written both with and without capitals.

Often the principal subject of a composition is written with a capital letter whenever it occurs.

(17) A word, which when occurring only once or rarely upon a page would be written with a capital, is not so written if it is frequently repeated. A congressman addressing the chair as "Mr. Speaker" would be reported with a capital letter in Speaker, but addressing him as "sir" as is usually done, a small s would be written in "sir."

(18) We write china silk, india ink, india rubber, turkey red, castile soap, majolica ware, prussian blue, canton flannel, with small letters though derived from names of places. This is because they have become thoroughly incorporated into our language as common rather than proper nouns.

(19) When a title is used alone without the bearer's surname, we write the title with a capital letter.

(20) Orient, Occident, Levant, are written with capitals when used as proper nouns to denote well defined geographical zones or districts. Otherwise they are written with small letters.

(21) Christianize, Hellenize, Anglicize, and some other verbs derived from proper nouns are written with capital letters. But there are many such which have been more closely and

intimately incorporated into the language and by frequency of use and consequent familiarity have come to be written with small letters. Among such are: boycott, out-herod, macadamize, japan (leather), galvanize (iron).

(22) In denoting parts of the country by the points of the compass, such terms are written with capital letters.

Out West. In the South. The Northwest. Going East.

(23) When a geographical, political, or physiographical conformation is used as a title it is written with a capital.

Rocky Mountains, Mississippi River, Barbary States, Death Valley, Sioux City, Cook County.

But when this descriptive word is written before the distinctive word a small letter is usually employed.

The county of Westchester; the state of Texas; the kingdom of Italy.

(24) In a formal resolution the first word after *Resolved* begins with a capital letter.

(25) The names of political parties are written with a capital letter.

CORRECT PUNCTUATION.

Without punctuation marks all of our writing would be in simple sentences only, with a separate sentence for each statement. It would be impossible to show clearly the relative importance of each statement or to indicate that one sentence modified or restricted another. There could be no complex or compound sentences and both description and reasoning would be difficult. By the proper use of the several punctuation marks, we show clearly to the reader the full meaning of our statements.

Serious losses and much legal entanglement have resulted from the misplacing of even a comma. In legal documents great care is taken with punctuation, and many more marks are used in them than in ordinary writing and printing. All possibility of ambiguity or of misinterpretation is removed by what is known as close punctuation. Fifty years ago the pages of ordinary books were lavishly sprinkled with punctuation marks, in strange contrast to those of the present day.

The characters or marks used in punctuation are the following:—

Comma	,	Asterisk	*
Semicolon	;	Obelisk or Dagger	†
Colon	:	Double Obelisk	‡
Period	.	Section	§
Interrogation	?	Parallels	‖
Exclamation	!	Paragraph	¶
Dash	—	Index	☞
Parentheses	( )	Brace	⏞
Brackets	[ ]	Caret	∧
Apostrophe	’	Breve Accent	˘
Hyphen	-	Acute Accent	´
Quotation Marks	“ ”	Grave Accent	`
Diaeresis	¨	Circumflex Accent	^
Ellipsis	* * * *	Cedilla	ç

The marks of reference are now seldom used in the best books, having given place to superior figures or small italic letters.

Comma.—(1) Two or more words connected in sense, but with the connecting word not expressed, are separated by commas.

Alfred was a brave, pious, patriotic prince.

(2) A relative clause which conveys an additional thought is separated from the rest of the sentence by commas.

The emperor, who had just arrived, immediately took command.

But when a relative clause restricts the meaning of the antecedent to a particular sense the commas should be omitted.

Happy are the people who have no history.

(3) The part of the sentence containing the noun absolute is separated from the rest of the sentence by commas.

Shame being lost, all hope of repentance is lost.

(4) The part of the sentence containing the nominative case independent is separated from the rest of the sentence by commas.

Brightest in dungeons, Liberty, thou art.

(5) Nay, so, however, hence, besides, perhaps, probably, finally, in short, at least, moreover, again, first, secondly, lastly, once more, on the contrary, and similar words and phrases are usually inclosed by commas.

(6) Nouns in apposition with or without explanatory words or phrases are usually separated by commas.

O Music! sphere-descended maid,
Friend of Pleasure, Wisdom’s aid!
—*William Collins.*

But commas would not be used if the title is used as a part of the name.

Paul the Apostle of the Gentiles was eminent for his zeal and knowledge.

(7) Words of another writer introduced directly and not as a quotation are separated by a comma.

I pity the man who can travel from Dan to Beersheba and cry, ’T is all barren.

(8) Words and clauses expressing contrast are separated by commas.

Though deep, yet clear; though gentle, yet not dull;
Strong, without rage; without o’erflowing, full.
—*Sir John Denham.*

(9) When a word is omitted and its place is taken by a pause in reading or speaking, its place in writing is taken by a comma.

From law arises security; from security, inquiry; from inquiry, knowledge.

(10) Such expressions as, that is, as, namely, to wit, viz., take a comma after them.

He will be promoted; that is, if he prove worthy.

(11) When a subordinate clause in a complex sentence comes first, it is separated by a comma.

If thou art wise, thou knowest thine own ignorance. —*Luther.*

(12) Two short, complete, and independent statements in one sentence may be separated by a comma.

You may paint with a very big brush, and yet not be a great painter.—*Carlyle.*

(13) Two words differently modified in the same construction are separated by a comma to avoid confusion.

The sheriff wore a cocked hat, and a sword.

(14) When a whole clause is the subject of the principal verb, it is not usually separated by a comma unless the clause ends with a verb which might cause confusion.

That the voice of the common people is the voice of God is as full of falsehood as commonness.—*Warwick.*
That that is, is.—*As You Like It.*

Semicolon.—(1) In a sentence composed of several members, each a distinct statement, and each dependent upon the other, the parts are separated by semicolons.

My way of life
Is fallen into the sere, the yellow leaf;
And that which should accompany old age,
As honor, love, obedience, troops of friends,
I must not look to have; but, in their stead,
Curses, not loud, but deep, mouth-honor, breath,
Which the poor heart would fain deny, and dare not.
—*Macbeth*, v. 3.

(2) A compound short sentence made up of two closely connected ideas has the parts separated by a comma; but when the ideas are not so closely connected use a semicolon.

My name is Norval; on the Grampian hills my father feeds his flock.—*Home.*

But

My mind to me a kingdom is,
Such perfect joy therein I find.—*Byrd.*

(3) When one or both of the members of a compound sentence contain commas, separate the members by a semicolon.

Mercy is above this sceptred sway,
It is enthronèd in the hearts of kings,
It is an attribute to God himself;
And earthly power doth then show likest God's
When mercy seasons justice.
—*Merchant of Venice*, iv. 1.

(4) A sentence consisting of a direct statement followed by another introduced by for, but, and, or similar word is divided by a semicolon.

Many speak the truth when they say they despise riches and preferment; but they mean the riches and preferment possessed by other men.—*Colton.*

(5) When a series of ideas depends upon a statement made at either the beginning or end of a sentence, the members of the series are usually separated by semicolons.

Learn to be pleased with everything: with wealth so far as it makes us of benefit to others; with poverty, for not having much to care for; and with obscurity, for not being envied.—*Plutarch.*

This rule is often stated thus: A succession of clauses depending upon one principal expression should be separated by semicolons.

Colon.—(1) A colon is placed between the chief divisions of a sentence when they are but slightly connected and are themselves divided by other marks of punctuation.

Gather ye rosebuds while ye may,
Old Time is still a-flying:
And this same flower, that smiles to-day,
To-morrow will be dying.—*R. Herrick.*

(2) A colon is used after a sentence which announces a direct quotation.

(3) A colon is used after the word *following*, when a list of things is given.

(4) The colon is used after the "Dear Sir" or other address in letter writing. Sometimes the colon is followed by a dash, but this use is disappearing.

(5) A colon follows "Yes" or "No" when the rest of the sentence deals more fully with the affirmation or negation.

Yes: you will find people ready enough to do the good Samaritan, without the oil and twopence.—*S. Smith.*

No: creation, one would think, cannot be easy.—*Carlyle.*

Period.—(1) A period marks the close of every declarative and imperative sentence.

He buys very dear who begs.

(2) All abbreviations are followed by a period.

No. for number. Jas. for James. D.C.L. for Doctor of Civil Law. M.D. for medical doctor or Doctor of Medicine.

The Roman numerals are treated as abbreviations and are followed by a period.

Louis XIV., king of France. Henry I. was surnamed Beauclerc.

But when the possessive form is used the period is omitted.

William I's son Richard.

The period does not follow an abbreviation in which the ellipsis is marked by an apostrophe; nor in 1st, 2d, 3d, etc.

When a period follows an abbreviation it does not preclude the use of another punctuation mark immediately after the period if necessary.

The Norman kings of England were: William I., William II., Henry I., Stephen, Henry II., Richard I., and John.

Interrogation.—(1) Every direct question is followed by an interrogation point.

What is the use of health or life, if not to do some work therewith?—*Carlyle.*

(2) An interrogation point is often inserted in parentheses in any part of a sentence to express doubt.

One who said he was his friend (?) told me so.

When the entire question is a quotation the interrogation point should be placed before the last quote-marks.

"And who is he?" said Henry.

If only part of the question is quoted, the point should follow the last quote-marks.

Do you know who wrote "The Pioneers"?

Exclamation Point.—(1) The exclamation point is used to express any sudden emotion, as surprise, joy, grief, love, fear, hatred, anger, pity, or anxiety.

"Ah, that 's it! that 's it!" shouted the whole party delighted with the solution of the initial difficulty.—*Conscience.*

(2) The exclamation point follows the noun or pronoun after an interjection.

O blissful day! Ah me! how soon we pass!
O shame! where is thy blush?

The exclamation point usually follows Oh immediately if some other mark does not.

Oh, you have come at last!
Oh! I do not wish to deceive you.

The exclamation point is placed within the quote-marks, if the whole sentence is quoted; outside, if only a portion is quoted.

(3) One or several exclamation points may be inclosed in marks of parenthesis to denote surprise at, or ridicule of, a statement.

(4) An exclamation point follows a question to which no answer is expected.

What is more amiable than virtue!

Marks of Parenthesis.—These marks inclose parenthetical matter thrown into a sentence, which may be omitted without destroying the sense or the grammatical construction.

We have nothing to do with what is happening in space (or possibly may happen in time): we have only to attend to what is happening here and now.—*Ruskin.*

When the parenthesis is a question the interrogation point falls inside the last mark.

Brackets or Crotchets.—(1) Brackets are generally used to inclose corrections in a quoted statement, or to add words improperly omitted.

(2) When a parenthesis includes another parenthesis, brackets are employed on the outer parenthesis and marks of parenthesis on the inner.

Commas have taken the places of both parentheses and brackets in recent days. Speaking generally, the use of brackets or parentheses leads to an involved sentence which would read much better and more clearly if split up.

Hyphen.—(1) The hyphen is used to connect two words which are so used as properly to form a compound word, as sea-water, far-reaching.

(2) The hyphen is used to indicate the division of a word into syllables, as el-e-men-tal.

(3) The hyphen is used at the end of a line to connect the syllables of a divided word.

(4) In indicating the component parts of words, if a hyphen follows the part, a prefix is denoted as ad-, pro-, per-, and sub-. If the hyphen precedes it, a suffix or affix is denoted, as -tion, -ly, -ment, and -est.

Dash.—(1) The dash is used to indicate a sudden turn in a sentence or an abrupt termination, or interruption.

Where we made the mistake—but let us forget it.

(2) The dash is rapidly displacing the marks of parenthesis and brackets in parenthetical writing.

(3) The dash marks the omission of letters.

I saw General L——n there.

(4) A dash follows a question and precedes the answer when both are on the same line.

Q. Where do you live?—In San Francisco.

(5) A dash is often used before an expression which is repeated for especial emphasis.

(6) A dash precedes a partial quotation.

Ben Jonson speaks of

—"the vulgar sort
Of nut-crackers, who only come for sight."

(7) A dash also denotes hesitancy in speech.

I think it will be necessary to—to—to—

Quotation Marks.—(1) A word, phrase, or sentence transcribed from an author in his own words is placed between quotation marks.

And here I am reminded that it is Pope who says "The proper study of mankind is man."

If a passage is not quoted *verbatim*, but only in paraphrase, no quotation marks are used.

(2) When a quotation occurs within a quotation double quotation marks are used for the whole quotation, and single quotation marks for that within.

"He said very pleasantly, 'What is your name?'"

(3) When a passage quoted consists of more than one paragraph, quotation marks are used only at the beginning of each paragraph and at the close of the last.

(4) When especial attention is called to a long quotation, single quotation marks may be used at the first of each line quoted.

Apostrophe.—(1) The apostrophe is used to denote the possessive case, as "Milton's."

(2) The apostrophe denotes a contraction by the omission of one or several letters, as "'t is" for "it is," "is n't" for "is not," "lov'd" for "loved," "I 'll" for "I will."

(3) The plural of proper names is not written with an apostrophe, as "Smiths" not "Smith's," "Marys" not "Mary's."

(4) When the plural of numerals is written wholly in letters no apostrophe is used; but if the figures for the numerals are used, add an apostrophe with s, as *twos, threes,* and *fours;* or 2's, 3's, and 4's. The plural of letters is written thus: "Mind your P's and Q's."

Diaeresis.—(1) The diaeresis is placed over the latter of two vowels to show that they are to be pronounced in separate syllables, as coöperate, Laocoön, preëngagement.

Letter Writing.—The art of letter writing has been mourned by many as a lost art. It is said that the letters of the present day do not compare in interest, style, and attractiveness with those of fifty years ago. The ease of travel, frequency of mails, the general rush of life, and the common use of the telephone have, no doubt, all had their effect upon the intercourse between people.

The importance of using great care in the writing of letters has in no wise diminished. Errors in spelling, grammar, choice of words, as well as clumsily constructed sentences and bad taste in the choice of materials, give just as much offense, and decide as strongly against a man, as they ever did.

Materials.—Fine paper and thick envelopes are the first requisite. Cream-white paper that folds once to go into an oblong envelope is preferred for social use. Pure white paper of fine quality, folding once across and twice the other way to fit a No. 6 or commercial envelope, is the best for business use.

Jet-black ink is the only color sanctioned by the best usage. Nothing is so trying upon both patience and eyes as a pale or a brilliant colored ink, especially when a fine pen is used.

Under no circumstances write a letter with a lead pencil. Its use is properly regarded as a discourtesy.

Do not tear a sheet of paper in halves, no matter how short your letter. This does not show economy but meanness, and it may occur in cases where it would give a wrong impression.

Writing materials are so inexpensive that one should have a plentiful supply of good material always at hand. Blotting paper, pens, ink, and paper should always be at hand and easily accessible, especially in homes where letter writing is least frequent.

Language in Letters.—Written language is always more formal and more correct than spoken language. The many slang terms, contractions such as don't, won't, etc., and colloquial expressions are not to be used in letter writing. Grammatical accuracy and the correct use of words are, if possible, to be more positively insisted upon in a letter than they are usually regarded in speaking. The structure of sentences and of paragraphs, punctuation, and the use of capitals, are of extreme importance in letter writing, and conciseness and exactness of expression are absolutely necessary. Perhaps the first essential is to see that in all cases your meaning is absolutely plain. If this can be secured in few words, then the prime requisites of a good letter will be secured. Correctness in spelling, grammar, and all of the niceties of expression will go for nothing if you do not express yourself both clearly and fully.

Young persons should be encouraged to write letters to their friends. They should be supplied with every facility for so doing. Not only should materials always be at hand when needed, but parents should suggest topics or subjects, however trivial, upon which the young may write to others. It is by practice that skill in the use of words comes, and children should not rely upon formal school exercises, perfunctorily performed, for the development of this most essential and much neglected accomplishment.

Parts of a Letter.—The parts of a letter now generally recognized are:—

(1) The Heading.
(2) The Address.
(3) The Salutation.
(4) The Body of the Letter.
(5) The Complimentary Close.
(6) The Signature.

The Heading, including the date and location, is the first point to be considered. Always date a letter exactly. In a business letter the date comes at the top of the page. In a social letter it may be reserved until the last if the writer chooses. If a reply is expected, the heading includes the full address of the writer.

The Address in a business letter is full and includes practically all that will appear upon the envelope. This, like the date, may appear either at the beginning or at the close of the letter.

The Salutation depends upon the nature of the letter, the station of the person addressed, and the degree of intimacy existing between the persons concerned. In ordinary business "Dear Sir" and "Dear Madam" are the forms almost universally employed. "Sir" and "Madam" are very formal modes of address. A woman, whether married or single, may always be addressed as "Dear Madam." One may also write to a single woman with the address "Dear Miss Wilson" with equal propriety, but not as "Dear Miss." "My dear Sir" and "My dear Madam" are regarded as being more formal or more distant than "Dear Sir" or "Dear Madam." In England the reverse is the case. The form "Dear Sirs" is much to be preferred to "Gentlemen," because one would never think of beginning a letter to one person with "Gentleman." The use of capital letters in the Salutation is largely a matter of taste and we may write either "My Dear Sir" or "My dear sir" with equal propriety. The Salutation may be followed by a colon as:—

My dear sir:

or by a comma, as:—

My dear sir,

whichever one prefers.

The Body of the Letter may begin upon the same line as the salutation or, as is more frequently done, on the next line below. There are some who invariably begin a letter with excuses for not having written before. If that is needed in a letter, defer it until later on. Do not begin with the pronoun "I" if it can be avoided; and do not let that letter occur too frequently; a little care in the structure of sentences will avoid this. Give each topic a separate paragraph. Finish each topic fully before leaving it.

The Complimentary Close, like the Salutation, depends upon the persons concerned, and the nature of the letter. The most generally used are "Yours truly" and "Respectfully yours." They are what might be termed safe expressions to use. Affection, regard, and esteem will suggest other forms, such as "Sincerely yours," "Faithfully yours," "Affectionately yours," "Very cordially yours," "With kindest wishes, I remain," and many others.

These are written on the line below the last one of the body of the letter. The first word of the Complimentary Close should always be capitalized. A comma follows the last word.

The Signature, except in informal letters between intimates, should always be the full name. Many business letters are not signed by the senders, and endless trouble results from this carelessness. There is need of the fullest information as to name and address when a reply is expected. If a woman wishes to indicate that she is married she may inclose "Mrs." before her name as: (Mrs.) Ellen T. Ferguson.

Similarly a single woman may sign (Miss) Jane F. Anston.

The Superscription or Address upon the envelope is always to be clear as to the identity of the person and the locality in which he lives. Care in this regard insures more speedy delivery and often prevents disappointment. It is not now considered necessary to punctuate each line of the superscription with a comma, though it is quite permissible to do so. If commas are used there, a period must appear at the end of the lowest line. It is customary to add titles to the names of persons for whom the letter is intended. In England and in Canada the use of "Esq." is very general, when a man has no title. Sometimes "Mr." is prefixed to the name. But only one such may be used at a time. It is wrong to address a person as "Mr. Clarence F. Thomas, Esq." Write either "Mr. Clarence F. Thomas," or "Clarence F. Thomas, Esq." Where a man has gained several degrees the highest is chosen. If a man has secured both D.D. and LL.D. use both and put LL.D. last, as: James L. Adams, D.D., LL.D.

Prefix "Rev." before a clergyman's name and add abbreviations for his degree. Write before a bishop's name "Rt. Rev." for "Right Reverend" and append titles. Prefix "Hon." before the names of the Vice-President, members of the Cabinet, members of Congress, mayors of cities, judges, consuls, and other officials, and follow with any title, but never with "Esq." Never address or speak of a doctor's wife as "Mrs. Dr. Edwards," but as "Mrs. A. H. Edwards."

Examples of Formal and Familiar Correspondence.—Formal invitations and communications passing between persons not acquainted are often written in the third person throughout. Upon occasions of great formality and for large gatherings the invitation is generally engraved and printed.

AN INVITATION TO A WEDDING AT CHURCH.

Mr. and Mrs. Thomas Carter
request your presence
at the marriage of their daughter
Muriel
to
Mr. Charles Payton Tyrrell
Thursday evening, May Sixth
at half-past seven o'clock
First Baptist Church
Reading, Pennsylvania

INVITATION TO AN AT HOME FOLLOWING THE WEDDING.

Mr. and Mrs. James Ross Eaton
At Home
Thursday afternoon, January fifth
from half-past four until ten o'clock
653 Euclid Avenue

Or:—

Mr. and Mrs. James Ross Eaton
Reception
from half-past four until ten
653 Euclid Avenue

INVITATION TO AN AT HOME AFTER THE HONEYMOON.

Mr. and Mrs.—(bridegroom's name)
At Home
Tuesday evenings in December
from eight until ten o'clock
653 Euclid Avenue

INVITATION TO A RECEPTION AT THE HOME OF THE BRIDE'S PARENTS AFTER THE HONEYMOON.

Mrs.—(bride's mother's name)
Mrs.—(bride's name)
At Home
Wednesday, December Tenth, from four until ten o'clock
653 Euclid Avenue

INVITATION TO A WEDDING AT RESIDENCE.

Mr. and Mrs. Wilson Everett
request the honor of your presence
at the marriage of their daughter
Beatrice
to
Mr. Albert Percy Edmunds
on Thursday afternoon, October Sixteenth
at four o'clock
659 Fifth Avenue

FORM OF MARRIAGE ANNOUNCEMENT.

Mr. and Mrs. Wilson Everett
announce the marriage of their daughter
Beatrice
to
Mr. Albert Percy Edmunds
Thursday, October Sixteenth
659 Fifth Avenue

GENERAL NOTE OF INVITATION.

Mr. and Mrs. Thomas Jones Wilson request the pleasure of Mr. and Mrs. James Clark's company next Friday evening at eight o'clock.
18 State Street, May Sixteenth.

REPLY ACCEPTING THE INVITATION.

Mr. and Mrs. James Clark accept with pleasure the kind invitation of Mr. and Mrs. Thomas Jones Wilson for Friday evening.
146 Clifford Street, May Seventeenth.

REPLY DECLINING THE INVITATION.

Mr. and Mrs. James Clark deeply regret that they cannot accept the kind invitation of Mr. and Mrs. Thomas Jones Wilson for Friday evening.
146 Clifford Street, May Seventeenth.

INFORMAL INVITATION TO DINNER.

My dear Sir:
Governor Anderson will dine with us on Thursday next at seven o'clock. It will give us very great pleasure if you will favor us with your company on that occasion.

Very cordially yours,
James P. Clark,

To James R. Simpson.
May 17, 1908.

ANSWER TO PRECEDING.

My dear Sir:
It will give me great pleasure to dine with you Thursday evening and meet Governor Anderson.

Very truly yours,
James R. Simpson.

To James P. Clark.
May 18, 1908.

NOTE ACCOMPANYING A WEDDING GIFT.

Miss Eva Clinton sends her kindest love and best wishes to Miss Amelia Rowan and asks that she will accept the accompanying trifle as a token of her affection and desire for her future happiness.
January Fifth, 1910.

REPLY TO THE PRECEDING.

Miss Amelia Rowan presents her compliments and sincere thanks to Miss Eva Clinton for the exquisite token of her affection and good wishes.
January Fifth, 1910.

LETTER OF CONDOLENCE
to a friend on the death of her husband.

Rochester, N. Y.,
November 7, 1908.

My dear Mrs. Van Arsdale:
Any word of mine will prove but poor comfort to one in such deep affliction as yours, yet I cannot refrain from offering to you my most sincere and heartfelt sympathy. My own grief at the loss of a beloved and highly valued friend teaches me how great must be your sorrow; but knowing your Christian fortitude under other circumstances. I trust that heavenly balm and consolation will be poured upon your heart. May God bless and sustain you, my dear friend.
If I can in any way be useful to you, or relieve you of any care, please call upon me.

With deepest friendship,
Yours sincerely,
Julian Suydam.

Mrs. Henry Van Arsdale.

LETTER ASKING A FAVOR.

Albany, N. Y.,
October 19, 1908.

Dear Alma:
If you have finished reading Milton's "Paradise Lost," illustrated by Doré, will you kindly lend it to me for a few days? I wish to compare it with my new edition of the "Ancient Mariner," illustrated by the same artist.

Lovingly yours,
Sarah.

Miss Alma Bainbridge.

LETTER GRANTING A FAVOR.

Dear Sarah:
With pleasure I send the book, and hope that you will find it of value in your study of Doré.

Yours affectionately,
Alma.

October 20, 1908.
Miss Sarah Stanhope.

LETTER OF INTRODUCTION.

Boston, Mass.,
Dec. 11, 1909.

My dear Sir:
Permit me to introduce the bearer, Mr. F. J. Howland, of Boston. Any attention shown him will be greatly appreciated.

Yours truly,
M. L. James.

To Mr. T. W. Eliot,
Chicago, Ill.

REPLY TO AN ADVERTISEMENT.

Kansas City, Mo.,
May 9, 1909.

Dear Sirs:

In reply to your advertisement in to-day's *Tribune*, I beg to offer myself as a candidate for the position, feeling confident that I am qualified to fill it to your satisfaction.

I refer you by permission to Messrs. Summers & Co., with whom I have worked for a period of ten years. On account of a railroad accident I was obliged to retire from their employ, and during my enforced rest I have been traveling leisurely through the territory you desire covered, renewing old acquaintances and making new ones. This advantageous connection I can turn to your benefit, if engaged.

Awaiting your early reply, I am,

Yours respectfully,
Edward Simpson,
864 Market Street.

LETTER ORDERING GOODS.

Atlantic City, N. J.,
March 3, 1908.

Messrs. Brokaw & Stanley,
Philadelphia.

Dear Sirs: Having established a business as retail grocer, with excellent prospects of success, I desire to open an account with your house. I have a capital of one thousand dollars ($1,000) in cash, and am permitted to refer to my former employers, Messrs. Davis & Brady, Market Street, of your city.

Please forward me the inclosed order for goods at the lowest figures and upon the usual time accredited to those in my line.

Respectfully yours,
Stuart Newton.

ACKNOWLEDGMENT OF ORDER.

Philadelphia, Pa.,
March 6, 1908.

Mr. Stuart Newton,
Atlantic City, N. J.

Dear Sir: Following the instructions of your esteemed order of the 3d inst., we are pleased to inclose invoice of produce sent by United States express to-day, amounting to $——, which is subject to our usual discount of 5 per cent for cash.

Having interviewed your reference, we have no hesitation in opening the account desired, and quoting you our very best terms.

Believing that our produce will give entire satisfaction, and hoping for a continuance of your account, we are, sir,

Very truly yours,
Brokaw & Stanley.

COMPLAINT TO AN EXPRESS COMPANY ABOUT LOSS OF GOODS.

New Haven, Conn.,
December 2, 1908.

Adams Express Co.,
Hartford, Conn.

Dear Sirs: Word has been received that goods shipped by me to Hartford on the 10th ult. have not yet reached their destination. Kindly inquire into the matter, and let me know the result at your very earliest convenience.

Yours truly,
Brenton E. Hapgood.

LETTER INCLOSING A REMITTANCE.

Somerville, N. J.,
November 26, 1908.

Mr. Oscar Blake.

Dear Sir: Inclosed please find check for twenty-four dollars ($24), in payment of the interest on your note.

Respectfully yours,
Everett T. Fuller.

LETTER ACKNOWLEDGING REMITTANCE.

Syracuse, N. Y.,
November 28, 1908.

Mr. Everett T. Fuller.

Dear Sir: Your check for twenty-four dollars ($24), in payment of interest on my note, received and credited.

Yours truly,
Oscar Blake.

LETTER REQUESTING PAYMENT.

Lowell, Mass.,
September 25, 1908.

Mr. Reginald Carpenter.

Dear Sir: A heavy payment which I am obliged to make on the 10th prox. compels me to call your attention to my account, now some time past due. Please give this your special consideration.

Very respectfully yours,
Robert Ogilvie.

LETTER REQUESTING RENEWAL OF NOTE.

Camden, N. J.,
November 4, 1908.

Gentlemen:

My note for two thousand dollars ($2,000) falls due on the 19th inst., and I find that it will be impossible for me to meet it. I would, therefore, ask you to renew it for ninety days, with interest, at the end of which time I shall undoubtedly be in receipt of more than sufficient funds to pay it.

Your compliance with this request I shall deeply appreciate.

Very respectfully yours,
Walter Provost.

Messrs. Adrian & Schuyler,
Philadelphia.

LETTER OF RECOMMENDATION.

Chicago, Ill.,
May 16, 1909.

It gives me great pleasure to testify to Mr. Robert B. Treat's ability as a bookkeeper. He has been in my employ for more than four years, and, during that time, has manifested in a high degree all of the qualities of an honorable, upright, and painstaking clerk. He is an accurate accountant, an excellent penman, and a gentleman of correct habits.

John S. Thompson,
173 State Street.

A TELEGRAM.

The essential thing in writing a telegram is to make the message convey a clear, exact, and complete idea of what the sender means, in as few words as possible.

LETTERS OF FAMOUS PEOPLE

Abraham Lincoln's reply to a letter requesting information about the financial condition of one of his neighbors.

Springfield, Illinois,
September 17, 1858.

My dear Sirs:

Yours of the 10th inst. received. I am well acquainted with Mr. X., and know his circumstances. First of all, he has a wife and baby; together they ought to be worth $50,000. Secondly, he has an office in which there are a table worth $1.50 and three chairs worth, say, $1. Last of all, there is in one corner a large rat-hole which will bear looking into.

Respectfully,
A. Lincoln.

March 3, 1863.

To Mr. James T. Fields:

I was ashamed this morning to send the expressman to your door in quest of an old umbrella, not unlike that which accompanied and consoled the exiled King of France in his flight to England. Nevertheless I did send, for it is a lineal descendant of King Cotton, and is of that particularly audacious kind that never says "Lost." In the hands of a modern sensuous poet the handle would become pearl (daughter, not mother of), and the rest would be of a "tissue from the looms of Samarcand." Finally, it is the one I keep to loan to lecturers at the Lowell Institute and the like; and, tho' very dissipated, is worth reclaiming.

Accept my apology and believe me or not,
Yours truly,
Henry W. Longfellow.

Thomas Bailey Aldrich to Professor Edward S. Morse.

My dear Morse:

It was very pleasant to receive a letter from you the other day. Perhaps I should have found it pleasanter if I had been able to decipher it. I don't think I mastered anything beyond the date, which I knew, and the signature, at which I guessed.

There is a singular and perpetual charm in a letter of yours—it never grows old, and it never loses its novelty. One can say every morning, as one looks at it, "Here 's a letter of Morse's I have n't read yet. I think I shall take another shy at it to-day, and maybe I shall be able in the course of a few years to make out what he means by those t's that look like w's and those i's that have n't any eyebrows."

Other letters are read and thrown away and forgotten, but yours are kept forever—unread. One of them will last a reasonable man a lifetime.

Phillips Brooks to his niece.

233 Clarendon Street, Boston,
March 21, 1881.

My dear Gertie:

This is a picture of you and Toody and the little boy that gave you the measles. Toody is the one with the umbrella, and you are the one with your finger in your mouth. I am glad you have got done the measles. What are you going to have next? I should think you might take half of poor Tood's measles and help her through I thank you for writing me such a beautiful letter, and I hope you will come and see me the first time you go out.

Samuel Johnson's letter on friendship written to Mrs. Thrale.

Since you have written to me with the attention and tenderness of ancient times, your letters give me a great part of the pleasure which a life of solitude admits. You will never bestow any share of your good-will on one who deserves better. *Those who have loved longest love best.* A sudden blaze of affection may by a single blast of coldness be extinguished; but that fondness which length of time has connected with many circumstances and occasions, though it may for a while be depressed by disgust or resentment, with or without a cause, is hourly revived by accidental recollection. To those who have been much together, everything heard and everything seen recalls some pleasure communicated or some benefit conferred, some petty quarrel or some slight endearment. Esteem of great powers, or amiable qualities newly discovered, may embroider a day or a week, but a friendship of twenty years is interwoven with the texture of life. A friend may be often found and lost but an *old friend* never can be found, and nature has provided that he cannot *easily* be lost.

29 De Vere Gardens, W.,
August 5, 1889.

My dear Tennyson:

To-morrow is your birthday—indeed a memorable one. Let me say I associate myself with the universal pride of our country in your glory, and in its hope that for many and many a year we may have your very self among us, secure that your poetry will be a wonder and delight to all those appointed to come after. And for my own part, let me further say, I have loved you dearly. May God bless you and yours!

At no moment from first to last of my acquaintance with your works, or friendship with yourself, have I had any other feeling, expressed or kept silent, than this which an opportunity allows me to utter—that I am and ever shall be, my dear Tennyson,

Admiringly and affectionately yours,
Robert Browning.

The Earl of Chesterfield to his son.

Dear Boy:

London, August 10, 1749.

Let us resume our reflections upon men, their characters, their manners; in a word, our reflections upon the World.

They may help you to form yourself and to know others. A knowledge very useful at all ages, very rare at yours; it seems as if it were nobody's business to communicate it to young men. . . . . .

There is a certain dignity of manners absolutely necessary, to make even the most valuable character either respected or respectable. Whoever is admitted or sought for, in company, upon any other account than that of his merit and manners, is never respected there, but only made use of.

. . . . . .

Abject flattery and indiscriminate assentation degrade as much as indiscriminate contradiction and noisy debate disgust. But a modest assertion of one's own opinion and a complaisant acquiescence in other people's, preserve dignity. . . . . Adieu.

Figures of Speech.—When, instead of literal terms, we employ imagery we are said to use figurative language. The forms of expression so used are called figures of speech, tropes, or images. The use of figurative language clothes the sentences in beauty and dignity; pleases us by exciting our imagination; enables us to make a larger use of our vocabulary; and aids us by a clearer and more forcible manner of expressing our thoughts. Figures should be used sparingly. A too frequent use of them palls upon the reader and causes a lack of appreciation of them.

The figures of speech most frequently used are arranged in three groups:—

Figures based on resemblance.	Simile. Metaphor. Personification. Apostrophe. Allegory.
Figures based on contrast.	Antithesis. Epigram. Irony.
Figures based on other relations.	Metonymy. Hyperbole. Climax. Interrogation. Exclamation. Vision.

Simile.—This is the comparison of two things when *like, as,* or a similar word is employed. Not all comparisons, however, are similes. To say "The lion is as strong as the tiger" is not to use a simile, though there is comparison and *as* is used. It is important to note that a simile expresses a likeness of one point between things that are unlike in every other point. The following are good examples of simile:—

"A fatal habit settles upon one like a vampire and sucks his blood."

How far that little candle throws its beams!
So shines a good deed in a naughty world.
—*Shakespeare, Merchant of Venice.*

Her hair drooped round her pallid cheek,
Like seaweed on a clam. —*Holmes.*

Metaphor.—When we say that one thing is another by way of comparison we call the figure a metaphor. As in the case of the simile the contrasted things must not be too nearly alike.

"All the world 's a stage."
"Spare moments are the gold-dust of time."
"Thy liquid notes that close the eye of day."

When one object is compared to two or more in the same sentence there results a mixed metaphor, which is generally ludicrous or ridiculous in its effect. Care must also be taken that a metaphor be not combined with a literal statement in the same sentence. When we say "Her cheeks bloomed with roses and health" we combine the metaphor "roses" with the literal "health." But we might correctly say "roses of health."

Personification.—When inanimate objects are treated as though they were animate, and when the lower animals are endowed with human powers and attributes, they are personified.

"The morning stars sang together."
"The angry sea."
"The wind howled."
"All day the sea-waves sobbed with sorrow."

Apostrophe.—When we address an inanimate object, or an absent or dead person, the figure is called apostrophe.

"My country, 't is of thee."
"Thou, too, sail on, O ship of state."
"O Death, wnere is thy sting?"

Allegory.—In some respects an allegory is a continuous metaphor. It is essential, however, that the subject be kept in the background in an allegory and not given the prominence which is required in a metaphor. Among the most famous allegories are: Bunyan's "Pilgrim's Progress"; Spenser's "Faerie Queene"; Swift's "Tale of a Tub"; and Addison's "Vision of Mirza."

Allegorical representation is very common in painting and in sculpture. Many famous large mural decorations are of allegorical subjects; among the most celebrated are the many fine examples found on the walls of the Library of Congress and in the Boston Public Library.

Parable.—A short account of a happening, either real or imaginary, intended to enforce or to teach a moral principle, is a parable. This was Christ's favorite method of teaching.

Fable.—Useful lessons taught by stories in which animals and inanimate objects are introduced as persons are called fables. This was a favorite method with classical writers, such as Æsop; and with modern writers, such as Fenelon and Gay.

Antithesis.—A forcible statement of unlikeness in which the contrast is conveyed by balanced sentences is called antithesis. It is important that the same structure of sentence be maintained and that the same parts of speech be used in the contrasting parts of the sentence.

"Deeds show what we are; words, what we would be."
"Silence is as deep as Eternity; speech is as shallow as Time."
"Fools rush in where angels fear to tread."

Epigram.—This is a condensed, pointed saying which apparently contradicts in one part of the sentence or by one word what has been said in another.

"The child is father of the man."
"When you have nothing to say, say it."

Irony.—A statement made in such a way that its very absurdity will show that the opposite meaning is intended is the figure known as irony.

Metonymy.—When the name of an object is put for another in cases where the two objects are so closely related that the one name suggests the other it is called metonymy. This is a common figure in daily speech. We say "The kettle boils" when we mean that the water in the kettle boils. The use of "hands" for men; "head" for cattle; "gray hairs" for age; "rum" for intemperance, are all familiar cases of metonymy.

Hyperbole.—This is the figure of exaggeration, not for the purpose of deceiving, but, usually, to attain force or emphasis.

"The waves are mountains high."

The modern popular use of superlatives in daily intercourse illustrates the common use of hyperbole.

Climax.—The climax is a series of statements

of which each succeeding one surpasses or eclipses the preceding one. It is necessary that the rising order be strictly observed or an anti-climax will result. Never let a weaker or less important statement follow a stronger one.

Here I stand for impeachment or trial! I dare accusation! I defy the honorable gentleman! I defy the government! I defy their whole phalanx!
—*Grattan.*

The following is an example of anticlimax:—

"The arm of the Lord is as fixed as fate, as sure as eternity, as strong as the rock of Gibraltar."

Interrogation and Exclamation.—In these figures strength or force is derived by putting a statement in the form of a question to which no answer is expected or in the exclamatory form.

Am I my brother's keeper?
Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery?
—*Patrick Henry.*

Oh what a tangled web we weave
When first we practise to deceive!
—*Scott.*

But oh, for the touch of a vanished hand,
And the sound of a voice that is still!
—*Tennyson.*

Vision.—This figure represents a past scene or event as one now passing before the eyes of the audience or the reader.

I see before me the gladiator lie;
He leans upon his hand—his manly brow
Consents to death, but conquers agony,
And his drooped head sinks gradually low.
—*Byron.*

Synecdoche.—A figure in which a part is used to represent the whole, as when "fifty sail" is used for fifty ships; or the whole is used for the part, as "The whole world knows his worth"; or the species for the genus, as the use of "cut-throat" for assassin; or the genus for the species, as "being" for man; or using the word for the material from which a thing is made instead of the name of the thing itself, as "board" for table; or that which contains for the thing contained, as "bottle" for wine, etc.

Litotes.—A moderation, modification, or softening of a statement in order to avoid censure or to increase the effect.

"I am a citizen of no mean city."

In such cases a statement is made by denying the opposite.

Parallel.—A lengthy or continued comparison of two objects, whereby the likenesses and differences are noted. Sometimes it takes the form of an expanded or extended antithesis.

Allusion.—The use of a well-known fact or event in history for explanation, description, or illustration.

Onomatopoeia.—The use of words which cause the sound to correspond to the sense. Poe's poem, *The Bells*, and Southey's description of how the waters come down at Lodore are marked examples. Many words like *rattle, crackle, boom, rumble, roll, roar, swish,* and *hiss,* are onomatopoetic words.

Structure of Sentences.—Sentences from a grammatical standpoint are classified as simple, complex, or compound.

A simple sentence contains one predicate, either simple or compound.

A compound sentence is composed of two or more principal clauses.

A complex sentence contains one principal clause and one or more subordinate clauses.

A declarative sentence is a statement.

An interrogative sentence is a question.

An imperative sentence is a command or request.

An exclamatory sentence expresses strong feeling.

A periodic sentence or a period holds the attention until the close; or it is a sentence in which the full meaning of the speaker is not made clear until the last word is spoken.

A loose sentence may be brought to a close in one or several places, and in each case make complete sense.

A balanced sentence is composed of two members of similar form. It is much used in contrast, comparison, or antithesis.

Harmony.—The harmony of a sentence is often destroyed by the repetition of the same word or of the same sounds. This fault is known as a lack of euphony.

"The principal *ordered* the teachers to *order* the pupils to preserve good *order.*"

The same effect is produced by the repetition of the same syllabic sounds.

"The elephant was dra*wn in an e*normous car."

Tautology.—The needless repetition of the idea in other words is known as tautology. "To return back," "To still continue," "to rearrange again," are familiar instances.

Redundancy.—The addition of statements, descriptions, or words not really essential to clear expression and tending to overload the sentence, is the fault known as redundancy.

"Collect *together* all of the books." As collect signifies to gather or to bring together, the idea is repeated by the unnecessary use of together.

Pleonasm.—The use of more words than are necessary to express the idea is pleonasm, which is a form of redundancy. It is sometimes permissible. "I saw it *with my own eyes.*"

Verbosity.—The expression of the idea by many words, however grammatical or euphonious the choice may be, is the fault called verbosity.

"He regrets that the multiplicity of his engagements precludes the possibility of taking advantage of your polite invitation."

This fault is sometimes known as that of *prolixity, circumlocution,* or *periphrasis.*

The prescribed method of correcting these faults is to strike out unnecessary words, retaining only those which are needed to give clear expression of the thought and euphonious statement of the idea.

Solecism.—A violation of the rules and principles of grammar is known as a solecism. An author who uses the wrong word to express his meaning is guilty of an *impropriety,* not of a solecism. The most frequent lapses are caused by: the misuse of tenses of verbs, as done for did; confusion of lie and lay, sit and set, farther and further; mistaken use of adverbs for adjectives; confusion of shall and will, and of should and would.

Barbarism.—A violation of the pure idioms of a language or an offense against purity of style or language is a barbarism. The word originated among the Greeks, who thus resented the introduction of a foreign word into Greek writing or discourse.

Poetry.—Poetry has been defined by Edmund Clarence Stedman as follows:—

"Poetry is rhythmical, imaginative language expressing the invention, taste, thought, passion, and insight of the human soul."

The important classes of poetry are the epic, the lyric, and the dramatic.

Epic Poetry.—An epic poem deals with the past, is consequently dependent upon memory and imagination; is narrative in character; treats usually of the life and heroic adventures of some great person; is simple in construction and generally excites deep interest. The longer and more celebrated epics are Homer's "Iliad," Homer's "Odyssey"; Vergil's "Æneid"; the Anglo-Saxon "Beowulf"; and Milton's "Paradise Lost."

Lyric Poetry.—Lyric poetry has more to do with the emotions and feelings than with events. In lyric poetry the power and personality of the poet is of far greater importance than are the subjects of which he treats. In this class are included hymns, odes, patriotic songs, love songs, nature poems, and the sonnet. Burns is probably the greatest lyric master in the English language.

The sonnet is limited in length to 14 lines and in subject to only one thought. This form originated in Italy. It was first used in England by Wyatt and Surrey. A sonnet is divided into two parts—the first eight lines called the *octave*, in which the subject is introduced and elaborated; and the last six lines, called the *sestet*, in which the subject is summed up or the conclusion drawn. The rhyming of the lines in a sonnet is very variable and much freedom is allowed. The sonnets of Shakespeare, of Milton, and of Wordsworth are most celebrated and many of them are familiar.

Dramatic Poetry.—The forms through which the English drama passed in its development are: Passion plays and Saint plays; Miracle plays; Moralities; Interludes; Comedies, and Tragedies.

Passion plays originated in Europe in the second century and were paraphrases of Biblical events. These were presented in churches with the priests as actors. In the fifth century they were strengthened by the addition of tableaux, dialogue, and very simple scenery. Plays with such characters as Daniel, Lazarus, and St. Nicholas as heroes were common in England in the twelfth century.

Miracle plays were presented in the public squares and places of cities, in the fourteenth century. They consisted of cycles which often covered from 25 to 42 important events of Biblical history. Coventry, Chester, York, and others were noted for the miracle play cycles in those days. Oberammergau in Germany is still noted for its passion plays, which vividly portray the chief events in Christ's life, and these are given by a simple village people with inadequate equipment, yet in such manner as to attract the attention of the whole world.

Moralities were plays in which the several vices and virtues were personified and allegorical representations were used in an attempt to correct abuses which had gradually crept into the miracle plays to the great scandal of the church.

Interludes were short plays given between the acts of more important plays in order to engage the attention and interest of the audience during, otherwise, long waits for dressing and stage carpentry.

Comedy was first known in England in "Ralph Roister Doister" by Nicholas Udall in 1551.

Tragedy was first presented in "Gorboduc, or Ferrex and Porrex," by Norton and Sackville.

Mixed Forms.—It is possible for one poem to combine epic, lyric, and dramatic characteristics.

A legend is a more or less mythical elaboration of some story founded upon tradition or fact. Layamon's "Brut"; Chaucer's "Canterbury Tales"; Longfellow's "Golden Legend," "Hiawatha," "Evangeline," and "King Robert of Sicily" are noted examples of this form.

An allegory, such as Spenser's "Faerie Queene," and shorter forms, as Leigh Hunt's "Abou Ben Adhem," is not only metaphorical in treatment but didactic in purpose.

The Ballad or folk-song is in some respects a combination of both epic and lyric characteristics. Old English history is a prolific field and has given to us such vigorous, dashing, and charming examples as "Chevy Chase," "Robin Hood," and "Bonny Barbara Allan."

Versification.—A verse is not to be confounded with a stanza. A verse is a line of poetry, or a combination of feet, and we speak of blank verse and of rhymed verse. A stanza is a group of verses and consists usually of either four or eight lines.

Meter is the division of a verse or line into feet. The kinds of feet most commonly used in poetry are:—

Trochee, consisting of one accented and one unaccented syllable, as bright'est, and is marked thus: — ⏑

Iambus, consisting of one unaccented and one accented syllable, as distress', and is marked thus: ⏑ —

Anapest, consisting of two unaccented and one accented syllable, and is marked thus: ⏑ ⏑ —

Dactyl, consisting of one accented and two unaccented syllables, and is marked thus: — ⏑ ⏑

Spondee, consisting of two accented syllables, and is marked thus: — —

Scansion.—This is the measuring of lines, dividing them into feet, and marking any pauses in the lines. In it we tell the kind of feet and the number of feet to a line.

One foot to the line is monometer verse.
Two feet to the line is dimeter verse.
Three feet to the line is trimeter verse.
Four feet to the line is tetrameter verse.
Five feet to the line is pentameter verse.
Six feet to the line is hexameter verse.
Seven feet to the line is heptameter verse.

In scanning a line we proceed thus:—

⏑ — ⏑ ⏑ — ⏑ — ⏑ —
The cur | few tolls | the knell | of part | ing day.

The unaccented and the accented syllables are marked and it is seen that the verse consists of five iambi. Therefore the verse is said to be iambic pentameter.

— ⏑ — ⏑ — ⏑ — ⏑
Tell me | not in | mournful | numbers

is a trochaic tetrameter for it consists of four trochaic feet.

˘ ¯ ˘ ¯ ˘ ¯
The Assyr | ian came down | like a wolf | on
˘ ¯
the fold. |

This is anapestic tetrameter verse for it consists of four anapestic feet.

Lines which lack a syllable at the end, or which terminate in an incomplete or imperfect foot, form what is known as catalectic verse.

¯ ˘ ¯ ˘ ¯ ˘ ¯ ˘
It was | eve, at | anchor | riding,
¯ ˘ ¯ ˘ ¯ ˘ ¯
Stately | ships were | lulled to | rest.

The first line is trochaic tetrameter for it contains four trochees; the next line is trochaic tetrameter catalectic for it contains four trochees, the last of which is catalectic.

Caesura is a break or pause which occurs usually in the middle of a foot.

"This is the forest primeval. || The murmuring pines and the hemlocks."

There is a caesural pause after primeval. There are sometimes two such pauses in a long line.

Rhyme.—This correspondence between the sounds of words, in order to be perfect, must conform to the following rules:—

(1) The vowel sounds in the words must be the same.

Sing rhymes with ring, but not with pleasing.

(2) The consonants following the vowel must have the same sound.

(3) The consonants before the vowel should have different sounds.

(4) The accents should fall on corresponding syllables in the rhymed words.

Poetic license is a term given to a certain freedom and liberty accorded to poets in the use of meter and rhyme. In some cases a much better expression may be secured by slight variations in rhyme and meter, so perfection in these qualities is not always demanded.

Alliteration or head rhyme, as the Anglo-Saxons called the frequent recurrence of the same letter in line, was the mark of Old English rhyme. We now use the end rhyme. A moderate use of alliteration is permitted in verse. "Lightly down leaping he loosened his helmet" is a line from an Old English poem where the rhyme is secured by the oft-repeated letter "l." Among modern poets Swinburne is, perhaps, most noted for alliterative rhyming. Shelley speaks of "the beaded bubbles winking at the brim"; and Roberts of "the grackles bickering in the alder boughs."

Blank Verse.—Poetry in which the lines do not end in rhymes. It is most common in long and serious poems. The writer is not hampered in the expression of thought by a search for rhymes.

Distich or Couplet.—A verse of two lines making complete sense. Distich is also applied to an epigram of two verses.

Triplet.—Three verses or poetic lines rhyming together.

Quatrain.—A stanza of four lines rhyming alternately. The Omarian quatrain in which Fitzgerald wrote his Omar rhymes in the first, second, and fourth lines.

Rhyme-royal.—A stanza of seven ten-syllabled lines of which the first and third, the second, fourth, and fifth, and the sixth and seventh rhyme. The stanza was introduced by Chaucer.

Spenserian Stanza.—A stanza of eight iambic pentameter lines followed by an iambic hexameter. It was introduced by Edmund Spenser and has been much used by Byron and other modern poets.

Heroic Verse.—The verse in which epic or heroic poems are usually written; in English, Italian, and German it is the iambic pentameter; in French, the iambic hexameter. In Vergil's Æneid, and in Homer's works, it is the hexameter line.

Alexandrine.—A verse composed of twelve syllables; sometimes applied to the last line of a Spenserian stanza.

Vers de Société.—Sometimes called society verse. It is the lightest kind of lyrical poetry, designed for the entertainment of polite society.

Villanelle.—A form of French verse written in nineteen lines and two rhymes, arranged in five triplets and a concluding quatrain. The first and third lines of the first stanza are repeated alternately as the last line of the following triplets and also form a couplet at the close of the quatrain.

Ode.—A lyric poem suitable to be set to music; it possesses marked nobility of sentiment and dignity of style.

Strophe.—That part of a Greek chorus or dance when the chorus turns from the right to the left of the orchestra. In modern verse it is also sometimes applied to a stanza.

Antistrophe.—The return of the chorus after the strophe. When the chorus moved around the altar, the strophe was sung while moving from east to west; the antistrophe, from west to east; and the epode, or last part of the song, while all stood before the altar.

Epode.—An after song; that part of a lyric poem which follows the strophe and antistrophe. Archilocus invented a lyric poem in which a longer verse is followed by a shorter; such are the Epodes of Horace.

Meter.—The meter of hymns and psalms is sometimes designated by such terms as long meter (L. M.), short meter (S. M.).

The Long Meter, or **L. M.**, is formed of four-line stanzas of tetrameter verse.

Though long the weary way we tread,
And sorrow crown each lingering year,
No paths we shun, no darkness dread,
Our hearts still whispering, Thou art near.

The Common Meter, or **C. M.**, is formed of four-line stanzas, the first and third lines of tetrameter (four-syllabled) verse, and the second and fourth of trimeter (three-syllabled) verse.

No mortal can with him compare
Among the sons of men.

The Short Meter, or **S. M.**, is formed of four-line stanzas, the first, second, and fourth lines of trimeter (three-syllabled) verse, and the third line of tetrameter (four-syllabled) verse.

Stand up and bless the Lord,
Ye people of his choice.

The Hallelujah Meter, or **H. M.**, is formed of eight-line stanzas, of which the first four are of tetrameter (four-syllabled) verse, and the last four are of trimeter (three-syllabled) verse, though sometimes these last four are written as two lines of hexameter (six-syllabled) verse.

WORDS OFTEN INCORRECTLY USED.

A.—Do not fail to repeat the article before a word if the sense requires it: He bought a black and white horse (one horse). He bought a black and a white horse (two horses).

Use *a* before a word beginning with a consonant or an aspirated "h"; *an* before a word beginning with a vowel or a silent "h."

Above.—Good writers do not say "the *above* statement"; *foregoing* or *preceding* is preferred. *Above mentioned* and *above referred to* do not sound as well as the simpler *already* does.

Accept of.—The *of* is unnecessary; we do not accept *of* gifts; we simply accept them.

Accompany.—In speaking of things, remember that one thing is accompanied *with* another; of persons, one person is accompanied *by* another. "The rain is accompanied *with* wind." "The governor was accompanied *by* his secretary."

Accord.—Not to be used for grant or give. *Accord* is a formal word and it involves great condescension on the part of the one who bestows.

Ad.—Not a correct abbreviation for advertisement and not sanctioned by good authorities. In writing, *advt.* is the proper form. The reason why *ad.* is so commonly used is because it is so difficult to pronounce *advt.*

Adjective.—It surprises some to learn that the best usage sometimes permits the use of an adjective where an adverb might be expected: Drink *deep;* he looked *bad;* stand *erect;* that seems *strange; wide* open; *red* hot; *pale* blue.

Adopt.—Often wrongly used for decided upon. Congress *adopts* a set of rules or a resolution which some one has prepared beforehand. But when several courses of action are presented and fully discussed, it is better to say that such a measure or course was *decided upon.*

Administer.—Medicine, oaths, affairs, and governments are *administered;* blows are *dealt.*

Advent.—Not to be used instead of arrive or arrival. Reserve the use of *advent* for sacred, stately, or ceremonial occurrences.

Affect.—Means to influence in some way; *effect* means to bring about, to accomplish: "This will not *affect* me in any degree." "He failed to *effect* the reforms for which he labored so hard."

Agriculturist.—This form is to be preferred to *agriculturalist.*

Ain't.—Never use this incorrect form of I'm not. It is less an abbreviated form of have not, for which it is sometimes used. Say *am not, are not, is not,* and *have not.*

Alike.—This word does not need *both* and *just* which so often accompany it. "Both alike" or "both just alike" are not to be used; say "They were dressed alike."

All of.—The *of* is not necessary. "I have them *all*" is better than "I have *all of* them" and "Take it *all*" than "Take *all of* it."

All of them.—Instead of "All of them left at nine" say "They all left at nine."

All over.—Transpose these words to "over all" and the effect is better. "Fires are raging *over all* the country" is a much better form.

Allege.—*Say* is much to be preferred to *allege* in the sense in which it is so commonly misused. If there is no sense of criminality or freeing from blame in the statement, do not use *allege.*

Allow.—Commonly misused for admit, think, or to be of the opinion. "He *allowed* that the price was a reasonable one" should be "He *admitted* that," etc.

All the same.—This is not so good as *nevertheless,* or *still,* for which it is sometimes used.

Almost, nearly.—Use *almost* when a thing has been going on for some time and is nearing completion; use *nearly* in speaking of something that has not been begun or did not happen. A man who has been severely injured might be *almost* killed; while one who fled unharmed from the danger might have been *nearly* killed.

Alone.—Not to be used instead of only. To do something *alone* is to do it unaided; to be the *only* one to do signifies that there were none others who did it. "I did it *alone*" means that I had no help or was unaccompanied. "I was the only one who did it" means that others did not do it.

Alternative.—Do not use *alternative* when *course* is meant. It is absurd to speak of "the only possible *alternative,*" because alternative means that a choice between two courses is open to one.

Always.—Watch this word to see if its use is really necessary. "Whenever I go to New York, I *always* go to see him" is no stronger with, than without, the word.

Among one another.—Say "*with* one another" or "*among* themselves."

And.—Not to be used instead of *to.* "Try *and* come," should be "Try *to* come." "Go *and* see him" should be "Go *to* see him."

Not to be used for *or.* "A language like the Greek *and* Latin;" there is no Greek and Latin language.

And which.—*Which* in this case is unnecessary, the *and* alone will do all that is needed.

Anniversary.—This word is applied only to yearly celebrations, as birthdays or wedding anniversaries. We do not speak of centennial *anniversaries;* we call them centennial *celebrations.*

Antecedents.—Not to be used for past history or reputation. Avoid such an expression as "His *antecedents* are bad."

Anticipate.—Not to be used in the sense of hope, or expect.

Any.—Not to be used as in the sentence "I did not sleep *any* last night."

Anyhow, anyway.—Not to be used in place of "At any rate," "In any event," "Be that as it may."

Any place.—Avoid the use of such forms as: "He wants to go *some place,*" "He will not go *any place.*" Use *somewhere* and *anywhere* instead.

Anyway and **anywhere.**—Never spell these with the unnecessarily added "s."

Apparent.—Not to be used for evident, obvious, or plain. "The truth of that is *apparent*" should be "The truth of that is *obvious.*"

Apt, likely.—*Apt* means endowed with some special fitness or ability; *likely* means probably. "He is *apt* to come at any time" is wrong, for it requires no mental fitness to come. Say "He is *likely*" or, better, "It is *likely* that he may come at any time."

Around, round.—Use *around* when rest is signified; *round* when motion is expressed. "The grocer is just *around* the corner." "The

boy ran *round* the corner." "He sailed *round* the world." "The bandage was tied *around* his finger."

As—as, so—as.—Use *as—as* for positive or affirmative comparison; *so—as* for negative comparison: "John is *as* tall *as* James;" "George is not *so* tall *as* Mary."

As I take it.—Better say "As I understand it," "As I see it," or "As it seems to me."

Ascend.—Do not use *up* with this word. "He ascended *up* to the top" should be "He ascended to the top."

At.—Instead of "Where have you been *at?*" say simply "Where have you been?"

At all.—This expression is usually unnecessary as it does not add to the strength of a sentence. "It does not rain *at all*" is no better than "It does not rain."

At best.—Say "at *the* best."

At that.—Avoid the use of this expression.

Audience.—Do not use when you mean spectator. An *audience* listens; *spectators* see what occurs.

Awful, awfully.—That only is awful which inspires awe. Do not use these words in any other sense. They are among the words most frequently used in an incorrect way.

Back.—Often wrongly used for *ago*. Do not say "three weeks *back*" or "a week *back*." Say *ago*.

Bad.—Do not say *bad* accident for *serious* accident; or a *bad* pain for a *severe* pain.

Bad grammar.—Some claim that this expression is false syntax; that if it is grammar it cannot be bad. But the Standard Dictionary quotes it as an allowable expression.

Badly.—Not to be used for greatly, exceedingly, or very much. "That rug needs to be beaten *badly*" is an amusing blunder. "I wanted that *badly*" is an expression to be avoided.

Balance.—Do not say "the *balance* of the day was spent at golf"; say "the *remainder* of the day." Leave balance to the bookkeeper or to the accountant, who regards a sum necessary to balance an account as the *balance*.

Beastly.—This term, so commonly used as expressive of disappointment, disgust, or contempt, should not find a place in your vocabulary.

Beautiful.—Not to be used where *nice* is meant. "*Beautiful* bread" should be "*nice* bread."

Because why.—Do not join these words. Either alone may be made to do the work you require of it.

Been to.—Do not say "I have been *to* New York" for "I have been *at* (or *in*) New York." You cannot *be to* a place.

Beginners.—Never say "a new beginner," nor "a new beginning." The *new* is unnecessary.

Behind.—Often unnecessarily used with left. "I left him *behind* in St. Louis" should be "I left him in St. Louis."

Between.—This is a preposition and requires the objective case after it. Never say: "Between you and *I*," because *I* is the nominative. Say "Between you and *me*."

Blame on.—Say "blame *for*" or "lay the blame *upon*"; but do not "blame anything *on* any one."

Both alike.—Leave out *both*.

Both of them.—Instead of "Both of them are here" say "They are both here."

Bound.—A very common incorrect form of speech, as "I am *bound* to go." One is bound only when some obligation or constraining or compelling force binds one. Say "*determined* to go" or "*resolved* to go."

Bran-new.—The word is *brand-new*.

Bred and born.—Transpose these and say "born and bred."

But.—Often incorrectly used for *than* after *other*. Instead of "It is none other *but*" say "It is none other *than*."

But what.—Do not use when you mean *but that*. "I do not know *but what* I shall" is better written "I think I may." "I know nothing *but what* you told me" is correct.

Calculate.—Be sure that some mathematical process is concerned when you use this word. Do not "*calculate* that it will rain" unless you have arrived at the conclusion by a meteorological calculation.

Call.—Not to be used for occasion. "He had no *call* to be angry with me" should be "He had no *occasion* to be angry with me."

Cherubim.—Remember that *cherubim* is the Hebrew plural form of cherub. Then you will never speak of "*a* cherubim."

Choose.—Do not say "Because I don't *choose* to." Say, rather, "Because I would rather not" or "Because I don't care to do so" (or whatever verb is required).

Clothes.—Do not say that your clothes have grown too small for you, when it is you who have grown too large for your clothes.

Combine.—Do not use together with this word. "Combine *together*" is unnecessary repetition.

Complected.—Better use *complexioned*.

Couple.—When you use this word be sure that the two objects are really united by some bond or tie. Do not use it when you mean two.

Credible.—This word, which means worthy of belief, is not to be confounded with *creditable*, which means redounding to one's credit.

Crush out.—The *out* is usually unnecessary in this expression, for crush means to force out of shape. We "*crush* a rebellion."

Dangerous.—Do not use *dangerous* for in danger or dangerously, as "He is ill, but not *dangerous*." His life may be in danger, but he is far from being *dangerous*.

Deceive.—One does not deceive another unless he actually produces a false impression. It is absurd to say "He is deceiving me," because if he is deceiving you, you do not know it; if you do know it, he is not deceiving you. "He is trying to deceive me," or "He thinks he is deceiving me," is what is meant.

Demean.—Often wrongly used for bemean. Demean is to behave one's self; bemean is to disgrace one's self.

Depreciate.—Instead of "The property has *depreciated in value*" say "The property has *depreciated*." Depreciate means to fall in value.

Die.—Put such expressions as "I thought I should *die*" and "I nearly *died* laughing at him" out of your vocabulary.

Different.—Followed by *from*, never by *than*.

Differ from and **with.**—One thing differs *from* another in appearance, size, etc.; one person differs *with* another in opinion.

Direct.—Do not use this word for address. You do not *direct* a letter; you *address* it when

you write an address upon the envelope. You do, however, *direct* a person how to reach a place.

Disappointed.—Never be "*agreeably disappointed*," rather be "*agreeably surprised.*"

Discommode.—Often used for incommode. "I fear I shall *discommode* you" should be "I fear I shall *incommode* you."

Disremember.—Say *forget.*

Done.—See that there is some other verb such as have, had, is, or was, with *done* when you use it. "You *done* it" should be "You *did* it."

Don't.—This is a contraction for do not but not for does not. Use *does n't* in the latter case. Such forms are permissible in conversation, but in writing the full form should be used.

Don't think, don't believe.—Instead of "I don't think it will rain" say "I think it will not rain."

Doubt but that.—Leave *but* out and say "I do not doubt that such is the case."

Drunk.—Drunk is the past participle; drank is the past tense. "They *drank* his health," "His health was *drunk.*"

Dutch.—Do not say *Dutch* when you mean German. *Dutch* pertains to Holland.

Each.—Always takes a verb in the singular. "Each *comes* in *his* turn and *receives* the amount due for *his* work."

Each other.—See that only two are concerned when this expression is used. If more than two are concerned use *one another.*

Eat.—Do not use this form for eaten. Instead of "The candy is all *eat* up" say "The candy is all *eaten.*"

Either.—Not to be used when you mean each. "On *either* side of the street" should be "On *each* side of the street," when both sides are meant. "On *either* side" is right when only one side is meant and when it does not matter which side.

Elder, Older.—Use *elder* and *eldest* in speaking of persons and usually of members of the same family, as the "*elder* brother"; *older* and *oldest* are applied to both persons and things.

Elegant.—Not to be used in such expressions as "*elegant* time," "an *elegant* view."

Else.—Be sure to follow *else* with *than*, not with *but.* Say "It was no one *else than* John."

Else.—Not necessary in the sentence "Nobody *else* but me." Say "Nobody but me."

Else.—By custom when *else* joined to anybody, somebody, any one, or some one, forms a possessive the *'s* is added to else, as *somebody else's.* But there are many who prefer to write *somebody's else, some one's else.*

Endorse, indorse.—Do not say "*endorse* upon the back of" for *endorse* means to write upon the back of. *Indorse* is the spelling generally preferred in business.

Enjoy.—No one really *enjoys* poor health.

Enough.—Instead of "A large enough room" say "A room large enough."

Equally.—Not necessary in the expression, "It is *equally* of the same value." Say "It is of the same value" or "They are of equal value."

Equally as well.—The *as* is not necessary, so write "*equally well.*"

Equanimity.—Do not say "*equanimity* of mind." It is useless repetition.

Ever.—Not to be used with the phrase "As soon as"; this of itself is sufficient.

Every.—Be careful to see that a verb of the singular number follows. "*Every* passenger *was* injured."

Every confidence.—Better say "*implicit* confidence." *Every* refers to a number of things, which confidence is not.

Every now and then.—Better use "occasionally."

Except.—Not to be used for unless, as "*Except* I am delayed." Say "*Unless* I am delayed."

Excessively.—Use very or exceedingly rather than *excessively.* "It is *exceedingly* cold" is better than "It is *excessively* cold."

Executed.—Do not use *executed* for put to death. Sentences are *executed;* criminals are *put to death.*

Expect.—Do not say "I *expect* it is" or "I *expect* it was." Use suppose, or think, or believe, or suspect. *Expect* refers only to the future.

Experience.—It is better to say "I *feel* great pleasure," not "I *experience* great pleasure."

Farther, further. Farther is the comparative of far and measures distance, as "How much *farther* have we to go?" Further measures quantity or degree, as "You should say nothing *further* upon that subject."

Feel bad, feel badly.—One feels *bad* when one's health is not good; one feels *badly* when there is something wrong with one's sense of touch.

Few.—There is a difference between *few* and *a few.* "*Few* persons like him" means that he is generally disliked. "*A few* persons like him" means that there are some who do like him.

Few, little.—Few measures number; little measures quantity or size. "I have *fewer* (not *less*) books than you;" "We all have *less* money than we think we need."

Find.—Not to be used for provide or furnish. "I *find* him in clothes" should be "I *furnish* (or *provide*) him with clothes."

First.—Say "first two," "first five," instead of "two first," "five first." Only one can be first; the next is second.

First-rate.—Use this as an adjective; not as an adverb. "You did that *first-rate*" is not correct.

Fix.—Be sure that you intend to convey the idea of fastening firmly when you use *fix.* It is not the same as repair, remedy, arrange, or set up.

For.—This word is often added to a sentence when not needed. "He knows more than you think *for*" would read better without *for.*

For to.—Not to be used where *to* alone is sufficient. "I went *for to* see him" should be "I went *to* see him."

From.—Often used where of is required. "He died *from* consumption" should be "He died *of* consumption." It is, however, quite right to use "from the effects of."

-ful.—This termination often causes trouble in forming plurals. The plural of *teaspoonful* is *teaspoonfuls;* of *cupful, cupfuls.*

Froze.—Do not use *froze* for frozen. Instead of "The brook is all *froze* over" say "*frozen* over."

Funny.—Often used where strange, or queer, or unusual is meant. One should not say "That 's *funny*" when the element of fun is entirely lacking.

Gent.—This word should never be used. It is not tolerated in refined writing or speaking.

Going to, just going to.—Use *about to* instead. "I am *about to* go."

Got.—Strictly this word means having possession of a thing after an effort to secure it. It does not signify mere possession. Instead of "I have n't *got* a pencil" say "I have no pencil."

Gotten.—While many good writers employ this form, *got* is to be preferred. Instead of "When he had gotten over his illness" say "When he had recovered from his illness."

Graduate.—We can say either "He was graduated from the university" or "He graduated from the university." Formerly it was held that "was graduated" only was correct; now both forms are used.

Gratis.—Not necessary in such expressions as "Given away *gratis*." Gratis means without charge or cost; given away means that also.

Grow small.—One cannot grow and become small at the same time. Use decrease or diminish.

Guess.—Be careful that this word is not used for think. Do not say "I *guess* so" when you mean "I think so."

Had better, had rather.—These forms are used by some of our best writers, though *might* or *would better* and *would rather* are preferable.

Had have.—The form "had have" is incorrect, for there is no such form of the verb. In "If I *had have* known it, I should have gone," the *have* is unnecessary; leave it out. Sometimes in pronunciation the *have* sounds like of—"If I had of heard it," etc.

Had ought.—*Had*, or any other form of the verb to have, cannot correctly be used as an auxiliary with ought. Use should or ought not. "He should not have done it" or "He *ought* not to have done it."

Hain't.—There is no such contraction for "have not" or "has not." Its use is a vulgarism.

Handful.—The plural is *handfuls*, not *handsful*. We may, however, speak of one having "both hands full."

Hang.—This verb has two forms of the past participle, *hanged* and *hung*. *Hanged* is used in speaking of a person who has been put to death in that way. "He was *hanged* for it," not "He was *hung* for it."

Hard, Hardly.—*Hardly* means scarcely and is not to be used for the adverb *hard*. "He struck the drum *hard*" (not *hardly*).

Have.—This word often intrudes in an incorrect way. "I meant to *have* written to you" should be "I meant to write to you." "I intended to *have* gone" should be "I intended to go." "I should like to *have* gone" should be "I should have liked to go."

Hence, Thence, Whence.—As these words mean from here, from there, and from where, it is wrong to say *from hence*, *from thence*, or *from whence*.

How?—Not to be used for What? or for "What did you say?"

However.—The use of this form for *how* and *ever* combined is a common error, as "*However* did you manage it?" for "How did you possibly manage it?" Nor should the word be used in the sense of "at any rate," "under all circumstances." The word is properly an adverb.

I am thinking.—"I think" is preferable.

If I was him.—This should be "If I were he." The verb *to be* takes the same case after as before it, and the subjunctive form *were* is required because there is no possibility of your being he.

Immigrant and **Emigrant.**—These are often confounded in use. An immigrant is one who comes *into* a country; an emigrant goes *out* of a country. A German leaving Hamburg for New York is an emigrant from Germany and an immigrant to the United States when he reaches New York.

Imminent.—Do not say eminent when *imminent* is meant. "He is in *imminent* (not eminent) danger."

In.—Often used for into. Instead of "Put your knife *in* your pocket" say "Put your knife *into* your pocket."

In case.—It is better to say "If I go" rather than "In *case* I go."

In so far as.—The *in* is not necessary. "So far as I know" is the correct form.

In spite of.—It is better to use *despite* or *notwithstanding*.

In the street.—This form is preferred to *on the street*. "He lives *in* State Street" is better than "*on* State Street."

Index.—This word has two plural forms: *indexes* when parts of books are meant; *indices* with reference to exponents of numbers.

Is that so?—This and similar expressions of surprise imply some doubt or incredulity and are not complimentary to the person to whom they are addressed.

Kind of.—Do not use this phrase for "somewhat" or "rather." It is correctly used in "What kind of man is he?" but do not say "What kind of *a* man is he?" The term "kinder" for "kind of" is inelegant.

Lady.—This term is much abused. When distinguishing the sexes say "woman" and "man." The term "woman" is never uncomplimentary, as many persons think. The combination of "saleslady" is wrong for, clearly, the opposite of "salesman" is "saleswoman."

Last and **Latter.**—When comparing or referring to two use *latter* instead of *last*. Generally avoid the use of former and latter in writing if you can, for the eye or memory must go back to the terms previously referred to in order to see which one is meant. Say, also, "the last three," "the last four," and not "the three last."

Lay and **Lie.**—These verbs are frequently confounded. The confusion arises from the fact that lay is the present tense of the verb to lay, and is also the past tense of the verb to lie. Present, *lay*, to put down or to cause to lie down; imperfect, *laid;* past participle, *laid*. Present, *lie*, to rest; imperfect, *lay;* past participle, *lain*. *Lay* in the present tense requires an object after it. *Lay* in the past tense does not require an object after it. In the expression "Now I lay me down to sleep" we have a poetic form of "Now I lie down to sleep." Here the form of the verb is reflexive.

Least.—"Of two evils choose the *least*" is incorrect. Say instead, "Of two evils choose the *less*."

Leave.—This verb is often used where let is meant. "*Leave* me go," "*Leave* me alone," should be "*Let* me go" and "*Let* me alone."

Lengthways, Sideways, Endways.—Preferable forms are *lengthwise, sidewise,* and *endwise.*

Let you and I.—This should be "Let you and *me.*" Let requires the objective case after it.

Liable, Likely.—Liable means "having a tendency"; likely suggests "very probable." Do not, then, say "It is liable to storm" or "He is liable to come." Use "likely" in these sentences.

Lit.—Not to be used for lighted. Instead of "He *lit* the gas" say "He *lighted* the gas." Nor for alighted. Instead of "He *lit* on his feet" say "He *alighted* on his feet."

Little or nothing.—Instead of "They know *little or nothing* about it" say "They know *little, if anything,* about it."

Miss.—The plural is *Misses.* Instead of "the Miss Smiths" say "the Misses Smith."

Mistake.—Do not say "I took you for another person." Say "I mistook you for another person."

Mistaken.—The common form "If I am not mistaken" should be "If I mistake not." A person may be mistaken for another.

Mutually.—Not to be used with "each other." Instead of "They mutually hated each other" say "They hated each other."

Myself.—Only to be used when emphasis is required, as "I did it *myself,*" meaning that I was unaided or had no associates. Avoid its use in such sentences as "My son and *myself* were there."

Near.—Not to be used for nearly. "It was not *near* so hard as I expected" should be "It was not *nearly* so hard as I feared."

Never.—Do not use *never* for not. "I *never* did it" should be "I did not do it."

Nicely.—Not to be used for well or very well. "I am getting along *nicely* now" would be stronger if well or very well were used.

No.—Used wrongly for not in such sentences as "Whether I go or *no,*" "Whether he is there or *no.*" Use *not* in such cases.

Nothing like.—Instead of "It is *nothing like as* good as mine" say "It is *not nearly so* good as mine."

Noways.—Incorrectly used for nowise. Say "He was nowise to blame."

Numerous.—Avoid the expression "numerous friends" and say "many friends."

Of all.—Not necessary in such expressions as "the first of all," "the last of all." "The first" and "the last" are quite as expressive.

Off.—Often incorrectly used for from. Instead of "He jumped *off* the roof" say "He jumped *from* the roof." It is even worse when followed by of, as "He jumped *off of* the roof."

On.—Often incorrectly used for to. Instead of "The box fell *on* the floor" say "The box fell *to* the floor."

One.—When the pronoun "one" is used in a sentence, see that it is not changed to "he" or "they." Keep it all the way through. Do not say "One can do as he likes with his own," but "One can do as one likes with one's own."

One.—Not to be joined to "other" or "another." "The other one" and "another one" should be simply "the other" and "another."

One another.—Often used for "each other." "They loved *one another*" should be "They loved *each other.*" Though we hear "Little children, love one another."

Only.—Be careful to place this word as closely as possible to the word with which you intend it to go. If you say "I only wrote to him a week ago," you mean that you wrote and did nothing else; but "I wrote to him only a week ago" means that it is only a week since you wrote to him. "I wrote only to him a week ago" means that you did not write to any one else.

Opposite.—Should be followed by to in such sentences as "I live opposite to the hotel."

Other.—This word is frequently omitted when the sense demands its use. It finds a place in the sentence "James is more studious than any *other* boy in his class," because James is one of the boys in the class and he is not more studious than himself.

Ought.—Not to be used for aught. Instead of "For *ought* I know," write "For *aught* I know."

Over.—Should not be used for across. "I am going *over* the bridge" should be "I am going *across* the bridge," unless one means that one is going over the side of the bridge into the water.

Own up.—Not so good as confess or acknowledge.

Pair.—"A pair of new shoes," not "A new pair of shoes," for the shoes are new.

Pants.—This word should find no place in the vocabulary of any person of refinement. Say trousers.

Partake.—You cannot *partake* of food by yourself; it must be a share of that which is enjoyed by several. Eat is a much better word to use.

Party.—Not to be used for person. Do not say "I met a party on the train" unless you mean that you met a party of several persons. "A certain party" is also wrong when you mean some person whose name you do not care to mention.

Pellmell.—Never to be applied to one person, but only to a confused crowd. "He ran pellmell down the street" should be "He ran excitedly down the street."

Per.—Be careful to use this only with Latin words. It is quite right to say "per cent.," "per diem," "per capita," or "per annum"; but never "per day," "per week," or "per year." Say "so much *a* day." In signing for another write "by" not "per."

Perfect.—Avoid such expressions as "A perfect lady," or "A perfect gentleman." Nor does perfect admit of degrees of comparison. Do not say "most perfect."

Pled.—Not to be used for pleaded. Say "He *pleaded* for mercy," "He *pleaded* for his life," "He *pleaded* in his behalf."

Post.—Not to be used for inform. Do not say "I am not very well *posted.*"

Prejudice.—Never to be used in a good or favorable sense. You are not *prejudiced* in a person's favor; you are *prepossessed* in his favor. You are invariably prejudiced against him.

Presume.—Not to be used for think or believe. "I *presume* that is correct" should be "I *think* (or *believe*) that is correct."

Pretend.—Not to be used for profess or claim. Instead of "I *pretend* to know something about law" say "I *profess* to know something about law."

Preventative.—Wrongly used for preventive. Do not speak of a "*preventative* treatment of disease."

Promise.—Do not say "to promise faithfully." One may promise to do something faithfully; but one cannot promise faithfully to do it.

Propose.—Often incorrectly used for purpose. Instead of "I *propose* to go home to-morrow" say "I *purpose* to go home to-morrow."

Providing.—Not to be used for provided. Instead of "We shall go, *providing* the day is fine" say "——*provided* the day is fine."

Pure and Unadulterated.—An unnecessary repetition. That which is pure is, of course, unadulterated.

Quantity.—Wrongly used for number. Do not say "a great *quantity* of people" for "a great *number* of people" or "a great *many* people."

Quite.—Not to be used before a noun. Do not say "He is *quite* an orator."

Raise.—Not to be used for rear or bring up. Cattle are reared, or raised; children are brought up, or reared; potatoes are grown, or raised; one's rent is increased, not raised.

Real.—Not to be used for very. Avoid such expressions as "real sorry," "real well," "real glad."

Restore.—Do not say "Restore it *back* to me." Restore means to give back, and the sentence is as though one said "Give it back back to me."

Reverend.—In speaking of a clergyman always say "*The* Reverend Thomas Brown," not "Reverend Thomas Brown."

Saw.—Do not say "I *never saw* anything like this before." The proper form is "I *have never seen* anything like this." It is correct, however, to say "I never saw anything like that when I was there."

Says I.—Say "I said."

Seldom or ever.—Omit "or ever." It is not necessary. "I seldom see him" is correct.

Set, Sit.—The farmer *sets* a hen; but the hen *sits*. So we should speak of a *sitting* hen. We *sit* up late at night. We *sit* down on chairs. We *set* figures down in our books. We are able to *sit* up after an illness.

Shall have.—Do not say "I shall have pleasure in accepting your kind proposal." Say "I have much pleasure."

Shall, Will.—These forms of the future tense are very frequently interchanged and wrongly used. There are two futures: (1) The simple future, which denotes only the futurity of an event. In it we use *shall* in the first person and *will* in the second and third. *Simple Future.*—Singular: First person, I shall go; second person, Thou wilt go or You will go; third person, He will go. Plural: First person, We shall go; second person, Ye or you will go; third person, They will go. (2) The determinate future, which denotes an expression of the will or a determination that an event must occur in the future. In it we use *will* in the first person and *shall* in the second and third. *Determinate Future.*—Singular: First person, I will go; second person, Thou shalt go or You shall go; third person, He shall go. Plural: First person, We will go; second person, Ye or you shall go; third person, They shall go. If one remembers that the form *will* means a willingness or the performance of one's own free will, it will be seen that since one can will only for one's self and not for another, *will* must be used only in the first person of the determinate future. "I will go" denotes although there are many obstacles to prevent me, yet I have determined to go. "You shall go" denotes that although you object to going, I am going to see to it that you do go. The same is true of "He (or they) shall go." In the simple future "I shall go" denotes that my going is a matter of no determination or of overcoming any objections or obstacles, but is a natural happening in the future. "You will go," "He will go," "They will go" denote a perfect willingness upon the part of the respective agents and the absence of any force or compulsion to be exercised by the speaker. *Shall* is the proper form to be used in the first person when questions are asked. "Shall I come to-morrow?" is the correct form. "Will I come to-morrow?" means "Am I willing to come to-morrow?" and no one knows that so well as the speaker. In the second and third persons use *will* in the interrogative form. "Will you come to-morrow?" "Will they come to-morrow?" In the form "Shall he come to-morrow?" the speaker asks "Is it your determination that he must come to-morrow?" and, of course, there are occasions when that form might be used correctly.

Should, Would.—The form often seen in letter writing "I should be very glad if you would send me the papers" would be better "I shall be very glad if you will send me the papers."

Sick, Ill.—In England *sick* is restricted to a form of illness attended by nausea or vomiting. This distinction is not rigidly observed in the United States.

Slow.—Often used for slowly. Instead of "The boat is traveling *slow*," say *slowly*.

Smell of.—The *of* is unnecessary in such sentences as "I saw the dog smell of his master's coat."

Some.—Not to be used before numerals. Instead of "I met him *some* six years ago" say "I met him *about* six years ago."

Some.—Not to be used for somewhat. Do not say "He is some better to-day" for "He is rather (or slightly or somewhat) better to-day."

Somewhere.—Use this word in place of *somewheres* or *some place*.

Splendid.—Not to be used to express mere excellence. Avoid such expressions as "perfectly splendid," "a splendid time," and "a splendid story."

Standpoint.—Frequently used where point of view would be much better.

Stationary, Stationery.—*Stationary* means remaining in one place or in one position. *Stationery* is writing material of all kinds.

Statu Quo.—Not to be used for *status quo*. *In statu quo* is correct.

Stop.—Wrongly used for stay. Instead of "I am *stopping* with a friend" say "I am *staying* with a friend."

Stricken, Struck.—While *stricken* is used in cases where misfortune is expressed, as "He was *stricken* with apoplexy," we also find more freedom in its use in the United States than in England. It is not unusual in this country to hear a motion in Congress "that all after the first paragraph be *stricken* out."

Such.—Not to be used for so, as "I had never felt *such* a severe pain," which should be "I had never felt *so* severe a pain."

Surplus.—Do not say "A surplus over and above," for a surplus is over and above.

Suspicioned.—Not to be used for suspected.

Than me.—Frequently used for *than I*. Instead of "He is stronger *than me*" say "He is stronger *than I*."

That.—Not to be used for so. Instead of "He was *that* independent that he refused my offer" say "He was *so* independent."

That, Who.—(1) "I saw the expressman, *who* brought my trunk," means "I saw the expressman, *and he* brought my trunk." (2) "I saw the expressman *that* brought my trunk" points out a particular expressman, viz., the one that brought my trunk.

That 's him.—Should be "That 's *he*."

Them.—Do not use *them* for *those*. Instead of "Give me some of *them* pears," say "Give me some of *those* pears."

Then.—Not to be used in such expressions as "The then secretary," "The then cabinet." Say "The secretary at that time," "The cabinet of that time."

Thence.—Remember not to use from with this word. *Thence* means from that place. "He departed *thence* at noon."

There.—Do not use this word with that. "That there house" should be "that house." "That there" and "this here" are common errors to be avoided.

There 's.—Do not use this form for there are. "*There 's* twenty" should be "There are twenty."

These kind, Those sort.—Remember that "kind" and "sort" are singular nouns and require "this" and "that," not "these" and "those."

Think.—Say "I think not" instead of "I don't think so." Say what you do think, rather than what you do not think.

Think for.—*For* is unnecessary. "He hears more than you *think for*" should be "He hears more than you think he does."

Thinks I.—Say "I thought."

Through.—Inelegant in such expressions as "getting through" with a speech or with a meal.

To.—Avoid the use of this word for *at* after the verb to be in such expressions as "He was *to* home when I called," "He is not *to* home," "He was *to* school." Also in "I saw him *to* meeting Sunday." Use *at* in all such cases.

To let.—The proper form is "To be let." A landlord wishes *to let* his house; but the house is *to be let*.

To-morrow.—There has been much argument over the expressions "To-morrow *is* Tuesday" and "To-morrow *will be* Tuesday." Both forms are regarded as correct.

Try.—Not to be used in speaking of an experiment. We do not *try* an experiment; we *make* it.

Try and.—Instead of "Try *and* come," say "Try *to* come."

Unbeknown.—Not to be used for *unknown*.

Unique.—While we may say a thing is quite unique, we cannot say that it is very unique. Unique means "the only one of its kind."

Universally.—Not to be used in the sense of "generally." Instead of the expression "universally regretted" or "universally beloved" say "generally regretted" or "generally beloved."

Unmistakable.—Be careful not to lose sight of the fact that *un* means not. You will not, then, say "He spoke in *no* unmistakable terms," for "no unmistakable" means "mistakable."

Up.—Not necessary after the verb *to rise*. Instead of "He rose up from his chair," say "He rose from his chair."

Use.—There are many incorrect and inelegant forms of this verb. Avoid such as "I use to" for "I used to"; "Did n't you use to?" "You use n't to," and other uncouth expressions.

Various.—Often used for several. Instead of "Illinois is the greatest of the various states mentioned," say "of the several states mentioned."

Very.—Need not be used with such superlatives as best and worst. "The very best" is no better than "the best."

Vest.—Waistcoat is the better term.

Veterans.—Do not say "old veterans." A veteran is one who has been long in service. It is correct to say "aged veterans."

Vicinity.—Not to be used when "neighborhood" is intended.

Wa'n't.—Not to be used as a contraction for was not or were not.

Want, Need.—*Want* expresses both the desire for a thing and also the idea that the thing is lacking; *need* expresses the necessity of having a thing. A rich man may want a position which he does not really need.

Want of.—Instead of saying "What does he *want of* a boat?" say "For what purpose does he *want* a boat?" or, still better, "Why does he *need* a boat?"

Ways.—Often incorrectly used for way. Instead of "His house is a long *ways* from here," say "His house is a long *way* from here."

Well.—Not needed in such forms as "Well, I don't know." It also marks indecision and gives a bad impression.

What for.—Do not say "What did you do it for?" better, "Why did you do it?"

Whatsomever.—Never use this form for *whatsoever*. *Whatever* is better than either.

Where.—Often incorrectly followed by to. "Where did he go to?" should be "Where did he go?"

Who.—Many persons never use *whom* but always *who*. Instead of "Who are you speaking to?" say "To whom are you speaking?" Instead of "Who did you give it to?" say "To whom did you give it?"

Whole.—"The whole of" is not so good as "all." Do not say "The whole of the guests were present," say "All the guests were present."

Worse.—Not to be used when *more* is intended. You do not dislike one thing *worse* than another; you dislike it *more* than another.

A DICTIONARY OF ENGLISH SYNONYMS.

Comprising words related in meaning, arranged in groups, with examples of their proper use and notes of their difference. A complete alphabetical index of these words is to be found at the end of the table.

A knowledge of synonyms brings out the finer and nicer shades of the meanings of words, makes our meaning clearer, and secures a good literary style. There are in English a great many pairs of words which have come into the language, one through the gateway of the Anglo-Saxon, the other through the French, and these are almost perfect synonyms. These are curiously repeated in the liturgy of the English church, and include "acknowledge" and "confess," "dissemble" and "cloke," and "will" and "testament." Yet in the growth of the language these words have had other distinguishing shades of meaning attached to them, until it may almost be positively stated that there are no two words in the English language that are perfectly synonymous. The word *synonyms* has come to mean pairs of words or groups of words which are similar in meaning. A table of synonyms is of great service to young writers, who are often at a loss to find the word which will exactly express the shade of meaning which is desired. Very often the required word may be found by turning to a word which expresses the idea, and looking through the list of synonyms under that head.

1. **ABANDON,** abdicate, abjure, cast off, cease, cede, depart from, desert, discontinue, forego, forsake, forswear, give up, leave, quit, recant, relinquish, renounce, repudiate, resign, retire from, retract, surrender, vacate, and withdraw from. A throne is abdicated; religion, opinion, or allegiance is abjured; territory is ceded; a wife deserts her husband; a cowardly crew deserts a ship, while the passengers abandon it; a pleasure is foregone; an office is resigned; a statement is retracted; religion is renounced; a claim is repudiated; premises are vacated.

2. **ABANDONED** (adjective), bad, corrupt, depraved, detestable, dissolute, forlorn, forsaken, incorrigible, irreclaimable, odious, profligate, reprobate, shameless, unprincipled, vicious, wicked. An abandoned person has given himself up wholly to unrestrained evil and does not care; the reprobate is beyond hope; the corrupt and vicious may regard public opinion; the dissolute and profligate may reform.

3. **ABASE,** bring low, cast down, debase, degrade, depress, disgrace, humble, humiliate, lower, reduce, sink. Abase is to lower in station or in reputation; debase is to lessen the character or quality; an insult humiliates; a sense of inferiority or of unworthiness humbles; punishment disgraces; an officer is degraded in rank or reduced; a vice is degrading; misfortune may abase, but cannot disgrace.

4. **ABASH,** bewilder, confound, confuse, daunt, discompose, disconcert, dishearten, embarrass, humble, humiliate, mortify, overawe, shame. A perplexity may confuse; a defeat may confound; an accident may discompose; a failure of memory may disconcert an actor; losing one's way may bewilder one; a rude child may mortify a parent; soldiers overawe a mob; an officer's weapon daunts a criminal, exposure shames him; a Christian humbles himself before God; a sense of shame humiliates.

5. **ABATE,** decline, decrease, diminish, ebb, lessen, lower, mitigate, moderate, reduce, subside. Pain, fever, or a storm abates; offenses or misfortunes are mitigated; stocks or prices decline; a flood subsides; a tide ebbs; interest is lowered; weather moderates; population decreases.

6. **ABBREVIATE,** abridge, compress, condense, contract, curtail, cut down, epitomize, prune, reduce, shorten. A word or a phrase is abbreviated or contracted; a book is abridged; air is compressed; water vapor or gas is condensed; expenses are curtailed; wages are cut down; a larger work is epitomized; bushes are pruned; hours are shortened.

7. **ABET,** advocate, aid, assist, countenance, embolden, encourage, incite, instigate, promote, sanction, support, uphold. A crime is abetted; a reform is advocated; the poor are aided; the weak are assisted; men are incited to a riot; a crime is instigated; civil authorities are upheld; a course may be sanctioned.

8. **ABHOR,** abominate, despise, detest, dislike, hate, loathe, nauseate, scorn, shun. Abhor implies a starting back in horror and is the strongest of the series; detest implies both indignation and contempt; loathe suggests disgust; a traitor is abhorred; a coward is despised; a liar is detested; tyranny is hated; a flatterer is loathed.

9. **ABILITY,** aptitude, capability, capacity, cleverness, competency, dexterity, efficiency, expertness, faculty, power, qualification, readiness, skill, talent. Ability includes power of every kind; capacity suggests the power to receive; efficiency the power to execute; faculty is the power of mind or body; talent is a special endowment; dexterity is power acquired by practice; competency meets the demand of the occasion; readiness is promptness in meeting the demand.

10. **ABOLISH,** abate, abrogate, annihilate, annul, destroy, end, eradicate, exterminate, extirpate, nullify, obliterate, overthrow, prohibit, remove, repeal, reverse, revoke, set aside, stamp out, subvert, supplant, suppress, terminate. Slavery is abolished, as are other widespread or long-existing conditions, customs, or institutions; nuisances are abated; laws and treaties are abrogated by other laws or treaties which supersede them; laws are annulled, nullified, or repealed; that which is annihilated is utterly destroyed (reduced to nothing); troubles are ended; faults are eradicated (taken out by the root); pests are exterminated (put an end to); an eye is extirpated in surgery (taken out root and branch); a postage stamp is obliterated; laws prohibit; appellate courts reverse decisions of inferior courts; treaties are revoked; liberties are subverted; rebellions are suppressed; court favorites are supplanted; controversies are terminated.

11. **ABRIDGMENT,** abstract, analysis, compend, compendium, digest, outline, summary, synopsis. An abridgment gives the most important parts of a work just as they stand in the larger work; a synopsis or outline gives a plan of the larger work; an analysis gives the chief thoughts or arguments in a condensed form; a summary condenses to the utmost the thought; an epitome, compend, or compendium is a compact presentation of a subject without regard to other publications. A dictionary is abridged, but an analysis, summary, digest, or epitome of it is impossible. We may have a compendium of English literature or an epitome of religion, but an abridgment of either is an absurdity.

12. **ABSOLUTE,** arbitrary, authoritative, autocratic, despotic, irresponsible, supreme, tyrannical, unconditional, unequivocal. Absolute power is neither limited nor controlled; authoritative is based upon the right to claim authority; autocratic power is limited only by the person who so rules; despotic is rather weaker than tyrannical; arbitrary power rests upon the will or judgment of the wielder; irresponsible persons have no limiting restraint; unequivocal has the sense of decided, most certain, undoubted.

13. **ABSOLVE,** acquit, clear, discharge, exculpate, exempt, exonerate, forgive, free, liberate, pardon, release, set free. To absolve from sins; to acquit of a charge; to clear of blame; to discharge a prisoner; to exculpate from fault; to exempt from taxes or military service; to exonerate from guilt; to forgive an offender; to free a prisoner; to liberate a captive; to pardon a criminal; to release from an obligation; to set free from a bond.

14. **ABSORB,** consume, drink in, drink up, engross, exhaust, imbibe, suck up, swallow, swallow up, take in, take up. Wood absorbs moisture; wood is consumed in the fire; we drink in knowledge; one engrosses the conversation; learning is imbibed; a credulous person swallows preposterous stories; lime takes up water.

15. **ABSTINENCE,** abstemiousness, continence, fasting, frugality, moderation, self-control, self-restraint, sobriety, temperance. Abstinence implies going without; abstemiousness, partaking sparingly; self-control, self-restraint, and self-denial imply refraining from what one desires; fasting has a religious or hygienic connection; one is temperate in eating and drinking; but one abstains from vice.

16. **ABSTRACT,** appropriate, detach, discriminate, distinguish, distract, divert, eliminate, purloin, remove, separate, steal, take away, withdraw. We abstract an element from all that attends it and we view it separately; the mind is abstracted from all other subjects and concentrated upon one; the mind is diverted from that to which it should attend; ideas may be separated; we discriminate between things by distinguishing their differences; we eliminate certain things from a consideration by ignoring them; purloin and steal imply appropriating unlawfully to one's own use.

17. **ABSTRACTED,** absent-minded, absorbed, heedless, inattentive, indifferent, listless, negligent, oblivious, preoccupied, thoughtless. Abstracted, absorbed, and preoccupied are used when considering the cause; absent-minded relates to the effect of the abstraction, absorption, or preoccupation; heedless is willfully thoughtless; inattentive to the subject in hand is absorption in another subject; listless may be a physical condition of inattention; negligent, when the abstraction causes indifference; one is oblivious when the thoughts are elsewhere.

18. **ABSURD,** anomalous, chimerical, erroneous, false, foolish, ill-advised, ill-considered, ill-judged, inconclusive, incorrect, infatuated, irrational, mistaken, monstrous, nonsensical, paradoxical, preposterous, ridiculous, senseless, stupid, unreasonable, wild. That which is contrary to the first principles of reasoning is absurd; that which deviates from a fixed rule, or law, is anomalous; enterprises which are fancifully impracticable are chimerical; views are erroneous through mistaken conceptions; reasoning may be false; that which is contrary to the dictates of good sense is foolish; irrational views are contrary to sound reasoning; a statement may be paradoxical (or apparently contradictory in its terms) and yet be true; that which is silly is petty and contemptible; monstrous and preposterous imply an overwhelming absurdity; verses may be nonsensical and yet entertaining.

19. **ABUSE,** damage, defame, defile, disparage, harm, ill-treat, ill-use, impose on, injure, malign, maltreat, misuse, molest, oppress, persecute, pervert, rail at, reproach, revile, ruin, slander, victimize, vilify, vituperate, wrong. Property is abused by willful defacement; a tenant may damage property and injure its sale; false reports may defame a man; contact with vice will defile him; we disparage by speaking lightly or by making little of; a man may be abused without being harmed; talents are often perverted; innocent persons are often victimized by swindlers; a wrongfully accused man is vilified; shockingly abusive language is vituperation; one is oppressed for pecuniary advantage, and persecuted for opinions.

20. **ABYSS,** chasm, deep, gorge, gulf, pit, profound. Abyss, chasm, and gorge generally apply to openings in the earth caused by upheavals; gulf, deep, and profound refer to the ocean; a pit is an excavation.

21. **ACCEDE,** acquiesce, agree, assent, coincide, comply, concur, consent, yield. Opinions which concur agree in general terms; those which coincide agree in every detail; decisions always concur, never coincide; causes concur, but views coincide; terms are accepted; wishes are acceded to or complied with; proposals are acceded to or consented to; consent expresses a more hearty acquiescence than does accede; one yields to another upon conviction.

22. **ACCELERATE,** advance, dispatch, drive, expedite, facilitate, further, hasten, hurry, promote, speed, urge. Motion is accelerated; enterprises are advanced; a thing is dispatched when finished; work is expedited when all hindering influences are removed; processes are facilitated when means of accomplishment are rightly adjusted; hurry implies attendant confusion; a cause is promoted by advancing influences.

23. **ACCESSORY,** abettor, accomplice, ally, assistant, associate, coadjutor, colleague, companion, confederate, follower, helper, henchman, participator, partner, retainer. Accessory, abettor, confederate, and accomplice are generally used in a bad sense. An ally is a national or military associate; an abettor of a crime is present at the time of its commission, an accessory never; one who watches outside while a crime is committed is an abettor, not an accessory, while an accomplice is usually one of the chiefs or principals; a retainer, or a henchman, or a follower, is one bound to a chief by reward, fee, or need; a partner is one whose association is now wholly limited to business interests; a colleague is always used in a good sense.

24. **ACCIDENT,** adventure, calamity, casualty, chance, contingency, disaster, fortuity, hap, happening, hazard, incident, misadventure, mishap, possibility. An accident is a happening without intention; an adventure is a happening either good or ill; a calamity involves serious sufferings; a casualty is usually a fatal accident; chance is a happening without known cause; a contingency is the possibility of happening; a disaster is an accident attended by suffering or loss; a fortuity is a chance occurrence; a mishap is a slight disturbing accident.

25. **ACCOMPLISH,** achieve, bring about, bring to pass, carry out, carry through, complete, consummate, discharge, do, effect, execute, finish, fulfill, perform, realize. We accomplish what we set out to do; we achieve some great or especially worthy undertaking; we bring about or bring to pass things in which we were sharing with others a leading part; carry out and carry through apply to long-sustained efforts; we complete that which has been begun before; we consummate that upon which thoughts and hopes have long been centered; we discharge what was assigned us to do; we effect a purpose by certain means; we execute the commands of another; finish applies frequently to the superficial and detailed careful execution of a work; we fulfill our obligations or agreement; we perform a feat in which there has been always a possibility of failure; we realize an ideal.

26. **ACQUAINTANCE,** association, companionship, experience, familiarity, fellowship, friendship, intimacy, knowledge. Acquaintance between persons implies that each knows the other. We can have no acquaintance with any one who does not know us. Association does not imply friendship or intimacy, for men may be associated for a long time in business with each other without knowing each other intimately; there may be friendship between two who have never met, but who know each other by correspondence and reputation; intimacy implies a thorough knowledge of each other's thoughts and feelings; fellowship is greater than friendship by the great quality of sympathy; acquaintance with a man's writings or with a subject is less deep than is familiarity.

27. **ACRIMONY,** acerbity, asperity, bitterness, causticity, harshness, malignity, moroseness, severity, sharpness, sourness, unkindness, virulence. Acerbity is sharpness with some bitterness caused by slight or momentary vexation; asperity denotes decided irritability; acrimony is caused by deep-rooted dislike; malignity denotes the greatest degree of intention to do harm; virulence of speech suggests the exudation of poison and accompanies unbridled hostility; severity of language is always calm and intentionally just, though always painful.

28. **ACTIVE,** agile, alert, brisk, bustling, busy, diligent, energetic, expeditious, industrious, lively, mobile, nimble, officious, prompt, quick, ready, restless, sprightly, spry, supple, vigorous, wide-awake. Active implies not only a quickness but a continuous or habitual action; busy means actually employed; a bustling person is noisily busy; an officious person is unpleasantly active in the affairs of others; a restless person is busy because he cannot keep quiet.

29. **ACTUAL,** authentic, certain, demonstrable, developed, genuine, positive, real, true, unquestionable, veritable. Actual applies to something which has been done or is accomplished; real to something which exists; an authentic story is one which has been fully proved or corroborated; demonstrable is capable of proof; developed has been evolved or brought about; genuine is opposed to false, dissembling, or fictitious; positive is fixed or established.

30. **ADD,** adjoin, affix, amplify, annex, append, attach, augment, cast up, enlarge, extend, increase, join on, make up, subjoin, sum up. In adding we increase by uniting; in multiplying we increase by repeating; we augment immaterial things by any means; we enlarge a house; extend the bounds of an empire; annex a building to another; affix a seal to a document or a signature to a letter; amplify a discourse; append a statement; make up an account.

31. **ADDICTED,** accustomed, attached, devoted, disposed, given, habituated, inclined, prone, wedded. One is addicted to habits which have gained a strong hold upon him; accustomed to hard work; attached to his family; devoted to his art; given to gluttony; wedded to science; prone to evil.

32. **ADDRESS,** accost, apostrophize, appeal, approach, court, greet, hail, salute, speak to, woo. We accost a stranger when we speak first; greet is a passing salutation and may be silent; hail is to greet in a loud-voiced and hearty manner; to apostrophize is to solemnly address; we appeal for aid; we may address a person either by speech or by writing.

33. **ADEQUATE,** able, adapted, capable, commensurate, competent, equal, fit, fitted, fitting, qualified, satisfactory, sufficient, suitable. An adequate remedy; an able man will do everything well; a capable man will do fairly well; means are commensurate when they are equal to the performance of the task in hand; competent, which takes account of both natural and acquired abilities, is higher than qualified, which considers only the acquired abilities.

34. **ADMIRE,** adore, applaud, approve, enjoy, esteem, extol, honor, love, respect, revere, venerate, wonder. We admire the beauty of nature; we enjoy a book; we approve excellence; applaud a good performance; esteem the good; honor and respect nobility of character; revere and venerate the aged; extol the goodness of God; adore his majesty and power.

35. **ALLUDE,** advert, hint, imply, indicate, insinuate, intimate, mention, point, refer, signify, suggest. Allude is to refer only slightly to a matter; we advert to it when we turn out of our way to consider it; we refer to it when we bring it prominently before the mind of our hearers; we mention it when we state it clearly or name it distinctly; a hint is a harmless suggestion; but an insinuation is always unfavorable; we imply without directly stating a fact.

36. **ALTERNATIVE,** choice, election, option, pick, preference. Alternative is strictly the choice of one of two things. It has, however, come to mean the one thing chosen from two; choice is a selection from among many things, or the act of choosing, or the right to choose; option is the privilege or right of choosing; pick and election are examples of a word of Anglo-Saxon origin and one derived from the French, which were at one time synonymous, and these are used when the objects are represented as displayed before one and a choice is made; alternative signifies that it is the only other thing one can do under the circumstances, while all the other words in the group imply freedom of action.

37. **AMBITION,** aspiration, competition, emulation, opposition, rivalry. Ambition was originally "a going around" among the Roman people asking for their votes for political office; it is the seeking for fame, honor, riches, and political preferment; aspiration is the simple desire to excel; competition is a striving with another; emulation is a friendly desire to equal or to surpass another; opposition suggests a struggle involving both competition and hindrance; rivalry is a competition for the nobler sorts of prizes.

38. **ANALOGY,** affinity, coincidence, comparison, likeness, parity, proportion, relation, resemblance, semblance, similarity, simile, similitude. Analogy is a resemblance and from the likeness noted other deductions are made; affinity is attraction without apparent likeness; coincidence is an exact agreement on one or more points, the commonest being that of time of occurrence; similitude is a setting forth of a comparison between things which resemble one another in one or more points; resemblance is only superficial and does not extend to the essence or entity of things; parity of reasoning is applied to an argument on things not really analogous.

39. **ANGER,** animosity, displeasure, exasperation, fretfulness, fury, impatience, indignation, irritation, offense, passion, peevishness, petulance, rage, resentment, temper, vexation, wrath. Anger is violent and is brief in proportion to its violence; animosity is active and lasting, though less so than enmity; displeasure is the mildest of these terms; exasperation, literally "a roughening," is a flash of anger that quickly subsides; fretfulness, peevishness, and petulance are slight displays of anger excited by petty causes; fury is intense and uncontrollable; indignation is a form of impersonal and unselfish displeasure; irritation is a slight expression excited by repeated occurrences of slight cause; rage excites to imprudent and indiscreet acts; temper is properly the general state of mind, though it is often colloquially used for anger.

40. **ANIMAL,** beast, brute, creature. Animal is the term used to denote a being capable of feeling, and is employed to distinguish from inanimate objects and from vegetable life; a beast is one in which the appetites are the strongest characteristics; a brute is the term applied to an animal incapable of experiencing the finer sensibilities; creature is a general term applied to all created things.

41. **ANNOUNCE,** advertise, circulate, communicate, declare, enunciate, herald, make known, notify, proclaim, promulgate, propound, publish, report, reveal, state, tell. We announce a fact in some formal way or public manner; business is advertised; plans are communicated; we enunciate views; notify an individual, but give notice to the public; declare our intentions or declare war; proclaim peace; propound a question; promulgate a platform of a party; herald an event; reveal a secret; report an interview; publish a book; announce our arrival.

42. **ANSWER,** rejoinder, repartee, reply, response, retort. An answer may be in words, or by a look or an action or sign; a reply unfolds thought and intelligence; a rejoinder is an answer to a reply; repartee is a witty, good-natured, and prompt answer; a retort may be bitter, sarcastic, or savage in its nature.

43. **ANTICIPATE,** apprehend, expect, forecast, foretaste, hope, look forward to. Anticipate goes before in fact or in thought; apprehend is applied to an event or condition which is both expected and feared; we expect that which we have good reason to think will happen; we forecast what we think or judge will occur; we foretaste what we look forward to with certainty and pleasure; we hope for that which we wish to happen; we look forward to a condition which possibly may come about.

44. **ANTIPATHY,** antagonism, aversion, detestation, disgust, dislike, distaste, hatred, hostility, repugnance, repulsion. Antipathy and repugnance are intuitive or instinctive and may have no actual or apparent cause; antipathy is a mental or physical recoil from association or connection with either persons or things; repugnance suggests a desire or impulse to fight against; aversion, or turning away from, is both deep and lasting in its effects; disgust and distaste are usually acquired; those of strong religious and moral senses abhor and detest.

45. **ANTIQUE,** ancient, antiquated, old-fashioned quaint. Antique is old in style and is still prized; ancient is merely very old; antiquated is old and discarded; old-fashioned may or may not be prized and we may approve or contemn the thing so spoken of; quaint is old, odd, and pleasing.

46. **ANXIETY,** anguish, apprehension, care, concern, dread, fear, foreboding, fretting, misgiving, perplexity, solicitude, trouble, worry. Anxiety is suffering caused by what may happen, while anguish is the result of what has happened; in anxiety there is always the element of hope, while in apprehension, dread, fear, and foreboding there is only despair; care and anxiety over matters impel to the necessity of taking action to prevent or repair injury; concern is less grave than anxiety; worry is a less serious form of anxiety; fretting and worry imply an open communication or display to others of anxiety; one may be perplexed but not at all anxious; trouble is a general term for mental disturbance.

47. **APATHY,** calmness, composure, immobility, impassibility, indifference, insensibility, lethargy, phlegm, sluggishness, stoicism, unconcern, unfeelingness. Apathy is an entire absence of feeling or emotion; calmness is a state of mind resulting from courage, confidence, or strength; composure is calmness produced by the exercise of the will; immobility is usually applied to the countenance which does not betray its emotions or feelings; impassibility is the inability to suffer and is a divine attribute; indifference implies a lack of interest in a thing, insensibility, a lack of feeling; lethargy suggests a stupor or general inactivity; phlegm is a constitutional sluggishness; stoicism is intentional or willful indifference to trouble or suffering, sometimes spoken of as philosophical; unconcern disregards consequences.

48. **APOLOGY,** confession, defense, exculpation, excuse, justification, plea, vindication. By offering an apology one admits wrong and offers concessions; in old times apology meant a valiant defense; an excuse is a reason for the fault or offense; a confession is a full acknowledgment of a fault or offense and may or may not contain an apology or excuse; an exculpation is a defense clearing one's self of blame; a justification is a plea of right and justice in one's action; a plea may be a prayer for pardon or leniency, or it may be an attempt to clear one of all blame; a vindication is a reëstablishment of reputation.

49. **ASK,** beg, beseech, crave, demand, entreat, implore, petition, pray, request, require, solicit, supplicate. We ask what we have good reason to expect; we beg what we have no right to expect; we beseech with a humbled intensity; crave is a formal word; we demand what is rightfully ours; entreat is an earnest asking; implore is attended by weeping; petition is written request to those in authority; request is a formal asking; solicit is an effort to excite sympathy; supplicate implies an asking on bended knees.

50. ASPECT, view. Aspect is the way a thing appears to us; view is the application of our faculty of sight to a large or complex object. We may take a false view of things; things may present a false aspect to us; a view from one's window may be permanent, but may present varying aspects to us.

51. ASSEMBLY, assemblage, group, collection, gathering, company, meeting, convention. Assembly and assemblage are applied to persons, though a late use of the word assemble is applied in manufacturing to the putting together of the parts of machinery, such as bicycles or automobiles; an assembly of persons is a voluntary gathering of people usually under the authority of one person; a group is applicable to both animate and inanimate objects, and usually conveys an idea of artistic effect; a collection suggests a gathering together under some guiding force which may be with a definite purpose in view or mechanical and by chance; a meeting is less formal and more general than an assembly; a convention is a gathering together under authority, in which the members are assembled but the gathering is convened.

52. ASSERT, affirm, asseverate, aver, avouch, protest. Assert is used in opposition to suppose or imply, while affirm is the opposite of deny; we assert a truth; we affirm a proposition; to asseverate is to assert with earnestness and force; we aver what we are in a position to prove; protest originally meant a serious or public indication of truth and sincerity, but in doing so it often entailed disproving the opposite and it now often has the force of antagonism or opposition; and while we protest our innocence we also protest against another person or thing; protestations are often apparently the opposite of actions and indicate one motive while they seem to express another.

53. AVENGE, revenge. Avenge is to inflict pain or loss in retaliation for injury to one's self or another and may be an act of justice; revenge is the infliction of pain or loss to satisfy a vindictive desire; we avenge another's loss; we revenge ourselves.

54. AVERAGE, mean, medium. Average is a medial sum or quantity made out of several unequal sums or quantities; mean is a point intermediate between two extremes; medium, in addition to a sense of mean, has the idea of an agent or instrument.

55. BAD, evil, naughty, wicked. Bad denotes the absence of good qualities and is the general term; evil is employed only in a moral sense; a wicked man is immoral and sinful, offending both divine and human laws; naughty expresses the faults of children, though at one time it was applied to anything which was not what it ought to be.

56. BAFFLE, defeat, frustrate. Baffling involves repeated counteractions from several standpoints, as a baffling wind heads a sailor off in every direction; when used of persons it implies skill and scheming; a disease may baffle the best efforts of the most skilled physician; defeat is final, while one may overcome baffling forces; a man may be baffled but not defeated; plans and purposes are frustrated when they are made or caused to miss their ends

57. BANISH, exile, expel. Banish signifies to put under a ban, and implies the removal from a place or the prohibition from privileges; exile signifies removal from home; expulsion is simply coercive, and may be the act of an individual or a society beyond whose jurisdiction the act does not extend. The Tarquins were banished from Rome never to return; a man may be exiled for a time; a person is expelled from a society.

58. BARE, naked, uncovered. Bare implies the absence of some particular covering; naked the absence of all covering; that is uncovered from which the covering has been removed.

59. BASE, vile, mean. The intensity of meaning of these words rank as written, base stronger than vile, and vile than mean. We abhor the base; are disgusted with the vile; and have contempt for the mean. The higher in social rank the greater his baseness; the lower in rank the greater his vileness; the richer the person the greater his meanness.

60. BEAR, carry, convey, transport. Bear is to take the weight of a burden upon one's self and to sustain it; carry is to remove the object to another place; convey expresses the manner in which goods or messages are carried; transport tells not only the manner in which they are carried but implies something of the distance.

61. BEAR, yield. Bear marks the power of bringing forth; yield is applied to the result. Trees bear fruit under nearly all conditions; they yield according to the degree of cultivation which they receive. A certain quantity of seed will yield so much, while each individual plant bears its share.

62. BIAS, prepossession, prejudice. Bias marks a leaning toward feelings or opinions; prepossession indicates an occupation of the mind by some idea which shuts out all others; prejudice is a condition of mind caused by judging or deciding without full information or data. Prejudice is always used in a bad sense; a man's mind may be honestly biased or prepossessed, but prejudice favors the cause of faleshood.

63. BLAME, censure, condemn, reprove, reproach, upbraid. Blame simply ascribes a fault to one; censure expresses disapproval of acts; condemn is more concerned with things than with persons; reprove is decidedly personal in its application; reproach denotes the expression of personal feelings in a matter; upbraid conveys an idea of contempt or wounded feelings.

64. BLEMISH, stain, spot, speck, flaw, defect. A blemish affects the nice appearance of a thing and may include all of the other terms; a stain is larger than a spot, while both are caused by something foreign to the object; a speck is smaller than a spot; a flaw is usually applied to hard substances and denotes a faulty surface; a defect denotes that some essential part is lacking.

65. BLOT OUT, expunge, rase, erase, efface, cancel, obliterate. Blot out may cover with a blot; expunge shows that the parts are no longer to be considered; figures are erased that the space may be occupied by others; they are canceled by striking through them with a pen or by similar marks; they are obliterated by any or all of these means without indicating which; they are effaced by scraping off the surface as of a wall.

66. BODY, corpse, carcass. We speak of the dead body of man or of brutes; corpse is the term to use to convey that a human body is lifeless; carcass is often used contemptuously or restricted properly to a brute's dead body.

67. BOLD, fearless, intrepid, undaunted. Bold applies to the spirit; fearless to the mind. One may be fearless when there is no danger; but one is bold only in time of danger. Intrepid is a condition of fearlessness; undaunted is the highest condition of boldness, and is the state in which one faces almost awe-inspiring odds.

68. BOOTY, spoil, prey. Booty indicates a division among soldiers or sailors of things taken in battle and divided in shares; spoils are the property of the slain in battle which rightfully belong to the victor; prey is properly that which is taken to be consumed, though the term is often used figuratively in an extended sense.

69. BORDER, edge, rim, brim, brink, margin, verge. Border is a stripe; edge is a line; rim is the edge of any vessel; brim is the edge of a cup; brink is the edge of a precipice; margin is the border around a printed or written page; verge is the very outer border.

70. BOUND, limit, confine, circumscribe, restrict. A bound is a natural or political division between countries, such as a river or mountain; limit is an artificial boundary; to confine is to bring the limits close together; to circumscribe is to mark out the surrounding limits; to restrict is to keep within well defined limits.

71. BOUNDARY, frontier, confines, precinct. A boundary divides or limits the extent of a thing; the frontier lies on the front or at the entrance into a country; confines are the parts which touch other states or countries; a precinct, while properly the girdle or space surrounding something, is often applied to the entire space within certain bounds.

72. BOUNDLESS, unlimited, infinite. A thing is boundless while no limits or bounds exist or may be seen. We speak of the boundless ocean only while we cannot see the bounds. Unlimited indicates that no limits exist but that there might better be a restriction. Infinite indicates that no limits can exist.

73. BRAVE, defy, dare, challenge. To brave is to withstand or to resist an opposing force with bravery; to defy is to consider lightly an opposing force as one which can easily or safely be overcome; to dare is to provoke opposition; to challenge is a formal provocation to a contest.

74. BRAVERY, courage, valor. Bravery depends upon the physical temperament, is a sort of instinct, and is of service only in time of contest; courage is based upon reason or reflection, may be displayed by persons of weak physical powers, and is of service at all times; valor is the highest type and combines both bravery and courage.

75. BREAK, burst, crack, split. Break indicates separation into parts with more or less force and from any cause; burst is applied to hollow bodies which break under pressure from the inside; crack is an irregular breaking of hard or brittle objects; split is to break lengthwise and is generally applied to wood.

76. BREEZE, gale, blast, gust, storm, tempest, hurricane. A breeze is gentle; a gale is strong and steady; a blast is sudden, impetuous, and of short duration; a gust is sudden and vehement. These terms are applied to the wind. A storm includes other elements besides the wind; a tempest is a storm with thunder and lightning; a hurricane exceeds all storms in violence and intensity.

77. BRING, fetch, carry. Bring is to carry a thing with one from place to place; fetch is to go first to the place where the thing is and to bring it back with one; carry has the sense of taking something directly from one place to another.

78. BUILD, erect, construct. Build expresses the purpose; erect, the manner; and construct, the contrivance. Erect conveys an idea of height; construct, of ingenuity. We build houses, erect monuments, and construct machines.

79. BUSINESS, occupation, employment, engagement, avocation. Business takes all one's time, thoughts, power, and interest; occupation and employment, only one's time and strength; engagement is partial employment; avocation a special or particular employment. One who is busy has more to take his attention than one merely occupied.

80. BUSINESS, trade, profession, art. The employment of one's time, experience, and ability for profit is business; buying and selling are inseparable from trade; learning and particular skill are required in a profession; artistic ability is needed in an art.

81. BUSINESS, office, duty. Business is an engagement which a man proposes for himself; office, what he is required to do for another; duty is an obligation. Office being work performed for others is usually restricted to public affairs.

82. BUSTLE, tumult, uproar. Bustle is marked by hurry; tumult by confusion and disorder; uproar by the noise of many voices.

83. BUY, purchase, bargain, cheapen. Buy and purchase are synonymous terms, and may be interchanged, though purchase is considered a term of greater refinement by some. We buy necessities but purchase luxuries. Bargain and cheapen have to do with the price more than with the exchange. Poor people are obliged to cheapen, but a mean person may bargain.

84. CALAMITY, disaster, misfortune, mischance, mishap. Calamity is a great disaster or misfortune; misfortune is a great mischance or mishap. A calamity is attended by destruction; disaster by injury or defeat of one's plans; misfortune by the loss of property or of health; a mischance or mishap is comparatively trivial.

85. CALCULATE, reckon, compute, count. Reckon, compute, and count are all modes of calculating. We reckon when we count and set down in detail; we compute by estimates based upon a variety of information; we count one by one. Calculation is applied to the larger mathematical processes.

86. CALENDAR, almanac. A calendar registers events under every month, as a gardener's calendar which tells the horticultural events for each month; an almanac registers times or the divisions of the year.

87. CALL, cry, exclaim. Call summons or attracts another on ordinary occasions; cry is to call loudly upon some particular occasion; exclaim is to give voice to one's feelings by a loud cry or call on some particular occasion.

88. CALL, invite, bid, summon. We call by the use of any sounds; invite by a direct or formal act or word or by a look, manner, or motion; we bid in words and with some authority; we summon by a more or less imperative request.

89. CALM, composed, collected. Calm expresses the state of the feelings; composed, of feelings and thoughts; collected, more particularly of the thoughts.

90. CALM, placid, serene. Calm refers only to the winds; serene, to the air and sky; placid, only to the mind.

91. CAN, may. Can denotes possibility or power, or ability; may, liberty, permission, or probability.

92. CANDID, open, sincere. Candid implies conscious purity of intention; openness implies unguardedness and a freedom in speaking one's thoughts; sincerity permits one to speak only what one thinks and causes one to frequently refrain from speaking.

93. CARE, charge, management. Care comprehends personal labor in attending to something; charge conveys an idea of responsibility; management involves the direction of others or of regulating or ordering affairs.

94. CAREFUL, cautious, provident. Carefulness may be shown by either doing or in not doing; caution is care in guarding against danger; provident conveys an idea of seeing beforehand and of taking steps to guard against possible danger in the future.

95. CARESS, fondle. One caresses by words and actions; fondles, by actions alone.

96. CARNAGE, slaughter, massacre, butchery. Carnage takes into account the number of the dead resulting; slaughter, both the act and the manner of the killing; massacre denotes a secrecy and treachery of action; butchery is the killing of the helpless.

97. CARRIAGE, gait, walk. Carriage indicates the way one carries the whole body; gait, the limbs and body in walking; walk is rather indefinite and indicates the manner of walking.

98. CAUSE, reason, motive. Cause is concerned with the order in which connected events happen; reason denotes the movements and operations of the mind; motive the impulses or ideas which move one to act.

99. CAUSE, occasion, create. To cause is to bring about naturally; to occasion is to bring about incidentally, though often necessarily; create is to bring into existence arbitrarily.

100. CAUTIOUS, wary, circumspect. One is cautious on all occasions when danger is present; but wary when the danger is great. These terms vary only in degree and are used of practical acts; circumspect denotes a watchful care in matters of theory and contemplation.

101. CEASE, leave off, discontinue. Cease indicates the passive act of stopping particular actions or habits, and is the simple cessation; leave off and discontinue are active. We cease writing or crying; a laborer leaves off his work at any hour, generally with a view of taking it up again; we discontinue visits when we observe that they are not agreeable to others.

102. CELEBRATE, commemorate. We may celebrate either a present or past event; we commemorate only past events; celebration is usually festive and social; commemoration is marked by solemnity or seriousness.

103. CELESTIAL, heavenly. Celestial is opposed to terrestrial and is a general term applied to the heaven of the heathens; heavenly is used as relating to the abode of the God of the Hebrews and the Christians.

104. CERTAIN, sure, secure. We are certain and sure as to our convictions; secure regarding our interests or condition; certainty is based upon positive knowledge or experience; sure may be a condition resulting from reliance upon the word of others; security is a sense of freedom from danger and literally means without care.

105. CESSATION, stop, rest, intermission. Cessation indicates that something is no longer going on; stop, that something has intervened to prevent motion or a continuance of the act; whatever does not move or exert itself is at rest; intermission is an alternation of motion and rest at regular or irregular intervals.

106. CHAIN, fetter, band, shackle. Chain is the general and indefinite term; fetters are larger than chains and may consist of several chains; bands are any restraints upon the limbs or body; shackles are fetters which confine or hamper the limbs.

107. CHANCE, fortune, fate. Chance is the name given to the uncertain and variable events which happen without order, form, or design; fortune applies to persons, and is represented as being blind in the bestowal of its awards; fate forms fixed plans with decisive results.

108. CHANCE, probability. A chance is a possibility however slight; many chances make a probability.

109. CHANCE, hazard. Hazard is a species of chance and is always unfavorable; there is a chance of gaining, but a hazard of losing.

110. CHANGE, alter, vary. One changes a thing by putting another in its place; one alters a thing by making it different from what it formerly was; one varies it by altering it in several ways and at different times.

111. CHANGE, exchange, barter, substitute. We change by putting one thing in the place of another; we exchange by giving one thing for another, being guided generally by a preference only; we barter when we give in exchange for a thing another commodity of equal value; we substitute when we put one thing in the place of another for better effect.

112. CHANGE, variation, vicissitude. Change is a ceasing to be the same; variation consists in being different at different times; vicissitude in being alternately different and the same at different times. We change our mode of life; experience variations, and suffer the vicissitudes of daily life.

113. CHARACTER, letter. Character is a letter of a foreign alphabet which differs in form from those of our own; the constituents of our own alphabet are letters; the units in shorthand are characters and not letters.

114. CHARACTER, reputation. Character is the moral equipment as it really is; reputation is what others think a man to be. A man of doubtful character may have a good reputation.

115. CHARM, enchant, fascinate, enrapture, captivate. Charm is to affect as by a charm or magical verse; to enchant is stronger than to charm and was originally to affect as by an incantation; to fascinate is still stronger and affects through the eye and operates by words and motions; to enrapture is a mental effect which is brought about directly without the implied secrecy of the previous terms; to captivate has a moral application only and is often used with fascinate in a bad sense.

116. CHEAT, defraud, trick. To cheat is to deceive by direct or gross falsehood or tricking; to defraud by a fixed plan or contrivance; to trick by an impromptu invention.

117. CHECK, curb, control. Check is derived from the game of chess where the term denotes that the king is prevented from moving, hence it implies that the body to be checked is in motion; curb is derived from the curb of a horse's bridle and like control may be applied to bodies at rest or in motion; control or counter-roll is the keeping of one roll against another and has a moral application.

118. CHECK, chide, reprimand, reprove, rebuke. One is checked that he may be stopped in what he is then doing; one is chidden that he may be prevented from repeating an act; one is reprimanded for omissions or mistakes; reproved for irregularities of conduct; rebuked for improprieties of behavior.

119. CHECK, stop. Check is to cause to move more slowly; stop is to prevent all motion. The course of a river is checked by rocks or sand banks, but is stopped by a dam; a man who is checked in his career continues upon it but more slowly; one stopped in his career adopts another course.

120. CHEER, encourage, comfort. One cheers the spirits of the sad, encourages the resolution of the timid, and comforts the afflicted in their distress. Cheering and encouraging act upon the mind; comforting may affect the body as well.

121. CHEERFUL, merry, sprightly, gay. One is cheerful when the flow of happiness is even and moderate; merry when there is more noise and tumult; sprightly when the happiness is buoyant and demonstrative; gay when the pleasure is fitful and may be followed by sullenness and discontent.

122. CHIEF, principal, main. Chief has to do with order or rank, as a chief clerk; principal, with importance and respectability, as the principal people or street in a city; main with the degree or quantity, as a main water pipe, or a main line, or the main object.

123. CHIEF, chieftain, head, leader. Chief is the first in civil matters; leader is the first in bold or difficult enterprises; a chieftain is a sort of leader who usually combines executive ability and undisputed power over his followers; heads are endowed with talents for directing large enterprises.

124. CHOOSE, prefer. To choose is to take one thing from among others; to prefer is to take one thing before or rather than another. Necessity often directs a choice and may prevent from taking what one prefers; the dictates of reason often direct one to choose one course as the wisest, when it is not at all what one prefers.

125. CHOOSE, pick, select. One picks with greater care than one chooses, and selects with still greater discrimination than one picks. One may choose or pick one or several from among many, but one generally selects a number.

126. CHOOSE, elect. One man or many may choose a person for an office or position; election is always the act of many; a person chosen is generally bound to accept the office; one who is elected has the right of refusal.

127. CITE, quote. One may cite either persons or things; one quotes things only. An author is cited; his works are quoted; authorities are cited by lawyers and historians to strengthen the evidence and to inspire confidence; passages from authors are quoted for purposes of illustration, confutation, or support of an argument.

128. CITE, summon. These words convey the idea of authoritatively calling upon a person to appear. Cite is used in a legal sense; summon is both legal and ordinary in its use. One is cited to appear before a court; one is summoned for the same purpose, but may be summoned as a doctor or friend to a sick bed.

129. CIVIL, polite. Polite expresses more than civil; it is really polished or refined. One may be civil without being polite;an inferior is civil to his superior; one is polite to an equal or to an inferior; civility is the absence of rudeness; politeness goes out of its way to please.

130. CLANDESTINE, secret. Clandestine implies that the thing done in secret is illegal or forbidden; that done in secret may be perfectly right but is done only without the knowledge of others. A secret marriage is conducted without the knowledge of some others; a clandestine marriage, without the knowledge, and, often, contrary to the wishes of others.

131. CLASS, order, rank, degree. Class distinguishes from without; order, rank, and degree, from within. We speak of the laboring class, the merchant class, etc. Order is a more particular division; the word means literally a row. One conceives persons or things arranged in rows according to some standard of equality. Rank distinguishes one individual from another; and there are degrees among those of the same rank.

132. CLEARLY, distinctly. That is seen clearly when the view is unobstructed; distinctly, when one may distinguish it from all other objects. One may see a thing clearly, but by reason of its distance or through a defect of sight it may not be seen distinctly.

133. CLEARNESS, perspicuity. Clearness applied to our ideas denotes the manner in which we understand or perceive; perspicuity denotes how distinctly and plainly we express our ideas. One may understand a question very clearly; but may fail utterly in expressing it perspicuously. A study of subjects which develop the reasoning powers will enable one to see clearly; grammar, and the cultivation of a good style, enable one to express himself with perspicuity.

134. CLEMENCY, lenity, mercy. Clemency is a mildness which prevents one from exercising power for fear of causing pain or suffering; it often defeats the ends of justice. Lenity deals lightly in dispensing punishment and implies an exercise of discretion where withholding a severe punishment may often have a greater effect. Mercy is shown by those in authority to one who is in trouble, distress, or suffering either by his own fault or through other circumstances.

135. CLERGYMAN, parson, priest, minister. In countries which have a national or state church it is customary to restrict the use of the term clergyman to those only who hold the holy office in that church. In polite society the word is often preferred when speaking of any of the clergy of any denomination; parson is really the highest of the three orders of the inferior clergy: parson, vicar, and curate; but the term has passed almost into a nickname; priest is one who is ordained to actually officiate at the altar in distinction to the deacon, who only assists; a minister actually or habitually officiates.

136. CLOAK, mask, blind, veil. These figurative words, derived mainly from articles of clothing, all express the idea of means employed to keep one's acts or motives concealed from others; blind and veil only partly conceal; mask and cloak conceal the whole object; a veil deceives one's self; the cloak, mask, and blind deceive others; we speak of a hypocrite making a cloak of religion; of false friends wearing a mask; of cheating tradesmen using a blind; of prejudice acting as a veil upon one's judgment.

137. CLOG, load, encumber. A clog impedes motion as of a wheel or machine which may be clogged with dirt; loaded is used in the sense of overloaded, as a picture loaded with color, or a tree with fruit; encumbered objects move or act but with difficulty.

138. CLOISTER, convent, monastery. A cloister conveys an idea of seclusion or retirement; a convent of a community or gathering; a monastery of solitude. One shuts himself up in a cloister, gives himself up to God, and surrenders his personal liberty; renounces his worldly habits in a convent; shuns all human intercourse in a monastery.

139. CLOSE, compact. Compactness is produced by a perfect adhesion of parts, while closeness consists in mere proximity or nearness.

140. CLOSE, near, nigh. There is little or no difference between near and nigh; the former is most frequently heard. Houses are close when they nearly touch; near when within sight. Persons are close when they touch; near when within speaking distance.

141. CLOSE, shut. Close is to put close together and is a partial shutting; shut is to close so as to prevent admittance or entrance; we close a door or window when we partly shut it; we shut our eyes by closing the lids; we shut our mouths by closing the lips.

142. CLOSE, conclude, finish. Close brings near to the end; conclude brings actually to an end; finish is to follow to a conclusion according to a certain well-defined plan; we may close by stopping abruptly at any point even though we have not concluded or finished; we may conclude before we have wholly finished.

143. COADJUTOR, assistant. A coadjutor is a fellow laborer who takes higher rank than an assistant or subordinate helper.

144. COARSE, rough, rude. Coarse refers frequently to the materials of which a thing is composed; rough to the surface; and rude to the fashion, make, or finish of things. We speak of coarse food, clothing, feelings, or manners; rough wood, skin, or language; and rude implements, utensils, language, or manners.

145. COAX, cajole, fawn, wheedle. Coax is to plead as with a child or simpleton, using entreaty or supplication in place of reason or argument; cajole is to employ trickery and stratagem coupled with soft words and insinuating manners; fawn is to hang upon in a servile or flattering way; wheedle is to employ knavish artifices as by greedy or covetous persons upon those of easy temper and generous impulses.

146. COERCE, restrain. Coercion implies the use of force or pressure to compel in a certain course; restrain, the keeping within certain bounds. We coerce when we prevent one from doing certain things and compel him to do others; we restrain when we only prevent him from doing some things. So we restrain while we coerce; but do not coerce when we restrain.

147. COEVAL, contemporary. Coeval means of the same age; contemporary, of the same time. As an age is a very long period, these words differ in degree. Things are coeval which extend over long periods; contemporary when existing at the same and, comparatively, short time.

148. COLLEAGUE, partner. Colleague implies the sharing of a common office; partner, of a common interest. Members of Congress and judges have colleagues; business men have partners.

149. COLOR, dye, tinge, stain. A thing is colored when color is put on it, or a description is colored by strong figures, facts, or vivid description; that is dyed when substances are used to change the color, usually said of textiles and fabrics; tinged when lightly touched with color, usually poetical; and stained when an unnatural color is added. In a moral sense that is stained which has lost its purity.

150. COLOR, hue, tint. A hue is a faint or blended color; a tint a shade of color.

151. COMBAT, oppose. Combat, to fight together, is used in speculative and moral matters; opposed is used in private and personal concerns; one's position is combated; one's interests or plans are opposed.

152. COMFORT, pleasure. Comfort is the most lasting form of enjoyment; pleasure is followed or accompanied by suffering; comfort is less than pleasure in detail, but it is more than pleasure in the aggregate.

153. COMMAND, order, injunction, precept. A command is given by one in authority, is imperative and must be obeyed; an order instructs, directs, and must be carried out; an injunction is an explicit impressing upon the mind; a precept points out a clear duty or a wise course.

154. COMMISSION, authorize, empower. We commission another to perform an act for us by expressing our wishes in the matter; we authorize when our personal authority is necessary to empower another to act; we empower another by formally transferring to him the legal right to act.

155. COMMODIOUS, convenient. Commodious contributes to the bodily ease and comfort; convenient well suits the business, the interests, or the plans; a porch, a house, a room, or a chair is commodious; an arrival, a time, a season, or an opportunity is convenient.

156. COMMODITY, goods, merchandise, wares. A commodity is some article which is of the first necessity; goods are those things of value sold by retail traders; merchandise is the belongings of merchants; wares are manufactured articles and are either goods or merchandise.

157. COMMON, vulgar, ordinary, mean. Things may become common, vulgar, or ordinary by frequent use; that which is mean is so of itself and by its nature. What everybody may obtain, use, and enjoy is common and hence of little value; vulgar is opposed to polite and cultivated; ordinary is the opposite of distinguished; mean is that which is inferior or does not rise above the moderate.

158. COMMONLY, generally, frequently, usually. What all do is commonly done; what the greater part do is generally done; what many do or what a few do very often is frequently done; what one or many are used to do regularly is usually done.

159. COMMOTION, disturbance. A public commotion is attended by unusual bustle and excitement; a disturbance interrupts the peace and quiet of a community. A commotion in nature is violent motion of several objects or of the individual parts of an object; a disturbance puts the object out of its natural condition or state.

160. COMMUNICATE, impart. That is communicated which is made of common knowledge or of common enjoyment; what is imparted is given to or shared with another and is usually of interest or importance to both parties.

161. COMPARISON, contrast. Generally we compare things to show their likeness and to learn their true relations; we contrast things to show their differences; we compare two shades of the same color; we contrast two different colors. Comparison brings out like qualities; contrast displays opposite qualities.

162. COMPATIBLE, consistent. Whatever does not interfere with carrying out a plan is compatible with it; whatever conforms to one's ideals or with one's station in life is consistent.

163. COMPENSATION, amends, satisfaction, recompense, remuneration, requital, reward. Compensation is a return, equal in value, for a loss or damage sustained; amends is a return for something faulty; satisfaction is a satisfying return made to another for injuries or damage; a recompense is a voluntary return for some service voluntarily performed; remuneration is a reward based more upon the dignity, fame, or standing of the person than upon the value of the services performed; requital is a grateful return for a kindness done; a reward is that which comes to a man in return for his conduct.

164. COMPETENT, fitted, qualified. One is competent who is qualified by mental endowments and experience; the disposition and character have much to do with one's fitness; one is qualified by acquaintance with the business to be done and by expertness in doing it.

165. COMPETITION, emulation, rivalry. Competition is more the act of striving for the same object as another; emulation is the spirit in which the contest is conducted; rivalry has usually a selfish object in view and marks an unworthy spirit as well as unscrupulousness in the choice of means of attaining the end.

166. COMPLAIN, lament, regret. Complaint is caused by dissatisfaction; lamentation by grief; and regret by pain.

167. COMPLAIN, murmur, repine. Complaint is not so loud as murmuring, but louder than repining. Complaint and murmuring are demonstrated by audible means; repining is generally in secret.

168. COMPLAINT, accusation. A complaint is generally made for the purpose of obtaining redress; an accusation, to bring the guilty to punishment.

169. COMPLETE, perfect, finished. When there is no deficiency, nothing wanting, a thing is complete; when it possesses marked excellence, it is perfect; when there is no omission in it, it is finished. Nothing that man does is, in the proper sense, perfect, but the term is used relatively to indicate a high degree of excellence.

170. COMPLETE, finish, terminate. When we complete a work, we make it what it ought to be; we

finish it when we do all to it that was originally intended; we terminate it by bringing it to an end.

171. **COMPOUND,** complex. A compound is made up of several wholes; a complex, of many parts. A compound may consist of two constituents; a complex consists of many parts.

172. **COMPREHENSIVE,** extensive. Comprehensive is concerned with quantity; extensive, with space. What comprehends much is comprehensive, what extends far is extensive. A comprehensive view of a subject takes in all of the branches of it; an extensive view takes up all of the minute details.

173. **CONCEAL,** dissemble, disguise. We conceal by simply abstaining from making known what we wish kept secret; we dissemble by both art and falsehood in an effort to prevent others from learning what we desire to keep secret; we disguise by cunning, artifice, and labor what we desire to pass unnoticed.

174. **CONCEAL,** hide, secrete. We conceal by keeping something out of sight; we hide it by putting it under cover; we secrete it by putting it in cunningly devised, unfrequented, or least thought of places.

175. **CONCEIVE,** understand, comprehend. To conceive is the simplest of these mental operations as we may conceive only one idea. We may conceive that something is possible without understanding or comprehending how or why; understanding applies to the more familiar subjects of business and daily life; comprehending relates to principles, lessons, and speculative knowledge.

176. **CONCEPTION,** notion. Conceptions are the result of one's own understanding and imagination; they are the product of one's own unaided mental operations upon one's own ideas; notions are the result of information and experience.

177. **CONCILIATE,** reconcile. We conciliate a person when we gain his affection and esteem for ourselves; we reconcile two persons when we unite their esteem and good will to each other.

178. **CONCLUSION,** inference, deduction. A conclusion gathers up all of the arguments and reasoning into full and complete proof; an inference is only partial, indecisive, and special; a deduction is drawn from a number of facts, inferences, and assertions and is final.

179. **CONCLUSIVE,** decisive, convincing. That which is conclusive puts an end to all argument and determines what the judgment shall be; decisive puts an end to all doubt or wavering and determines the will; convincing applies only to argumentative matters and is more particular and special than conclusive. A chain of reasoning is conclusive; a command is decisive; an argument is convincing.

180. **CONCORD,** harmony. Concord is the union of the wills and affections and may exist between persons living apart from one another; harmony is an accord of the minds of persons and is used of those whose daily lives are closely united. In music concord is used in speaking of two or more single sounds; harmony of any number or aggregate of sounds.

181. **CONDITION,** station. Condition in life relates to one's circumstances, education, or birth; station to one's rank, occupation, or mode of life.

182. **CONDUCE,** contribute. Conduce is used of all that brings about a condition or serves the full purpose; contribute serves a secondary purpose and only helps in a lesser degree to bringing about a condition.

183. **CONDUCT,** manage, direct. Wisdom and knowledge are required to conduct; action to manage; and authority to direct.

184. **CONFER,** bestow. Conferring is an act of authority and is properly the act of those in power; bestowing is more an act of generosity or charity and is the act of private individuals.

185. **CONFIDENT,** dogmatical, positive. A confident man has faith in himself, is always ready to act, and is sure of success; a dogmatical man is used to making unqualified assertions, is always ready to speak, and feels sure of being heard; a positive man is fixed to one point, is confident that he has made no mistake, trusts more to his own memory and powers than he ought, and is consequently most often deceived.

186. **CONFIRM,** corroborate. What confirms removes all doubt; what corroborates adds more strength to. A story is confirmed when it is proved beyond all doubt; evidence is corroborated when something is added which strengthens it in some particular.

187. **CONFIRM,** establish. These words differ essentially only in degree,—confirm is not so strong as establish. While stories, reports, rumors, and opinions are confirmed, reputations, principles, faiths, and hopes are established.

188. **CONFOUND,** confuse. A person confounds one thing with another; he is confused or confuses himself. One name is confounded with another; a child often has confused ideas on a subject. When one takes two different accounts to be the same, one confounds them; when one mingles items from one account with another one confuses them.

189. **CONFRONT,** face. Two or more persons confront each other, as witnesses are confronted; one person faces danger, conditions, or the enemy.

190. **CONFUSION,** disorder. Confusion marks the absence of all order; disorder marks the disarrangement of things where order previously existed.

191. **CONFUTE,** refute, disprove. Confute is applied to argumentative matters, an argument is confuted by proving its fallacy; a charge is refuted by proving the innocence of the party; an assertion is disproved by showing that it is not correct.

192. **CONJECTURE,** supposition, surmise. A conjecture is an idea in the mind based upon some trivial suggestion; a supposition is based upon some reasons; a surmise has less foundation than either. We make conjectures regarding events, their causes, consequences, and circumstances; suppositions on speculative points; and surmises regarding the motives or intentions of people.

193. **CONNECT,** combine, unite. Only things of the same kind can be united and in the union all individuality is lost; unlike things are combined or connected and in the combination or connection each remains distinct. Combine indicates a closer union than connect. Houses are connected by a common passage; the armies of two nations are combined; two armies of the same nation are united.

194. **CONNECTION,** relation. Connection indicates the tie that binds two or expresses the condition of being so bound; relation does not define what the association is. There is a relation between one who gives a present and one who receives it; they stand in the relation of giver and receiver. There is a dependence upon one another for one could not be giver unless the other received the gift. But there need be no connection between them.

195. **CONSCIENTIOUS,** scrupulous. A conscientious person is guided by his conscience in all of his acts; a scrupulous person is so in minor or trifling points. Scruple is derived from a Latin word meaning a little hard stone which hurts one when stepped on. A man may be conscientious in the discharge of all of his duty; and an otherwise inefficient servant may be scrupulously clean.

196. **CONSEQUENCE,** effect, result, issue, event. Consequences may follow naturally from the actions of men or from things in which there was no design, plan, or intention; results follow directly from a plan, design, or purpose; an effect is produced by connection with some cause or thing which has effected or brought it about; issue and event mark the final outcome and are used of larger or more vital operations as of negotiations and battles.

197. **CONSIDER,** reflect. One considers common objects; reflects upon speculative and moral matters. We consider before we take action; we reflect when we look back upon what has been done with a view to future guidance.

198. **CONSIDER,** regard. We consider things when we look upon them as they really are, and study them with thoughtful caution; we regard them when we look into them with personal interest. We are accustomed to consider the details of means and matter and to regard the end or object at large.

199. **CONSIGN,** commit, intrust. To consign is to transfer to another for a specific purpose as in consigning goods to another to sell for one's advantage; commit is to put into the hands of another to manage for one, as a merchant commits the management of his business to his clerk; intrust is to place in trust and marks the confidence and trust of the one party, and the responsibility of the other.

200. **CONSTRAINT,** restraint. Constraint applies to the movements of the body; restraint to the mind as well. One is constrained by tight clothing or one's manner is constrained as though bound; one is restrained by motives or fear of consequences.

201. **CONSULT,** deliberate. Consult requires the discussion or consideration by, at least, two persons; one may deliberate alone. We speak and listen when we consult; we hesitate and take time to deliberate. Those who coöperate frequently consult; those who have large measures to decide deliberate.

202. **CONSUMMATION,** completion. A thing is complete when it answers its purpose; consummate when it has attained the highest possible degree. Wishes are consummated; plans are completed. The completion of one's plans may not be the consummation of one's hopes.

203. **CONTAIN,** hold. Hold is employed only for the matter for which hollow bodies have a capacity. In general use contain is regarded as being preferable to hold, and is applied to spiritual or moral content.

204. **CONTAMINATE,** defile, pollute, taint, corrupt. Corrupt destroys the purity; the other terms denote injury to the purity. Taint is the weakest of the words; corrupt and defile are the strongest. The impure contaminates; the gross and vile defile or pollute; the contagious or infectious corrupts; what is corrupted may taint.

205. **CONTEMN,** despise, scorn, disdain. We contemn that which is contemptible in superiors, such as mean acts; we despise or look down upon degraded or inferior persons; one who is scorned is shorn or stripped of honors and derided; in disdaining we consider a person or thing as altogether unworthy. A little, vain mind scorns others, though the noblest minds scorn to do mean or dishonest acts. A haughty or perverted mind treats others with disdain.

206. **CONTEMPLATE,** meditate, muse. We contemplate what is before us, or the present; we meditate upon the absent, or the past; though we may both contemplate and meditate for the future. We muse on circumstances or events which are just happening. There is more of serious thought in meditating or contemplating than in musing.

207. **CONTEMPTIBLE,** contemptuous. A thing, an act, or a person may be contemptible; the manner in which one shows his contempt is contemptuous.

208. **CONTEMPTIBLE,** despicable, pitiful. One is contemptible for vanity or weakness, despicable for baseness and vileness, pitiful for lack of spirit or manliness.

209. **CONTENTMENT,** satisfaction. A contented person wishes for no more; one is satisfied when one has obtained all that was wished for. A contented feeling is permanent; one is satisfied only for the time. Contentment is the absence of pain; satisfaction is a feeling of pleasure.

210. **CONTINUAL,** perpetual, constant. That which is continual is never interrupted; that which is perpetual has no end; that which is constant suffers no change.

211. **CONTINUE,** remain, stay. Continue suggests a state of action; remain, of rest. One continues working; one remains quiet. To remain is involuntary; to stay is voluntary. One remains in prison; one stays with a friend.

212. **CONTINUE,** persevere, persist, pursue, prosecute. Continue contains the general idea of not setting the work or act aside; persevere is to continue with no wish to desist; persist, with a determination not to cease; a plan, a measure or a line of conduct is pursued according to some definite design; an undertaking is prosecuted to carry it out in conformity to some desire or to follow it up to a definite result. One may persist in trifles, but one perseveres in important works.

213. **CONTRADICT,** deny, oppose. One may contradict unintentionally by setting up one statement against another as a lying witness contradicts himself; one denies by purposely asserting the falsehood of another's statement; one opposes by any mode of action or statement.

214. **CONTRIVE,** invent, devise. Devising is more difficult than contriving. A contrivance is simple and easily understood; a device has greater difficulties to overcome and is more complex. Invention is of greater importance and suggests something hitherto unthought of. Thought and combination will contrive and devise, but ingenuity is required to invent.

215. **CONTROVERT,** dispute. We controvert speculative matters; we dispute statements of fact.

216. **CONVERSANT,** familiar. To be familiar with things or subjects expresses a more thorough and intimate knowledge of them than to be conversant with them does. One is conversant with things that have come to his notice frequently; one is familiar with those things which come up in the daily routine of his business. A layman may be conversant with ordinary phases of law, but by no means familiar with all cases or aspects bearing upon them.

217. **CORRECT,** accurate. What is done according to a fixed rule is correct; what is done by an effort of the mind and attention is accurate. An engineer makes an accurate survey, a scientist accurate observations, a pupil solves a mathematical problem accurately. Another pupil may solve a problem and be correct in the use of the rule yet his work may not be accurate.

218. **COST,** expense, price, charge. Cost is the amount laid out on a thing; expense is what the person actually lays out; price is what the thing will fetch or be worth; charge is whatever is to be demanded of the person or thing. In manufacturing the cost of production, a share of expense, and all other legitimate charges, with profit added determine the price.

219. **COVER,** hide. We hide by covering, though we cover without any idea of hiding. Hide always conveys the idea of concealing.

220. **CURE,** heal, remedy. We cure what is out of order, heal what is broken, and remedy by applying remedies.

221. **CURIOUS,** inquisitive, prying. One is curious who carefully examines things for himself; inquisitive when he closely questions others; and prying when curious or inquisitive regarding other people's affairs.

222. **CURSORY,** hasty, slight, desultory, perfunctory. Cursory implies a running over a subject in both a hasty and slight way. A cursory view of a subject may be taken because it is unimportant; a hasty view may lead to error; a slight view to shallowness. A desultory action is a leaping action, not continuous but with intervals; a perfunctory act is one done from duty but without much, if any, interest in the subject.

223. **CUSTOM,** habit. Custom is the frequent performance or repetition of an act; habit results from this frequent performance. A custom is the result of the action of the will; habits are performed involuntarily. We follow a custom and acquire a habit.

224. **CUSTOM,** fashion, manners, practice. The customs of a country are the regulations for the conduct of men in the important concerns of life and are authoritative; fashions are arbitrary, fickle, and subject to frequent change; manners are the expressions of moral feelings and are an index of the culture and refinement of the people; a practice differs from a custom in that it may be frequent or infrequent, regular or irregular.

225. **DEADLY,** mortal, fatal. Deadly is productive of death; mortal terminates in or is liable to death; fatal relates to death and to things which work great mischief. Mortal is past all cure; fatal cannot be retrieved; deadly may be counteracted.

226. **DEATH,** decease, demise. Death is the general term; it denotes extinction of life and may be applied to both men and all animals; decease is a technical term in law and in a popular use denotes a falling off in the number of living; demise is appropriately used of those who, in dying, put off or resign earthly honors or high station.

227. **DEBILITY,** infirmity, imbecility. Debility is a physical weakness and may be constitutional or otherwise; infirmity is accidental weakness and is either physical or mental; imbecility is mental weakness. Debility may be general or local; infirmity is local; imbecility is general.

228. **DEBT,** due. Debt is usually applied to that which is owing from a person; due to that which is owing to a person. One pays one's debts and receives one's dues.

229. **DECEIVER,** impostor. A deceiver practises any form of deception; an impostor deceives by putting on a false appearance. The deceiver plays upon individuals or the public; the impostor usually upon the public at large.

230. **DECISION,** judgment, sentence. A decision is given; it puts an end to all doubt and enables a person to act. A judgment is formed; it respects innocence or guilt, moral excellence or defects of persons or things, and preferable courses of action; it enables a person to think. A sentence follows upon a judgment, is pronounced or passed, and determines the sentiments of those in judgment.

231. **DECLARE,** publish, proclaim. Declare is simply to make known to others, to make clear to them; one may declare privately or publicly, by word of mouth or by writing. We publish in the manner which will make the thing most widely known and cause it to become public property. Proclaiming is always an official act, as when the President issues a proclamation on public affairs. In olden times proclamations were uttered to the public by heralds who shouted out the royal wishes or commands.

232. **DECREE,** edict, proclamation. A decree is a solemn and deliberative act, the decision of one or many, and regulates both private and public matters. An edict is more authoritative than a decree, speaks the will of an individual, usually despotic, and includes such commands as the ukase of Russia. A proclamation contains the command to the people from a constitutional ruler.

233. **DEDICATE,** devote, consecrate. One who dedicates himself to God, promises solemnly to give himself entirely up by shutting out all other considerations; one who devotes himself to the ministry, pursues it as the first object of his thoughts but not to the exclusion of all else. We also devote our time to some work or thing. Consecrate is to set apart for a special object or purpose with religious form or ceremony.

234. **DEDUCT,** subtract. Deduct is a taking away from in a general sense as when one deducts an amount paid from the whole bill of charges; subtract is a technical term of arithmetical calculations, as when a bookkeeper subtracts small amounts from the gross sum.

235. **DEFACE,** disfigure, deform. Deface denotes the actual destruction of what has previously existed; disfigure is to destroy or to so execute as to take away the figure; deform is to change the form of what has existed. A painting or writing is defaced by tearing, smearing, or similar cause; a statue is defaced when the outward surface is damaged, disfigured by the loss of a limb; deformed when made so as to appear monstrous or even unlike the original. The human form is disfigured by loss of a limb or serious burn; deformed, when misshapen.

236. **DEFECTIVE,** deficient. Defective denotes that something is wanting to complete; deficient relates more to the part or thing that is wanting. A book is defective because some leaves are missing; the leaves are deficient.

237. **DEFEND,** protect, vindicate. Defend has the sense of keeping or warding off in a general way. Defense may be made regardless of the station or rank of the defender. A weak man may defend a stronger. Protect has the sense of a defense or shelter by a superior and involves an additional idea of covering, supplying with necessities, and furnishing comforts. Vindicate has a moral sense where a man not only defends himself against charges, but proves his innocence, and restores his good name.

238. **DEFENSIBLE,** defensive. A place or a line of conduct is defensible when it is possible to defend it; the means taken to defend it are the defensive measures.

239. **DEFINITE,** positive. Definite is bounded by a line or limit; positive is placed or firmly fixed. A man's views upon a question are definite when clear and sharply marked so as not to be confounded with others; they are positive when they admit of no doubt.

240. **DEFINITION,** explanation. A definition is correct or precise and marks off the boundaries and limitations; an explanation is ample or general and spreads out a full view of the matter. We both define and illustrate when we explain. We define a word when we show its exact meaning; we explain its use by illustration and contrast with other words.

241. **DEJECTION,** depression, melancholy. Dejection, a casting or hurling down, is stronger than depression, a pressing down. Both of these feelings or states of mind are temporary and passing. Melancholy is constitutional and is a disease. Its effects are permanent.

242. **DELAY,** defer, postpone, procrastinate. Prolong, protract, retard. Delay denotes not to commence action; defer to put off action until another time; postpone is a discretionary act of putting off until a more favorable time; procrastinate is a delay arising from the fault of the person and is a culpable or negligent delaying; prolong is to lengthen to a wearisome extent; protract is to draw or drag along with no activity; retard is to cause a thing to go slowly or to prevent its advance.

243. **DELEGATE,** depute. An office or duty is delegated; the person to whom the task is delegated is deputed to perform it.

244. **DELIGHTFUL,** charming. Delightful is applied to both material and spiritual objects; charming is restricted generally to objects of sense. Music is rather charming than delightful.

245. **DELIVER,** rescue, save. Deliver is to set free; rescue to recover from danger; save to make safe. Deliver and rescue take out of the way of danger or suffering; save is to keep out of the way of evil. We deliver from slight danger; we rescue from great or immediate harm.

246. **DEMAND,** require. We demand by a formal asking for that which is justly our due and about which there can be no question; we require what we wish or expect to be done, but our requisition may be met by questioning or refusal.

247. **DEMUR,** hesitate, pause. We demur or keep back from doubt or difficulty; we hesitate from indecision; we pause from caution or the force of circumstances. We demur and hesitate by an action of the mind; we pause in speaking or in action.

248. **DENOTE,** signify. Denote is to cause to know; signify is to make some sign as a guide to the understanding. Letters or characters may be used to denote grades of excellence or the quality of things; nods, signs, glances, or looks signify wishes or feelings.

249. **DESIGN,** purpose, intend, mean. Design and purpose denote works of greater importance than intend and mean, which are familiar. A design includes many objects or topics; a purpose but one; there is something more methodical and studied about a design; a purpose is proposed or set before the mind seriously; we intend only vaguely; mean is applied to matters requiring but little thought and implies simply to have in mind.

250. **DESIGN,** plan, scheme, project. A design is arranged, studied out, and systematically prepared; a plan is the means by which a thing is to be brought about; a scheme and a project are intricate solutions of rare or extraordinary conditions; a project is intended to cover matters of great moment involving large interests. Design and plan are more practical and less speculative than scheme or project.

251. **DESIRE,** wish, long for, hanker after, covet. A desire demands gratification; wish is a strong inclination for; longing is impatient and continued; hankering is a desire for something placed out of reach; coveting is the desire for something which belongs to another. Hankering suggests a wish for something which has been previously enjoyed but of which we are now deprived.

252. **DESPERATE,** hopeless. Desperate, applied to things, is stronger than hopeless; it expresses the absence of hope to remove evil; hopeless expresses the absence of hope to attain good. One makes a desperate effort; one undertakes a hopeless task.

253. **DESTINY,** fate, lot, doom. Destiny is considered as marking one's station and walk in life; fate regards what one suffers; lot denotes what one gets or possesses; doom is the final and unhappy destiny of life.

254. **DESTROY,** consume, waste. Destroy is putting an end to that which one desires should be preserved; consume is to use up; waste is to consume by using wrongly.

255. **DESTRUCTION,** ruin. Destruction is immediate; ruin is gradual. What is destroyed may be rebuilt; what is ruined is past recovery or restoration. Destruction may be partial; ruin is total.

256. **DESTRUCTIVE,** ruinous, pernicious. An instrument or means is destructive or pernicious; its effects are ruinous. Pernicious agents or influences work in a more limited way than do the destructive.

257. **DETECT,** discover. One detects what another wishes to conceal; one discovers that which is concealed without wicked intent.

258. **DETER,** discourage, dishearten. Deter is to frighten away from a thing and one is deterred from beginning a thing; one is discouraged or disheartened from continuing a work. An impatient man is easily discouraged; one who lacks courage or perseverance is disheartened.

259. **DETERMINE,** resolve. Determine is an act of the judgment and follows examination and choice; resolve is an act of the will and follows determination. We determine what is best to be done and resolve to do it.

260. **DEVIATE,** wander, swerve, stray. Deviate is to turn out of the way or direct path; wander is to travel aimlessly without regard to paths or directions; swerve is to turn abruptly and suddenly from a course; stray is used in a bad sense either measured by morality or by consequences.

261. **DEVISE,** bequeath. Devise is to give lands or real estate by a properly attested and witnessed will; bequeath is to give personal property after one's death in a less formal but no less legal way.

262. **DICTATE,** prescribe. Dictate denotes greater authority than prescribe. Dictate is more than command; there is no sense of command in prescribe

though a rule of action or conduct is laid down for the prescribed to follow. One may dictate a line of action without giving any reasons therefor; prescription has the sanction of reason.

263. **DICTION,** style, phrase, phraseology. Diction is concerned with a proper observation of grammatical rules, proper use of words, and a clearness of writing such as may be attained to by any student; style deals with niceties and elegancies of expression, such as only the masters of the language display; phrase has to do with the use of single words; phraseology with a succession of phrases.

264. **DIE,** expire. Die denotes the extinction of life; expire the last act of life. Trees and plants die, but do not expire; animals which breathe air, and some objects which depend upon air, such as lamps, expire.

265. **DIFFER,** vary, disagree, dissent. Differ is the most general and indefinite term. We differ from any cause or in any degree; we vary in only small matters. It takes two or more to differ; one may vary; we disagree in matters of personal interest and in practical affairs; there is always more or less ill-humor and feeling in a disagreement; there is also hard feeling among those who dissent in matters of speculation or opinion.

266. **DIFFERENCE,** variety, diversity. A difference may exist between two objects; variety requires several; diversity exists in the taste or opinion.

267. **DIFFERENCE,** distinction. The difference lies in the things themselves; the distinction is the act of the person who notes the difference. The distinction between two objects lies in the difference between them.

268. **DIFFERENCE,** dispute, altercation, quarrel. A difference is a less serious and personal matter; a dispute suggests many angry words and much ill-feeling; an altercation is a wordy dispute, with wide difference of opinion, and much abusive language; a quarrel is the most serious and involves all forms of violence.

269. **DIFFERENT,** distinct, separate. Difference is opposed to likeness; no objects which are alike can be different. Distinct is opposed to identity; two objects exactly alike may appear to be distinct when seen clearly. Separate is opposed to unity; two bodies which are united are not separate.

270. **DIFFERENT,** several, various, divers, sundry. Different describes the quality of things rather than the number and may be used of two; several denotes split up into many; various expresses a great number and a great diversity; divers denotes many different objects; sundry denotes many things widely separated.

271. **DIFFERENT,** unlike. Things which are different have some points of resemblance and may be compared; things which are unlike are wholly so and do not admit of comparison.

272. **DISPEL,** disperse. To dispel is to drive away a thing, so that it does not return; to banish permanently, to eliminate completely. Knowledge dispels ignorance; and light, gloom. More force is implied by dispelling than in dispersing. Both are used figuratively. The thing itself may be destroyed if dispelled; while to disperse may mean merely to destroy the cohesion of its parts. To disperse does away with the completeness as a whole; to distribute elsewhere, or scatter, but not to remove entirely; yet to disperse is a voluntary action; while the act of scattering may be involuntary and without method or plan.

273. **DISPENSE,** distribute. To dispense is to confer upon, in the sense of giving out in different directions. But it has no special reference to the one who does the bestowing. One may say Nature dispenses her bounty to all. To distribute is a definite action toward individual points, as something which comes directly from giver to recipient. To dispense is also to do without a thing,—as "we can readily dispense with that."

274. **DISPLEASE,** offend, vex. Displease is the opposite of please, and more nearly respects the inward state of mind; while the act of offending is outwardly to give occasion to provoke the feeling. Simply not to please is a negative quality; while to offend is to cause a sense of displeasure in a distinct and definite way. Vex has the same signification as offend with the additional sense of repeated actions tending to aggravate not only one's displeasure but the actual offense.

275. **DISPLEASURE,** anger, disapprobation. Displeasure is a state of irritation of mind or feeling caused by the conduct of others. It is always produced by an adequate cause, real or supposed. Anger may result from continued displeasure, and is a state of mind aggravated by a continuance, perhaps, of offensiveness. Displeasure is mild, while anger is harsh. Disapprobation is an opposite opinion from approval. Displeasure is always felt at what has passed; disapprobation may be felt also with regard to things about to take place.

276. **DISPOSE,** arrange, digest. To dispose is to assign a place to each of several things; to arrange implies a more thoughtful action. Disposal is a personal act. Troops may be disposed but ideas may be arranged. Things not wanted are disposed of; books are arranged with regard to subjects or size. To digest is the act of assimilation, the gathering together of things with a fixed design in so doing. To digest information implies an intellectual process; while disposal may be simply to set aside or put apart.

277. **DISPOSITION,** temper. Both terms refer to the mind and its bias. Disposition is the natural or prevailing tendency of the mind as a whole, and is a permanent state. Temper relates only to the bias or tone of the feelings, and is transitory. A disposition inclining to right living makes a man a useful member of society; a good temper may make one acceptable and agreeable but not necessarily useful. A good disposition will go far toward correcting the errors of temper; a bad one will leave no chance for amending the temper.

278. **DISPOSITION,** inclination. Disposition is used here in application to the particular frame of mind, rather than the general, as in the previous instance. A disposition may be indulged in; while an inclination may be yielded to. A disposition to do something applies to the state of the whole mind at that time; an inclination may be a particular part of one's general disposition. One may be disposed to be unfriendly; but have an inclination to be studious.

279. **DISREGARD,** neglect, slight. To disregard is the act of not heeding, while neglect is the act of not choosing. To disregard means a settled mental purpose to diverge from a stated plan. To neglect is to omit to do an act, as from forgetfulness or postponement. What is disregarded is purposely passed over after being seen; what is neglected is often not seen or thought of at the time. To slight is to pass over lightly, easily, casually.

280. **DISSENSION,** contention, discord. Dissension is a state produced by a collision of opinions, peculiar to bodies of men; while contention is a collision of interests, but related to individual action. Selfishness is the main cause of contention; a disposition to be opinionated causes dissension. Discord is mainly caused by ungovernable temper. Inharmonious collision between two unrelated or unsuited chords in music makes discord. Contention implies greater action than the state of being discordant or in dissension.

281. **DISTANT,** remote, far. Distant implies standing apart from, used in reference to great space; far is used relatively, and only of space which is ordinary. Distant applies to bodies at rest, while far may be attributed to bodies which are or are not stationary. Remote is an implication of superlative distance, something so far that it is out of sight and inaccessible. A place may be quite definitely distant; a bird flies indefinitely far.

282. **DISTINGUISH,** discriminate. Distinguish is to regard things as to their entirety or their divisibility. One distinguishes as to quality by the senses; while one discriminates with the understanding only. The latter is a definite action; while ability to distinguish is indefinite.

283. **DISTINGUISHED,** conspicuous, noted, eminent, illustrious. A thing is distinguished for a certain quality when that thing acquires distinction or bears the mark of it, though only by comparison. Anything is conspicuous with regard to its being seen; it is distinguished only as it is separate and distinct from others. A person is noted for some certain quality, without being necessarily either distinguished or conspicuous. One may be either one or all these three for attributes which are good, bad, or indifferent; but the terms eminent and illustrious apply only to good qualities and praiseworthy actions. A person may be eminent for virtue or attainments; and these things make his name illustrious.

284. **DISTRESS,** anxiety, anguish, agony. Distress is the state one may find himself in when there seems no chance for escape. Distress is produced by a present evil, from an outward cause, with either old or young; anxiety or anguish can only belong to riper years. Anxiety is often imaginative; anguish and agony are forms of the more severe degrees of distress. Anguish usually follows reflection upon an evil which is past; while agony is felt by a person witnessing what comes directly under his observation.

285. **DISTRESS,** perplex, harass. Distress is that which brings to straits, or binds so as to hamper action. To distress is to cause to be thrown into discomfort by a condition; while to perplex is to puzzle

or bewilder or entangle. To harass is to cause a distressed condition repeatedly or continuously. One may be perplexed in understanding, but he is harassed intellectually by baffling and recurrent causes, which may throw him into a state of distress.

286. **DISTRIBUTE**, allot, assign, apportion. To distribute is a term applied to the portioning out of a thing in more than one direction, while to allot is to dispose for a specific reason, as for the sake of usefulness or order or beauty. To assign is definitely to readjust as to merit; to apportion is to divide by some fixed rule that is meant to be uniform and fair.

287. **DISTRICT**, region, tract, quarter. District is a definite tract or space specifically set apart. A region is a more indefinite place, of larger dimensions. The former may apply to a small part of a region, while the term tract is applied to a smaller portion still. A quarter is used merely to designate a direction, and is the most vague term of all. A region is usually spoken of in connection with weather or climatic conditions. All are terms relating to area.

288. **DISTRUST**, suspicion, diffidence. Distrust is the opposite of a state of trustfulness, and may be a negative feeling, while suspicion is an active and positive conviction of the evil in a matter. When a person feels a lack of trust in his own powers or qualities, the term used is diffidence, while distrust may be felt either of ourselves or of others. The condition of distrustfulness is a particular state; that of suspicion is a matter of habit.

289. **DISTURB**, interrupt. Disturb is to cause to be disordered and thrown into a state of commotion, either internally or externally. When such confusion comes positively and outwardly, it is an interruption. Disturbance depends upon the character or temperament of the individual; interruption, or breaking in upon a thing so as to stop progress, would affect any one of an indefinite number. To disturb is to cause the state of rest to exist no longer; to interrupt is to destroy the evenness or regularity of a course.

290. **DIVIDE**, part, separate. Divide is to put into parts or asunder, though the separation of the parts of a thing may still leave them connected; as a stream may divide a state, by running through it, while a mountain merely separates the parts of a country. To divide applies to things only; to part or to separate applies to persons as well. People may part without coming to a separation; and the moment of parting is often more painful than the separation to follow.

291. **DIVIDE**, share, distribute. To divide has the sense of a division into parts, not extending beyond the thing divided; distribution or sharing extends as well to the purpose of the action. To share is simply to give or receive an apportionment; to distribute applies to giving only, as to a definite number of persons.

292. **DOCILE**, tractable, ductile. To submit one's judgment or inclinations to the influence or power of another is a docile condition, and is applied to the will, mainly. To be tractable is one form of docility,—that of making the conduct conform to judgment. To be ductile is another form of being docile,—that pertaining to matters of character. Docility and tractability are applicable either to mankind or brutes; ductility as applied to the mind or its powers may be used only of persons.

293. **DOCTRINE**, precept, principle. Doctrine relates to a thing taught, while precept is a thing laid down. Doctrine presupposes a teacher; precept a superior with authority. A principle is the starting point of a theory or school of mental effort; while the doctrine is composed of several principles. The principle lies in the thing itself; the doctrine is framed by some one, and the precept also implies individual and preliminary action.

294. **DOCTRINE**, dogma, tenet. A thing which originates with a teacher is a doctrine; a dogma is the thing thought, or admitted to be the truth, and may lie with a number of individuals. A tenet is a thought, or series of them, held or maintained by one or more. Doctrines rest on authority of the originator; dogma upon authority of the church or body holding such principles; while a tenet rests upon its own merit for support.

295. **DOUBT**, question. Doubt respects what is believed about that of which one has two opinions; question relates to a deviation from such a belief. Doubt is mental, and denotes a withheld decision; to question implies an inquiry into a matter, with a demand for proof which will assist in a decision.

296. **DOUBT**, suspense. To be in doubt is to lack the necessary evidence for belief in a matter; to be in suspense is to fail to possess certainty regarding something maintained. Doubt interrupts progress towards a desired truth; suspense puts an impediment in the way of progress.

297. **DOUBTFUL**, dubious, uncertain, precarious. The state of being doubtful admits of doubting only; while being dubious relates to events and things speaking for themselves, and causes suspense. The meaning is very similar, both having distinct relation to the person holding an opinion on a matter. Uncertain and precarious are applied to qualities of the things themselves, as a rule. Precariousness usually depends upon the will or humor of another, and is actually the highest form of uncertainty. It is applied to that which is dependent to an extent upon future casualties. Uncertainty is a more negative quality of variance in a state of doubt.

298. **DRAW**, drag, haul, pull, pluck, tug. To lay hold of a body and put it in motion toward one's self is to draw it; to drag it is to draw it with violent effort. To haul is, commonly, to drag it with still greater violence. To pull is a maintained effort to draw without effect or motion; to pluck is, literally, to pick out of, or twitch apart from. To tug is to pull with violent effort; as, after a long pull for the shore, the oarsmen may still tug at the oars.

299. **DREAM**, reverie. To dream is to pass through subconscious experience, commonly in sleep, a mental process occurring when the imagination is in a sound state. A reverie may come while a person is awake, with the imagination in more or less of a disturbed condition.

300. **DREGS**, sediment, dross, scum. Dregs are the worthless part which may separate from a liquid. Sediment is the matter, not necessarily worthless or dirty, which may settle at the bottom. Dross is a variation of the term dregs, more often applied to metal-working. Scum is the same as froth, or that which rises to the surface. Dregs and sediment settle of themselves; but scum and dross signify some preliminary process of evolution.

301. **DULL**, gloomy, dismal, sad. The removal of brightness or spiritedness of a thing constitutes its dullness; and implies literally a lack of light. The state of being gloomy denotes not only the lack of perfection in dullness, but actual tarnishing. A place as gloomy as possible may be said to be actually dismal, simply extending and emphasizing dullness which has passed the gloomy stage. Sad is more an attribute of moral states than of physical; and may indicate a heart-wound or pained feeling.

302. **DURABLE**, lasting, permanent. Durable is said of things intended to remain a shorter time than lasting, and always of things material. Lasting is used of things spiritual. That which perishes quickly is not durable; that which ceases quickly is not lasting. Permanent is, literally, remaining to the end.

303. **DURABLE**, constant. Durable is the attribute of things, while constancy pertains to either persons or things. What is durable is inherently so; what is constant is so from temperament. The durable lasts long, it may be; but the constant is possessed of uninterrupted durability.

304. **DURATION**, time. Duration is commonly the portion of time during which a thing exists; continuance in time, but has reference to the beginning and ending of the existence of a thing. Time is infinite duration or its measure.

305. **DUTIFUL**, obedient, respectful. Dutiful means a fullness of duty, and is independent of all circumstances. Obedience and respect are relative terms, and merely modes of being dutiful. Respectful is a term of greater latitude than either of the others.

306. **DUTY**, obligation. Duty is that which is due from one being to another. Obligation denotes the bond or necessity entailed in the discharge of the duty. A duty is not necessarily lasting. An obligation is compulsory. Love may be the impelling power in the carrying out of a duty; necessity, or a sense of honor, is more likely to be the force behind an obligation.

307. **EAGER**, earnest, serious. Eager implies to be ardent in the pursuit or accomplishment of a thing. Eagerness is largely based upon impulsive or thoughtless action. Earnestness applies more to a settled purpose, a state of mind, to do a thing, as a characteristic of the temper of mind. Seriousness does not go to the extreme of solemnity, but is literally without laughter. Earnestness indicates a state of being ardent in the pursuit of an object; seriousness expresses a fixed intention in the same direction, but with less warmth.

308. **EARNEST**, pledge. An earnest is a token or assurance of what may be expected. A pledge, as of one's good faith in a matter, is the bond or guaranty that the duty or labor will be performed; but earnest

applies more to the confidence inspired than to the tie by which it is either affirmed or brought to pass.

309. **EASE,** quiet, rest, repose. Ease respects a motionless state of exemption from pain, noise, or other disturbance, and implies negative and apathetic pleasure and agreeable calmness;—the stationary state of being easy following a period of unrest. Quietness is an attribute of this state, with particular reference to the absence of noise or outside violence. Quiet denotes a lying-down state or condition; while rest simply applies to cessation from motion. Repose is the degree of rest enjoyed after its interruption.

310. **EASE,** easiness, facility, lightness. Ease and easiness relate to the abstract state or condition of ease in thing or person. Facility relates to that which is done; as one may say, a person's facility is determined by comparison of his ability with that of others who are less skillful. We judge of the easiness of a thing by comparison of it with others more difficult. Lightness and ease are both said of what is to be borne. That which presses in any form is not easy; that which presses in a sense of weight does not possess lightness. To ease is to relieve a person of pain or labor. To facilitate is to make a course or progress more certain; and to lighten is to remove a burden in the sense of weight.

311. **EASY,** ready. Easy implies a sense of freedom and absence of obstruction looking towards action in ourselves; to be ready indicates a preparedness, a willingness and a disposition to go forward immediately and to do. The first relates only to the thing or manner; the latter to the person who does the thing.

312. **EBULLITION,** effervescence, fermentation, ferment. Ebullition denotes literally a boiling forth, and is drawn from a physical application of the process resultant from the effect of heat upon a liquid. Fermentation is a process more gradual than effervescence, which is ebullition in moderation. A ferment implies that a process has resulted tending to make a new state or a thing distinct from a former one.

313. **ECCLESIASTIC,** divine, theologian. An ecclesiastic is a person connected with or occupying a definite station in a religious order, though not in person performing any particular office in that station. A divine actually performs the office of teacher or preacher. A theologian is simply a student in theology.

314. **ECLIPSE,** obscure. Eclipse is a state of the shutting off of light from a thing, and implies a body completely out of view from that cause. Obscure is only a relative term and may apply to a partial eclipsing of light or power, as regarded in a general sense. To obscure a thing is to render less distinct by intervention of shadow; to eclipse is to hide wholly.

315. **ECONOMICAL,** saving, sparing, thrifty, penurious, niggardly. Economical is the attribute of not expending unwisely or unnecessarily; saving is keeping resources in an undisturbed state for future use, a laying by or setting apart with care of a reserve fund or quantity. Sparing is holding back that which ought naturally to be expended. Thrift is the prominence of that quality which arises from the habit of saving; to possess it makes a person thrifty or thriving. To be niggardly is to be close, to narrowly fall short of withholding altogether. To be penurious is to incline to niggardliness as regards one's self,—to actually suffer from the penury caused by not spending enough of one's own money or resources.

316. **ECONOMY,** frugality, parsimony. Economy implies management in expending, and a regulated manner of putting forth resources. Frugality denotes a prudent or temperate management of resources. Parsimony is a more negative term, relating to a simple forbearance in spending. One who is parsimonious has only the object of saving in his attitude. One who is frugal may spare expense upon himself and be liberal with others to the point of extravagance.

317. **ECSTASY,** rapture, transport. Ecstasy indicates a passive state of being beside one's self or out of one's mind, temporarily; a mental tension, and unusual elevation of spirits. Rapture is a state which does not, like the former, paralyze the faculties, but may call the faculties into action or expression. Ecstasy and rapture are always pleasurable and arise from pleasurable causes. Transport is a state of extreme mental activity which may relate either to joy or anger, pleasure or pain.

318. **EDIFICE,** structure, fabric. Edifice is a term relating to a house already made and finished, and is always architecturally applied. The word structure is used when the act of raising the edifice is considered. Fabric is a term applying to the simple framing, designing, or contriving of a thing to be erected or created.

319. **EDUCATION,** instruction, breeding. Education comprehends not only instruction (the communication of ideas) and breeding (the outward conduct or manners), but the formation of the mind and the establishment of principles. Instruction makes one more completely educated; breeding makes one more agreeable; while education makes one better in every direction. Travel and other things may add to education as neither simple instruction nor breeding can. The lack of breeding merely unfits a person for the society of the cultivated. Instruction withheld is more or less inconvenient though not fatal to worldly advancement; but a total lack of education, considered broadly, may be detrimental in every way.

320. **EFFECT,** produce, perform. What is effected is both performed and produced. To produce is to bring something into being, and performing is to carry a thing through to the end; while to effect is to produce by performing something. That which is effected is done according to a definite design. That which is produced may follow only incidentally.

321. **EFFECTIVE,** efficient, effectual, efficacious. Effective denotes being capable of effecting something. Whatever is efficient is that which is capable of effecting something. That which is efficacious or effectual signifies having the power to effect, or to bring about the effect. When an end or outcome is effectual, the means to that end must be termed efficacious; and it is unnecessary to adopt further measures when methods are proved to be effectual.

322. **ELDERLY,** aged, old. Elderly signifies approaching a state of age. Aged denotes a still greater degree of elderliness; and old implies still more age than either.

323. **ELOCUTION,** eloquence, oration, rhetoric. Elocution relates to the manner of delivering speech. Eloquence denotes the matter delivered, and lies in the person who does the speaking. Oratory deals with the mode or style of expression. Rhetoric is an amplification of oratory, dealing with the theory of the art of which oratory is but the practice. Elocution is therefore requisite for an actor, and eloquence more for a speaker, though of course oratory is most desirable for both.

324. **EMBARRASS,** perplex, entangle. Embarrass is to hamper or place impediments upon manners or circumstances affecting one's self, want of prudence or presence of mind being most common causes. One is perplexed when diverse interests or conditions cause confusion. Perplexities may arise from one's personal actions or from outside causes. Entanglements arise solely from outside sources. Pecuniary troubles embarrass; for example, perplexities may come from counter advices or counsels; while lawsuits entangle.

325. **EMISSARY,** spy. Emissary is literally one who is sent forth, or sent out. A spy is one who takes a station from which he sees things and takes cognizance of events or objects for future use. An emissary is sent out to mix with people or to associate with whoever may serve his purpose best to sow seeds of dissension or policy. A spy keeps at a distance and maintains secrecy as to his movements.

326. **EMPIRE,** reign, dominion. Empire is a term comprehending the idea of an exercise of sovereignty, allied to the idea of a definite reign by a ruling power. Empire is applied to people or nations, but a reign applies to the individuals who are in power. Dominion applies to the personal act, whether of a ruler or private individual. Force of law gives a potentate the reign over a people.

327. **EMPLOY,** use. To employ is to apply to some particular use or purpose; to use is to derive a benefit from such employment. One always employs when he uses; but does not always use what is employed. Persons as well as things may be employed; use is applied to things only.

328. **EMPTY,** vacant, void, devoid. Empty implies lacking or wanting, and is quite similar in meaning to the term vacant. Either a house or a seat is said to be empty or vacant when it lacks an inhabitant or an occupant. Void is slightly at variance with these terms, always used as a qualifying word but never prefixed as an adjective. A mind which is vacant of ideas may be termed void of reason; and a stare absolutely devoid of expression is said to be a vacant one.

329. **ENCOMIUM,** eulogy, panegyric. Encomium is a form of praise, in the usual sense, applied to an object at the time unconscious of such sentiments. A eulogy may be praise bestowed upon a hero of another age or country, or the characters or actions of men in general. Great achievements may be accorded encomiums; great men are given eulogies. A panegyric is,

literally, a solemn, formal oration, spoken before a stated assembly about the person or character of an individual.

330. **ENCOURAGE,** animate, incite, impel, urge, stimulate, instigate. To encourage is to inspire with courage or animate with stout-heartedness. To animate is to put spirit into a matter. To incite is to put into action or motion toward an object. To impel is to cause a thing to be advanced toward an end. To urge is to cause to be set into work or action. To stimulate is closely allied to the term "to inspire," relating rather to the putting forth of a goad, or incentive which encourages action. To instigate is to cause to be put forward and literally to spur onward. All are applied to the process of calling into action and bringing things to a specific end.

331. **ENCOURAGE,** advance, promote, prefer, forward. To encourage in another sense is the same as to promote,—to put forth as an impelling force. To advance is to bring near to a point or end. All three words are applicable either to persons or things. To prefer is to differentiate in favor of a certain person above others, and applies usually to the advancement of a person through outside efforts. To promote is to move forward or upward in degree, and is applied either to projects or persons. To forward a thing is to put it ahead one or more steps farther than its previous position. All these terms may be employed in certain phases in the consideration of either persons or things, and few other groups of allied words are more interchangeable in modern writings.

332. **ENCROACH,** intrench, intrude, invade, infringe. To encroach is to creep upon or into a situation unobserved, denoting an unauthorized procedure and, often, an imperceptible or insensible action. To intrench is to dig beyond one's own environment into that belonging to another. Intrude and invade are words denoting an unauthorized or unwarrantable entry into another's territory,—the former in a manner suggesting "thrust in upon" and the latter a "marching against" a position. To infringe is to break in upon, as, for example, an infringement of law or of rights. Intrusion implies an unexpected advance upon good manners, and invasion means an equally violent assumption of position beyond that just occupied.

333. **END,** terminate, close. To end is to bring a thing to its termination. To close is to end gradually. To terminate is to end finally. All are expressive of the conveyance of a thing to its last point.

334. **ENDEAVOR,** aim, strive, struggle. To make attempts to any end, or to set about doing a thing, is to endeavor to do it. To aim to do something is to have an objective beyond the immediate action. To strive is to qualify the act of endeavor, in the sense of earnestly doing it. To struggle is to find difficulties in the way of doing, to strive earnestly in contending with such difficulties. As, we endeavor to correct faults, aiming at perfection, by striving to conquer bad habits and struggling to overcome temptation.

335. **ENDEAVOR,** effort, exertion. An endeavor is, literally, a trying to do a thing, from a sense of duty. Effort is applied to the actual bringing out of the power to do, while exertion applies to the putting forth of that power. The latter is used as applied to nations as well as individuals; but endeavor is commonly an effort applied to individuals only.

336. **ENERGY,** force, vigor. Energy signifies the power of producing positive effects from inward force. Force is similar to the verb compel, as one may say he is forced to the conclusion through circumstances. Activity is connected with the idea of energy, and capability with that of force. Vigor is a term given to power exercised in a flourishing manner, usually applied to youthful energies.

337. **ENLARGE,** increase, extend. To enlarge is to make wider and increase in extent or dimension. To increase is to grow to a thing, signifying a greater size by reason of the junction of something else. To extend is to increase the length or the space of a thing. The bounds of a property are said to be enlarged; or the strength of an army increased; while views or prospects are seen to be extended.

338. **ENORMOUS,** huge, immense, vast. Enormous means extensive beyond the rules of law, order, or what is usual. Huge is, properly speaking, that quality indicating uncommon height; and these two are applicable to magnitude. Immense relates to excessive quantity and number, expressing more than vast. Immensity expresses extent exceeding all calculation; whereas vastness denotes simply a large or an unusual excess.

339. **ENORMOUS,** prodigious, monstrous. Enormous, signifying an excess of bounds, is to be contradictory of all rules and standards of judgment; while that which is monstrous contradicts nature and does violence to our senses and understanding. What is prodigious raises the mind beyond the ordinary course of thought, and excites astonishment and wonder.

340. **ENOUGH,** sufficient. Enough is literally a satisfying quantity of a thing. What is sufficient is that which is made or suited to the purpose. Enough may be applied to desires which have been well satisfied; sufficient to the ample supplying of one's wants. Enough is said only of the physical objects of desire; sufficient is said of that which serves its object.

341. **ENROLL,** enlist, register, record. To enroll is to place in a condition of enrollment, as in a manuscript or book form. To register is the act of placing in a written or listed form. To record is, literally, to bring back to mental consciousness, or to the memory, a fact or series of them by means of memoranda. To list, or enlist, is to set down more than one item in the form of a list. Both enroll and enlist imply a setting down of several things in an orderly manner in written or printed form.

342. **ENTERPRISING,** adventurous. Enterprising signifies to engage in that which is extraordinary or out of the common, and relates to the understanding. Adventurous means that enterprise which is hazardous or involves risk, venture, or trial. The enterprising conceive great attainments and enter upon the pursuit of difficult projects. The adventurous seek to do that which is new and dangerous.

343. **ENTHUSIAST,** fanatic, visionary. An enthusiast is one who is affected inwardly with extraordinary fervor, while a fanatic or a visionary expresses the same fervor in outward marks or singularities of conduct. Fanatic is a term often applied to those who, under stress of religious frenzy, are possessed of an intemperate zeal to insist upon others following their leadership. Visionaries are those who from any cause see or pretend to see visions as an inspiration. The influence of an enthusiast may proceed from earnestness of heart-purpose; but fanatical or visionary folk are governed by the fancy.

344. **EPITHET,** adjective. The rhetorician speaks of an epithet; the grammarian calls it an adjective. Epithet considers the meaning and force of the word; adjective is a class-name under which to place the word grammatically. So we would speak of a gentle, harsh, or ennobling epithet; but not of a gentle, harsh, or ennobling adjective. In the expression "Father Abraham," father is an epithet, but not an adjective.

345. **EQUAL,** even, equable, like, alike, uniform. Equal signifies like in degree, quantity, number, dimensions, or other qualities, and opposed to difference of any kind. Evenness is applied to the surface or the position of bodies, or may be used in a figurative sense, as to say one has marked evenness of temper. Equable means simply being susceptible of equality. Like or alike are terms used in connection with accidental qualities; and the term uniform signifies one form, and is applied to conduct, habits, or character.

346. **ERADICATE,** extirpate, exterminate. Eradicate is to get out by the root, to remove materially. Extirpate is to destroy thoroughly by removing the stalk. Exterminate is to cancel wholly and put a thing completely out of existence, and is used with regard to whatever has life, and denotes a violent and sudden action. Pestilence may extirpate, while the sword exterminates.

347. **ERROR,** mistake, blunder. Error is a term signifying the act of wandering from a fixed course, or going astray. A mistake is taking amiss or wrong, or going blindly into a path that is not the right one. Error is strictly opposed to truth, and is applied mainly to moral wrongs. Blunder is an error of action, while a mistake is an error of choice. A mistake is a thing that should be rectified. An error is something that may be forgiven. A blunder may or may not have to be set right.

348. **ERROR,** fault. While the error lies in the domain of judgment or conduct, a fault lies with the will or intent. Faults are things to be corrected, and errors are things to be treated. Error is a departure, however slight or infrequent, from a right line. Fault applies to that which is habitual.

349. **ERUPTION,** explosion. Eruption signifies a breaking forth or coming into view by a sudden bursting out. Explosion is the bursting of a thing with a noise; hence of flames there may be an eruption of a flaming substance, but an explosion of the gases or of gunpowder, and volcanoes have eruptions which are often attended by explosions as well.

350. **ESCAPE,** elude, evade. To escape is to get out of, or away from, without implying what means were

used. To elude is to avoid personally, in the sense of avoiding something which is impending. To evade is to slip away cleverly for the purpose of avoiding something. These are commonly terms applied to avoidance of disagreeable things. One is said to elude a punishment, but to evade a law.

351. **ESPECIALLY,** particularly, principally, chiefly. Especially refers to something which, out of many things, is superior to all. This meaning, in an exclusive or superlative sense, is peculiar, also, to the term particularly. Principally and chiefly refer in general to the superiority of some things over others, the former being less general than the latter. Especially is of stronger import than particularly.

352. **ESSAY,** treatise, tract, dissertation. Essay denotes an attempt or trial to set forth the outline or arguments supporting a subject, more commonly applied to small and detached pieces affording room for later amplifications. A treatise is a more systematic treatment of a subject, conveying the idea of something labored or exhaustive, and follows a more methodical form. Tracts are "occasion pieces," usually brief, and seldom surviving the occasion which gave rise to them. Dissertations are arguments advanced to support disputed points, or subjects about which there is considerable speculation.

353. **ESTEEM,** respect, regard. Esteem is to set a specific value upon an object, and is produced by intrinsic worth. Respect is the feeling engendered by some particular mark of distinction, as superiority of talent or attainments. Regard is affection blended with esteem, and flows directly from the heart. Like respect it is limited to a favored few. All these embrace a favorable attitude of mind towards the object.

354. **ESTIMATE,** compute, rate. To estimate is to get at the sum of a thing either by figurative or literal calculation,—a variation of esteem. To compute is personally to put together and think out by the specific process of assembling items in related form. To rate is to make a mental estimate of a thing by comparison, deduction, or natural sequence. All are applied to the mental operation by which sum, amount, or relative values are determined.

355. **ETERNAL,** endless, everlasting. Eternal is that which pertains to a state of which it can be said it has never begun and will never end, as set above time. Endless lies within appreciable time because it applies to something which began but which has no ending. Everlasting presupposes something which could have neither cessation nor interruption, and is more powerful than the term endless.

356. **EVADE,** equivocate, prevaricate. To evade is to avoid by a going around,—to escape by shrewdness or an artful mode, as by turning the subject or shifting, perhaps argumentatively. To equivocate is to employ a baser means of avoidance, and to make use of expressions tending towards a misleading. To prevaricate is to make use of actually and purposely contrived untruths, or vague statements conveying a wrong impression; or to employ loose and indefinite expressions, as in the case of criminals who want to shift responsibility for wrongdoing.

357. **EVASION,** shift, subterfuge. Evasion is used only in a sense other than good, with shifting and subterfuge as gradations of it. To shift is to put off a burden or responsibility upon some one else. Subterfuge is literally to fly away from in an underneath or concealed manner, suggesting recourse to screen or shelter. No truly courageous person will try to shift or to make use of subterfuge, and no candid one will consider making an evasion; all these being resorted to for low or paltry purposes.

358. **EVEN,** smooth, level, plain. Even is used of a surface or substance which is free from great or marked roughnesses or irregularities. Smooth signifies something which is wholly free from anything rough or irregular. Level, applied to a piece of land, means flat, or a surface free from protuberances or depressions. Plain is a term possessing the last mentioned qualities, and, in addition, is uninterrupted or untraversed, within the reach of vision, by water, woodland, or other deviation from an absolutely level-appearing state.

359. **EVENT,** incident, accident, adventure, occurrence. Event is that which falls out, "turns up," or transpires. Incident is something occurring in the course of events, as a collateral part of a natural or expected system. Adventure is that which happens to a person, or befalls in an unexpected or surprising manner. Occurrence is something running or coming naturally in the way, yet is a little out of the placid course of things. Accident is the thing which happens or transpires, always spoken of that which has been, an event occurring without rule or intention, and something which could not have been prevented.

360. **EVIL,** ill, misfortune, harm, mischief. Evil is comprehensive of those qualities which are not good, and ill is a contraction of or modified form of evil. Misfortune is a minor evil and depends upon circumstances. Harm and mischief are species of lesser evils; the latter an evil from some definite disturbance and the former from circumstances which may not be known, or from an indeterminate locality. Harm properly lies in the thing itself; mischief lies in that which is a consequence of a form of evil.

361. **EXACT,** extort. To exact is to drive out, as by simple force. To extort is to wring or to rend out, and implies the action of special or severe force. Exact is commonly an act of injustice; while extortion is an act of violence as in an act of tyranny; one may exact what is considered justly due or willingly accorded, as deference or obedience; one extorts what is not easily secured, or yielded only after much persuasion, as one may extort a confession or discovery.

362. **EXACT,** nice, particular, punctual. Exact is the quality of accuracy, the absence of defect of any sort. Nice is a term applied to a discriminating taste and quick perceptiveness, as in the judgment. Particular is a gradation of nicety, bringing discrimination to a specified point. Punctual is the quality of keeping to a definite point, like a person's punctuality as to time or season in doing a thing.

363. **EXAMINATION,** search, inquiry, research, investigation, scrutiny. Examination is the balance in which mentality holds itself when an inquiry into the condition of a subject is in order. A search is a combination of seeking and seeing, in the sense that one might physically place himself in the attitude of looking intently after a thing. Inquiry is an intellectual effort of searching or seeking after; and research is searching with energy or special intentness. Investigation is the act of seeking out information or general facts by means of waymarks, signs, or tracks. Scrutiny is to examine strictly or turn over obstacles to find something sought for. A research is inquiry into that which is remote; an investigation is minute and detailed inquiry. Scrutiny implies the most careful examination or inquiry along a given line.

364. **EXAMINE,** search, explore. In the sense of looking upon places or objects with a view of securing a closer acquaintance, to examine expresses less than either to seek or to search. To search is to seek for things which are more or less remote and hard to find. We explore regions that are either highly inaccessible, hitherto unknown, or far removed. Examination implies that the object looked at is near; as a botanist examines a plant, but a discoverer explores a distant region. Exploration signifies more than either of the others an issuing forth or a quest, the result of which is wholly problematical.

365. **EXAMPLE,** pattern, sample. Example is a thing framed or shaped in accordance with a likeness or similarity; while a pattern is a literal copy. A sample denotes something done according to an example. A sample is usually an attainable goal; but an example or copy is ever something one strives to reach, being indefinitely held forth or in advance as a pattern.

366. **EXAMPLE,** precedent. Example has a particular use which implies that something which has preceded or taken place is by special distinction entitled to notice. A precedent much more distinctly implies this. Both signify something worthy of being followed or used as a rule or guide of action. The example may derive its authority from an individual, but the precedent from time and from common consent. One is more commonly led on a course by a copy or example; one is, more strictly speaking, guided or governed by a precedent.

367. **EXAMPLE,** instance. Example, as here used, denotes the thing to be followed or copied; instance, that which stands or serves for a starting or resting point. Examples are useful for instruction or illustration; instances are usually adduced by way of proof.

368. **EXCEED,** excel, surpass, transcend, outdo. To exceed is to go beyond or farther, or to pass out of. To excel is to lift or move over a thing. To surpass is, literally, to over-pass; as one nation surpasses another in a particular show of power. To transcend is to climb beyond a premise or boundary; and to outdo signifies doing what is beyond the ordinary course. To excel is confined to that which denotes good actions only, and can only be secured by effort. No particular effort is necessarily implied in surpassing a thing,

which may really be a passive and altogether involuntary condition.

369. **EXCELLENCE**, superiority. Excellence is the quality of excelling, which makes it an absolute term. Superiority is only a relative term, implying a degree or status of advance from an inferior position, literal or figurative. Superiority is often applied to a particular virtue or quality; but excellence, in the main, signifies general and sustained worthiness.

370. **EXCESS**, superfluity, redundancy. Excess is that which exceeds or goes beyond any measure. Superfluity signifies more than a sufficiency of a thing, a fullness to overflowing in reference to a definite supply. Redundancy denotes not only enough of a superfluity to overflow but enough to stream back, and even cause an inconvenient inundation of excess.

371. **EXCESSIVE**, immoderate, intemperate. Excessive denotes superlative excess, or what is beyond measure. Immoderate is merely beyond moderation or without measure; while intemperate signifies something which is without bounds in general. Excessiveness applies to what is over and above in general; both immoderate and intemperate imply the things which are excessive in a moral sense only. Excessive admits of degrees; while immoderate and intemperate indicate a great or surprising amount of going beyond,—immoderate being, in fact, the highest conceivable degree of excess.

372. **EXCHANGE**, barter, truck. To exchange is to put one thing in the place of another, or to take one for another. One of the several modifications of exchanging is the term barter, implying an exchange of one article of trade from one person to another. To truck is, literally, to wheel or carry about the thing to be traded for, sold, or exchanged. In all these there is the suggestion of private property changing ownership by an agreement involving conditions of sale or exchange.

373. **EXCITE**, incite, provoke. To excite is to make alive, to cause to be in an awakened condition, applied to purely physical influence. To incite is to rouse up and at the same time inspire with a feeling of hope or courage. To provoke is to call forth the feelings in such a way as to aggravate, and may be applied either to an inward or outward action. Excitement is usually applied to the inward feelings, as one may excite a smile but provoke laughter. To incite is always applied to moral action.

374. **EXCURSION**, ramble, tour, trip, jaunt. Excursion is a departure from one's course or path. A ramble is applied to a course taken without any particular objective. A tour is a circuitous course. A trip is an excursion on foot, or one which is so short that it might easily be taken on foot. A jaunt is very similar to trip, but implies a distance that might be more easily compassed by wheeling or other means of locomotion. A tour is most often applied to a sober scheme of enjoyment by travel; but those who have little time for such pleasure take trips or jaunts.

375. **EXCUSE**, pardon. To excuse is to exempt a person or thing from blame. To pardon is to give up or not insist upon the punishment of another for a fault. One excuses that which personally affects one's self, like a small offense, or pardons a much greater wrong, or one which offends against morals in general. Generosity and mercy are exercised in pardoning; while simple good nature may excuse.

376. **EXECUTE**, fulfill, perform. To execute is to bring about or cause to come to pass a certain ending, and involves active measures. To fulfill is to carry out an obligation, moral or otherwise. To perform is to do or carry forward a simple action or labor. One executes according to a fixed intention, personal or otherwise, but previously determined; one fulfills according to the wishes or expectations of others; one performs that which is a fixed program of action.

377. **EXERCISE**, practise. To exercise is to drive or force out action or power, as to carry forward repeated exertion of some sort. To practise is an amplification of the idea of continuous or habitual action. One may exercise a virtue, implying a peculiar mental effort; while the practice of a profession, for example, is to put forward efforts tending towards desired ends, daily and ordinarily, in the natural course of duty.

378. **EXERT**, exercise. Exert signifies an action which is either internal or external. The exercise of functions implies, as in the previous instance, something particular and definite which is being carried forward.

379. **EXHORT**, persuade. To exhort is to speak in a manner to excite or impel one in the direction of an advisable line or course. To persuade is to speak so as to produce more of the drawing or compelling and involuntary action on the part of the listener, as may be done by a friend or an equal. A superior exhorts, and presumably on matters of duty or necessity; but one who persuades may exert an influence over another resultant in any sort of action.

380. **EXIGENCY**, emergency. Exigency is what a case demands, while emergency signifies the coming out or rising above a case. The latter is imperative when it comes, the former more casual. A traveler carries enough with him to cover exigencies, but not always sufficient to cover emergencies.

381. **EXIST**, live. To exist is to place or to stand a thing by itself or of itself, and existence is the property of all things in the universe. To live is more, for it signifies action by the heart, as well as the quality of merely carrying life forward. A patient may exist but faintly; but when he is said to live, the implication is of vitality and energy, which the other term does not convey.

382. **EXONERATE**, exculpate. To exonerate is to take off or remove a burden, and to exculpate is to throw off the blame. The first is the act of another; the second is one's personal act.

383. **EXPEDIENT**, resource. An expedient is an artificial means to an end. A resource is a natural means. It requires cunning to set up and successfully resort to expedients; and we say a naturally clever man is one who has abundant resources,—not here used in the sense of wealth.

384. **EXPEDIENT**, fit. Expedient is a condition of readiness for a stated occasion, and fit, or fitness, signifies an agreement with or suitability to circumstances. Fitness is determined by moral rule, while the adoption of an expedient is an action dependent upon any outward circumstance. It is imprudent not to do that which seems to be expedient; but it is more or less of a disgrace to do a thing which is unfit.

385. **EXPERIENCE**, experiment, trial, proof, test. Experience is an action which denotes the act of bringing out or of lighting up a thing. The trial of a thing denotes the actual trying of it by examination or search. The proof of a thing is the act of making good along a certain line. The test is that which serves to prove the reality or do away with the uncertainty surrounding a thing. All these together, with the word experiment especially, imply endeavors to arrive at a certainty respecting some unknown particular or the truth of something which is largely speculative.

386. **EXPLAIN**, expound, interpret. To explain is to make plainer by either implied or actual speech. To expound is to set forth more especially in detail. To interpret is literally to get the sense out of something which needs explanation or elucidation. To expound and to interpret are both methods or species of explaining.

387. **EXPLAIN**, illustrate, elucidate. To explain is to render more intelligible by words. To illustrate means, literally, to make bright, that is, to cause a thing to be more easily examined. To elucidate signifies, literally, to bring forth into the light. Both illustrate and elucidate are to give additional clearness, implying that a partial explanation has preceded. We illustrate by means of examples, similes, and allegories; we elucidate by means of commentaries or explanatory notes.

388. **EXPLANATORY**, explicit, express. Explanatory signifies belonging or pertaining to an explanation. The explicit is that which is laid out for inspection, or unfolded to view. To express is to deliver an opinion or judgment in specific terms. The explicit demands a free use of words. The express requires words in which there is no ambiguity.

389. **EXPOSTULATE**, remonstrate. To expostulate is to demand a reason for a thing. To remonstrate is to show reason against something, and usually rests upon the force of peaceable representation. He who expostulates passes censure, and makes claim to be heard, often with a premeditation of violence. He who remonstrates presents his case and merely requests to be heard.

390. **EXPRESS**, declare, signify, testify, utter. To express is, literally, to press out what passes in the mind. A man may express all the affections; he declares his opinion for or against a matter, more or less publicly, and in more positive terms than he would use in an expression of his views. Words, looks, movements, gestures, may also express the feelings of a man. Signify and testify are words employed to describe any general act of communication other than by word; but express is stronger than either of them. By the latter the deepest feelings of the soul are made known,

while simple intentions are signified or testified to. To utter is to bring out by utterance an idea; while to express respects the thing which is to be communicated. Expressions come from the heart; but utterance is from the lips alone, and may easily consist of words without meaning.

391. **EXTENUATE,** palliate. To extenuate is to thin out or to make small in the sense of lessening the degree of an impropriety. To palliate is to throw a cloak, as of charitable consideration, over a wrong so that it may not be apparent. To extenuate is the effect of circumstances; to palliate is the effort of an individual.

392. **EXTRANEOUS,** foreign, extrinsic. Extraneous signifies, literally, out of the land or domain, and not belonging to it, as well as forming no necessary or natural part of a thing. The extrinsic is that which may be said to form a part of a thing but has only an indirect connection with it. Both these terms have only an abstract sense; but foreign is a much stronger term, and signifies not only apart from family or tribe, but from the nation also, and, in the widest sense, at large. Intrinsic merit lies in the contents of a thing, and is the opposite of extrinsic.

393. **EXTRAORDINARY,** remarkable. Extraordinary is, like remarkable, an epithet opposed to what is ordinary. The extraordinary is a thing which is out of the ordinary course, but may not be sufficiently so to cause general remark; hence it is not necessarily remarkable. There are few of the former, compared with the number of the latter. Extraordinary is a much stronger expression than remarkable, the latter being sometimes what is looked for, and the former what is often unexpected.

394. **EXTRAVAGANT,** prodigal, lavish, profuse. Extravagant means a general wandering and divergence from the line. Prodigal means a launching or sending forth, and that in unexpectedly great quantity. We speak of lavishness when we imply a dealing out of something so largely that it is of little use or of no avail. Profuseness is a term applied to a free and lavish pouring out of supplies in quantities. An individual is said to be extravagant with his own means, and profuse in what he bestows on another. One can only be prodigal with large sums, but extravagance may be associated with small sums in excess of one's own means.

395. **EXUBERANT,** luxuriant. Exuberant denotes that which is very fruitful and superabundant. Luxuriant signifies expanding with unrestrained freedom. Both are applied to vegetation in a thriving state; exuberance expressing the excess, and luxuriance the perfection of a state of growth.

396. **FABLE,** tale, novel, romance. Fable is something spoken or told. Tale is also a telling, or a species of narration. Novel is a tale which is extended. Romance is a tale that has for a basis the wonderful, or, to be literal again, the romantic. Fables are allegorical, and are supposed to be written for instruction; the action being perhaps natural enough but the agents imaginary. Tales are fictitious, as a rule, but unimaginative. The novel is a tale in complex form, introducing any number and variety of characters and incidents. But it remains for the romance to hold the attention and engross the interest to the exclusion, temporarily, of all other intellectual processes.

397. **FACTIOUS,** seditious. Factious signifies busy or intermeddling. Seditious means prone to sedition or insurrection. Factious applies to the tempers of men individually; seditious applies to bodies of men, in characterization of their conduct. The factious man wishes himself to take an aggressive part in affairs; the seditious man would compel others to do his bidding.

398. **FAIL,** fall short, deficient. To fail is not to succeed, and implies an action that was abortive. To fall short is to miss, by an appreciable difference, a reaching over to a desired aim or expectation. To be deficient is to fall short only in certain directions or in a specific manner. Falling short either designates the results of actions or the state of things in general. A person is deficient in politeness, education, or in some other definite and particular thing.

399. **FAIR,** honest, equitable, reasonable. Fair is synonymous with beautiful, and may be said of either persons or things. It also applies to fair-mindedness, and always springs from appreciation of the right. Honest is applied to a man's honor or principle, and characterizes conduct as being in line with truth and sincerity. Equitable is according to absolute equity, and reasonable is in conformity with reason. What is fair or equitable is so with reference to all its circumstances; what is reasonable is so of itself.

400. **FAITH,** creed. Faith denotes either the principle of trusting or of the thing trusted. Creed signifies the thing believed. The latter only represents the thing which is the object of faith, which is far the more comprehensive term. Faith is a more general and often more indefinite term; creed applies to a particular and definite code. Every established form of religion has its peculiar creed, while many may be grouped in accord with the same faith.

401. **FAITHFUL,** trusty. Faithful is filled full of faith or fidelity, respecting altogether the principle. Trusty signifies not only the principle but qualifications in general, and applies to those in whom trust is to be placed. Faithful is applied to persons, while trusty may be applied either to persons or things.

402. **FAITHLESS,** perfidious, treacherous. Faithless is a general term which denotes merely a breach of faith. Perfidious implies not only a breach of faith but added treachery and injury. A perfidious person generally works under the mask or semblance of sincerity and deceives those who trust him. A treacherous person betrays another, and we speak of the act as being treacherous also. A perfidious person has the will to do injury; he is treacherous as soon as he does the injury.

403. **FALL,** downfall, ruin. A thing falls from an upright or erect position. Its downfall is from an elevated position and the term is not applied to trifling objects or to slight falls. Ruin is the strongest word of the series and marks the fall, the downfall, and the resulting destruction.

404. **FALL,** drop, droop, sink, tumble. Fall is the general term; the others are particular words expressive of some form or act of falling. Drop conveys the idea of a sudden fall usually in the form of drops. Droop is a partial falling or dropping, as in the case of a flower or an awning or tent drooping. Sink is a gradual falling with a gentle motion. Tumble is to fall ungracefully, disorderly, or awkwardly.

405. **FALLACIOUS,** deceitful, fraudulent. Fallacious is deceitful or false without design or intention of so being. One may hold fallacious opinions or make fallacious statements from errors of judgment. Things are deceitful in appearance when they are not what they seem to be. Distances measured on the water are deceitful because they are greater than they appear to be. Fraudulent denotes willful, and often impudent, attempts to deceive.

406. **FALLACY,** delusion, illusion. A fallacy is that which tends to deceive. We try to detect fallacies in propositions or in reasonings. Delusion is something which deceives or misleads. Illusion is something which plays upon the mind, or it is the state of being so played upon or deceived.

407. **FAME,** reputation, renown. Fame is loud, noisy, uncertain, and more or less changing. Reputation is the lasting, solid, enduring opinion of a man and is generally based upon close observation or long intimacy. Renown is rather a combination of fame and reputation, being as loud as the one and as enduring as the other.

408. **FAME,** report, rumor, hearsay. Fame is that which spreads abroad without regard to the agent, is good or bad, and establishes the popular opinion or judgment of a person or thing. Report is a communication regarding events and occurrences; it depends upon the character and veracity of the one who communicates it. Hearsay regards the one who hears the thing and communicates his information not from any positive knowledge but from what he has been told.

409. **FAMILY,** house, lineage, race. Family regards the number, relationship, and intercourse of its members. A house regards the inmates and the occurrences within the walls. In an extended sense house is applied to the political, civil, official, and distinctive powers of a family and group, as the House of Brunswick, or the House of Lords. Lineage regards only blood relationship and includes present members, their ancestors and posterity. Race is broad, comprehensive, and includes all mankind or separate national or ethnical groups.

410. **FAMOUS,** celebrated, renowned, illustrious. Famous denotes that which is entitled to fame or which is the cause of it. Celebrated is that which is regarded with either solemnity or seriousness such as might mark a celebration or memorial ceremony. One who is celebrated commands great respect. A person is renowned because of the possession of very rare or extraordinary qualities or talents, or these in a high degree. Illustrious pertains to that which confers dignity or upon whom dignity is conferred.

411. **FANCY,** imagination. Fancy brings a thing into the mind and pictures it there either vaguely or

well-definedly. Imagination dwells upon the fancied subject, and invests it with much greater value and important accessories than fancy does. We fancy (not imagine) that we see or hear things.

412. **FASTIDIOUS**, squeamish. One is fastidious who is not easily pleased and whose niceness is caused by pride. One is squeamish who is easily disgusted from humor and caprice rather than from any well-founded sense of discrimination or good taste.

413. **FAVORABLE**, propitious. That which is well disposed towards us and acts kindly towards us is favorable. Whatever promotes our interests, furthers our plans, and confers benefits upon us by seconding our efforts and fulfilling our hopes is propitious. Winds, persons, friends, are favorable; the gods and circumstances are propitious.

414. **FEARFUL**, dreadful, frightful, horrible, horrid, tremendous, terrible, terrific. Fearful causes fear; dreadful causes dread. As fear and dread affect the mind only these in no way affect the senses. The derivation of the words makes plain the uses. Frightful causes fright; tremendous, literally, causes trembling or shaking; terrible and terrific cause terror; horrible and horrid, horror.

415. **FEAST**, banquet, carousal, entertainment, treat. Feast conveys the idea of enjoyment of a social meal. Banquet implies pomp, state, ceremony, and splendor. Carousal is a drunken feast. Entertainment and treat convey the idea of hospitality and generosity.

416. **FEAST**, festival, holiday. A feast is always sacred; a festival is either sacred or, at the least, serious; a holiday is a day upon which business is suspended.

417. **FEEL**, be sensible, conscious. Feel is capable of very wide uses, we feel with the whole body and with all our faculties; to be sensible is said only of the senses. We feel pleasure and pain; we are sensible of sounds. We are conscious of what passes inwardly. We feel the force of a remark; are sensible of the evil effects of wrongdoing; and are conscious of our own shortcomings.

418. **FEELING**, sense, sensation. Feeling is one of the five modes of sense; sense is the abstract power of feeling through the senses; sensation is feeling expressed in the serious, scientific, or medical sense of the word.

419. **FEELING**, sensibility, susceptibility. Feeling expresses a strong property of the mind, either particular or habitual; sensibility is taken in the sense of habit; susceptibility expresses a readiness to be affected by external objects. Keen sensibilities are undesirable since while they give much pleasure they also are the source of much pain.

420. **FEIGN**, pretend. These words both convey the idea of either doing or saying what is not true. Feign may be used in either a bad or an indifferent sense; pretend is always bad. Feign has in view a future purpose; pretend has a present purpose. Feign often follows a line of conduct; pretend depends upon words.

421. **FELICITATE**, congratulate. Felicitate has to do only with ourselves; congratulate, with others. We felicitate ourselves on an escape from evil; we congratulate others on their good fortune.

422. **FEROCIOUS**, fierce, savage. Ferocious conveys an idea of cruelty and wildness; fierce, of pride and anger; savageness, a less violent but more permanent state of cruelty or anger. Ferocious and fierce are usually applied to animals; savage, to man.

423. **FERTILE**, fruitful, prolific. Fertile expresses the power to send forth that which is unlike or not of its own nature. We speak of the soil being fertile when it sends forth an abundance of vegetation. Fruitful is the power of sending forth much which is of the same nature, as when trees, plants, and vegetables send forth fruit. Prolific is applied to animals.

424. **FERVOR**, ardor. We are fervent in feeling; ardent in acting. The affections are fervent; the passions are ardent.

425. **FESTIVITY**, mirth. Festivity rather produces mirth, and it includes eating, drinking, dancing, and other pleasures; mirth is that lightness of heart which usually attends such occasions.

426. **FICTION**, fabrication, falsehood. Fiction is the opposite of what is real; fabrication and falsehood, of what is true. The object of fiction is to instruct and to entertain; of fabrication and falsehood, to deceive and mislead. Fiction and fabrication require some invention; falsehood merely contradicts.

427. **FIGURE**, metaphor, allegory, emblem, symbol, type. Figure is that which is painted by the imagination and may be expressed in wood, marble, paint, and with a variety of tangible media; metaphor and allegory are figures of the imagination recorded only in words; an emblem is a representation of moral precepts and qualities by material objects; symbol is an emblem which all men recognize as standing for a definite thing; a type is an emblem by which one object is meant to represent another in a mystical way.

428. **FINAL**, conclusive. Final implies simply being the last; conclusive involves the processes by which one reaches the last. Final is arbitrary and the will can decide what shall be final; conclusive depends upon all the circumstances. An answer may be final, yet be far from being conclusive.

429. **FIND**, find out, discover, espy, descry. Find expresses a general idea of coming in sight of a thing. We may find a thing by accident, but we find out as a result of effort. We discover what is always remote and unknown. We espy what is very secluded and retired. We descry what is distant or rather hidden by a number of objects.

430. **FIND**, find out, discover, invent. In this sense we find modes or ways or means of performing or effecting purposes; we invent by applying in new ways materials which exist separately. We find out mechanical and operative processes; we discover by removing the obstacles and difficulties which ordinarily prevent a thing from being known or understood.

431. **FIND FAULT WITH**, blame, object to. All of these words denote expressing our dissatisfaction in words. We find fault with by pointing out the fault and we use the term in regard to both objects and persons. We blame persons only for the result of their faults. We object to things which have been done or are to be done.

432. **FINE**, delicate, nice. Fine is opposed to coarse, and we speak of a fine thread. In the moral sense fine conveys the idea of refined, as when we speak of a fine sense of honor or fine feeling. Delicate conveys an idea not only of fineness but also of something agreeable to the taste, as when we speak of delicate coloring, delicate shading, or of a delicate flower. In matters of appetite, delicate appeals to the refined and cultivated, while nice applies to the pleasures of the young, the ignorant, or the sensual. Nice has also a sense of discriminating, as when we speak of a nice taste in music. Niceness in such matters conforms to some established rule or standard.

433. **FINITE**, limited. Finite relates to the natural boundaries, while limited regards artificial bounds. We cannot extend the finite; but human power may change the limited.

434. **FIRM**, fixed, solid, stable. Firm is not easily shaken; fixed is attached or fastened to something and is not easily torn away; solid is capable of supporting or bearing up a load; stable will endure or last.

435. **FIT**, apt, meet. Fit is a property or quality which may be either natural or acquired; aptness is always a natural endowment; meet implies a sense of having been measured so as fully to come up to the requirements.

436. **FIT**, suit, adapt, accommodate, adjust. Fit makes a thing becoming or fit for one's use; suit is to make a thing suitable or agreeable; adapt is to change or to make something conform to present conditions, and involves the use of the judgment; accommodate is an act of the will and suggests that some sacrifice is involved; adjust conveys an idea of putting things in right order but not, necessarily, of keeping them in order.

437. **FIX**, determine, limit, settle. Fix has a general idea of making something keep its place and has a broad use; determine is a result of thought. In fixing one point is involved; in determining, one or more than one. We fix upon a point of beginning; we determine upon the beginning, the ending, the length, the breadth, and direction. We determine by removing doubt; a thing is limited by something tangible, or by law. We determine the details that we may settle the whole question.

438. **FLAG**, droop, languish, pine. Flag is to hang down as a flag and is only applied to those objects which may be blown out as a flag, though figuratively we say that the spirits flag. That droops whose head droops or flags. Languish is applied to persons and is used in describing conditions under sickness, prison, or other distress. Pine describes a mental condition of wearing pain.

439. **FLAT**, level. Flat is the opposite of round, and suggests the absence of elevation. Level has to do with other things by which its evenness is made clear.

440. **FLATTERER**, sycophant, parasite. A flatterer uses flattering words; the sycophant in addition to flattering words uses every artifice by which he can gain favor; and the parasite submits to every indignity and degradation to which he may be subjected.

441. **FLEXIBLE**, pliable, pliant, supple. Flexible is that quality which permits ease in bending; pliable, of folding. Pliant is not the quality but the act or the condition of folding backward and forward with marked readiness.

442. **FLOURISH**, thrive, prosper. Flourish, a word drawn from the flower kingdom, denotes being in a state or condition which is agreeable; thrive denotes the process of reaching that state; while prosper is to pass through the several stages of seeing one's hopes consummated.

443. **FLOW**, stream, gush. Flow is the general term; the others are different modes of flowing. Water streams through small channels or from little spouts; fluids gush with violence. When we speak of blood flowing from a wound we merely express the idea that blood issues from the wound—we do not say how; it streams from it when it flows out as through a channel; but it gushes out when it issues forcibly and in as large quantities as the opening will permit.

444. **FLUCTUATE**, waver. He is said to fluctuate who forms many opinions in rapid succession; he wavers who cannot form an opinion or come to a conclusion. The spirits and opinions fluctuate; the will wavers.

445. **FLUID**, liquid. Fluid is anything that flows; a liquid is properly anything that has been melted. Water and air are fluids because both will flow; water is also a liquid because it is what ice becomes when it melts. Boiling lead is a liquid because it is melted.

446. **FOLLOW**, succeed, ensue. Follow, said of both persons and things, means to go or to be in the same place after another; succeed adds the idea of immediately after another. Ensue is used of things only and implies a necessary connection between the things spoken of.

447. **FOLLOW**, pursue. One follows another with a friendly or, at the least, an indifferent intent; one pursues with a hostile intent. When used of plans or purposes, one follows another's plans, but pursues his own.

448. **FOLLOW**, imitate. We imitate only that which is external, by copying or mimicking it; we follow, not only what is external, but what is internal, as the dictates of conscience.

449. **FOLLOWER**, adherent, partisan. A follower follows another person, his interests, or his principles; an adherent adheres to the cause or interests of another; a partisan adheres to a party. A follower has many motives; an adherent, a personal motive; and a partisan, a partial motive.

450. **FOOL**, idiot, buffoon. Fool is a class name and describes either a natural or artificial fool; an idiot is a natural fool; and a buffoon, an artificial fool. A fool goes contrary to common sense; an idiot cannot help doing so; while a buffoon does so intentionally.

451. **FOOLHARDY**, adventurous, rash. A foolhardy man has the hardihood of a fool and has no regard for consequences; an adventurous person is always ready to venture from the very love of it; a rash man acts swiftly without taking thought.

452. **FORBID**, prohibit, interdict. Forbidding is a direct, personal act; prohibit is a judicial act such as is exercised by the legal authorities; interdict is a moral term applied to the more serious concerns of life.

453. **FORCE**, violence. The use of force is justified by reason and fairness; the use of violence is illegal and, generally, unjustifiable.

454. **FORESIGHT**, forethought, forecast, premeditation. Foresight is seeing before; forethought is thinking before; forecast is reasonable prophecy of what will happen; premeditation is the act of taking thought beforehand with regard to what shall be said or done.

455. **FORETELL**, predict, prophesy, prognosticate. Foretell is a general and familiar word signifying to tell beforehand; predict is a foretelling by reason of some supernatural power, real or imagined; prophesy is to foretell by inspiration; prognosticate is to understand thoroughly so as to foretell results.

456. **FORGIVE**, pardon, absolve, remit. Forgive, of Anglo-Saxon origin, is the common term; pardon, from the French, is used of more serious offenses; absolve relates to the connection between man and God; remit relates more to the freeing from punishment than from blame or sin

457. **FORM**, figure, conformation. Form is the result of either nature or art; figure, the result of design; and conformation is the arrangement or adaptation of parts to accomplish certain purposes or functions.

458. **FORM**, fashion, mold, shape. Form is to arrange in a form; fashion is to arrange in a definite or exact form; mold is to arrange in a set or precise form; shape is to arrange with regard to the external aspect.

459. **FORM**, ceremony, rite, observance. Form regards the prescribed standards of speech and conduct as determined by conventionality; ceremony regards those forms which express respect and deference; rites regard the tenets of religion; and observances refer to both religious and national ceremonies.

460. **FORMAL**, ceremonious, ceremonial. Formal describes conduct or speech in accordance with prescribed forms; ceremonious denotes an observance of ceremony, respect, or deference; ceremonial denotes an observance of proper ceremonies.

461. **FORMERLY**, in times past, in old times, in days of yore, in ancient times. Formerly denotes a more recent time than do the other terms; in fact, the difference in meaning or use of all of these terms is simply one of greater or less remoteness.

462. **FORMIDABLE**, dreadful, terrible, shocking. Formidable is applied to something which looms up so as to excite a weighty and serious fear; dreadful to what excites dread; terrible to what excites terror, acting both upon the senses and the imagination; shocking to what agitates violently. The terrible and the shocking both act in a sudden and unexpected manner, whereas that which is dreadful may grow gradually to be so, its forebodings being vague and intangible.

463. **FORSAKEN**, forlorn, destitute. To be forsaken is to be deprived of the companionship and assistance of others; to be forlorn is to be left alone in the midst of distress or difficulties, in a certain sense lost, to be without any guide in an unknown road; to be destitute is to be without any of the primary necessities and first essentials of life. To be forsaken is a partial condition only. To be destitute or forlorn is a more permanent condition.

464. **FORTUNATE**, lucky, fortuitous, prosperous, successful. Fortunate signifies being possessed of fortune in the circumstantial phases of a thing; and, with being lucky, is applied to that which occurs outside the plane of man's control. Lucky signifies having the luck or ability to make a success of something, and is always more sudden, unaccountable, or singular than to be fortunate. Fortuitous signifies to have by chance the quality of fortune. To be prosperous is to reach a condition in which hope has played a part, an extension of a state of advance along the line of one's fixed desires. To be successful is to meet with success, and is that degree of prosperity which immediately attends our own endeavor.

465. **FOSTER**, cherish, harbor, indulge. To foster is to give to a thing paternal care. To cherish is to feed with affection, to hold dear or set a value upon. To harbor is to provide shelter as well as protection. To indulge is to extend a certain liberty which is agreeable, often to give the whole mind to it, and make it the chief source of pleasure.

466. **FOUND**, ground, rest, build. To found is to exercise art or contrivance in making a support. To ground denotes the laying of the foundation of a thing so deep and so securely that it may never tremble or approach instability. To rest is more related to a state of settlement dependent upon the will of the individual. To build has especial reference not only to the basis taken but to the superstructure reared upon that foundation.

467. **FRANK**, candid, ingenuous, free, open, plain. Frankness is a condition of being wholly at ease, and may be associated with unpolished manners and impoliteness. Candor implies nothing to conceal and accompanies uprightness and refinement. Both may be either habitual or occasional and may be assumed. Ingenuousness is a permanent and inherent characteristic, implies a state of being absolutely without disguise, and denotes a habit of acknowledging the faults of one's self. Free is frank to the point of impertinence. Open signifies frank to the point of indiscretion, and to every one, while frankness is a habit of expression confined to particular individuals. Plain may be tactless, but is free from odiousness.

468. **FREAK**, whim. Freak applies more to the vagaries of childishness; whim refers rather to the eccentricities of responsible minds. Freak may be used in a figurative and material sense, *i. e.*, "Freak of

Fortune," "A freakish action." Whim is entirely a bias of the mind.

469. **FREE,** liberal. Free respects action or sentiment exerted under direction of the will. To be liberal is to act more largely according to the dictates of an enlightened mind or generous-hearted impulse. But liberality denotes impulsive, generous-hearted action, in which the will was the necessary first cause, or where without a definite will, despite the highest degree of liberality, action would never have resulted.

470. **FREE,** set free, deliver, liberate. Free is to free one's self. Set free means to make others free. Deliver is to rescue from evils due to circumstance, or those of oppression. Liberate is to rescue or set free from durance or captivity.

471. **FREE,** exempt. To be free is a state of freedom either by accident or design from any thing or condition undesirable. To be exempt is to be free by intention from any burden which ordinarily all others share.

472. **FREEDOM,** liberty. Freedom is a condition of untrammeled self-expression and action, used always in a good sense. Liberty is used often in a bad sense, and implies positive release from restraint.

473. **FREQUENT,** resort to, haunt. Frequent usually means the action of an individual; resort and haunt refer to numbers of individuals. Frequent and resort are used in an indifferent sense, haunt invariably in a bad sense.

474. **FRIGHTEN,** intimidate. Immediate danger which is seen frightens; threatened danger intimidates. Animals may be frightened but never intimidated.

475. **FROLIC,** gambol, prank. Frolic is any gay, joyous amusement. Gambol implies physical action, hence dancing or leaping for pleasure. Prank is a freakish trick or mischievous diversion. Gambol and prank may be applied to animals.

476. **FULFILL,** accomplish, realize. Wishes carried out are fulfilled. Any work perfectly done is accomplished. One's hopes, plans, or prospects are realized.

477. **FUNERAL,** obsequies. Funeral is an ordinary service however simple accompanying the interment of the dead. Obsequies may occur at any subsequent time. Also obsequies implies formal pomp and ceremony.

478. **GAIN,** profit, emolument, lucre. Gain is a general term meaning all increase of income. Profit means the gain from an estate or business. Emolument is reward or salary for labor or services. Lucre is used in a bad sense, signifying immoderate gain or usurious profit, or gain acquired in any dishonest way.

479. **GAPE,** stare, gaze. Ignorance and bewildered astonishment expresses itself by gaping; impertinence or stupefaction by staring. Gaze is used in a good sense and means to look steadily from any laudable motive. To gaze may express pleasure, interest, surprise, or curiosity.

480. **GATHER,** collect. Gather means to bring together. Collect implies the additional meaning of completing a whole by bringing together.

481. **GENDER,** sex. Gender, properly speaking, a kind, applies to distinctions in words. Sex implies nature or habit and applies to animals. There are three genders, masculine, feminine, and neuter; two sexes, male and female.

482. **GENERAL,** universal. The general rule may have exceptions; the universal has none. General is used in opposition to particular; universal is opposed to individual. General means the greater part; universal signifies every part.

483. **GENTEEL,** polite. Genteel refers to rank in life, to high birth, not necessarily to good breeding. Polite applies to manners, speech, and appearance.

484. **GENTILE,** heathen, pagan. Gentile signifies one who, while not positively believing in divine revelation, stands ready to be convinced. The heathen adopts a false form of worship. The pagan insists upon a mode of worship made out of his own imaginings. All pagans are heathens. All heathens are gentiles, but all gentiles are not either pagans or heathens.

485. **GENTLE,** tame. Gentle indicates sweetness and mildness in natural disposition; tame implies familiarity with human society due to training and association. All tame animals are not gentle, nor are all gentle animals tame. Tame is opposed to wild, gentle to rough or fierce.

486. **GET,** gain, obtain, procure. Get is a general term and includes the other three. What one gets may not be desirable or in accord with his efforts. To get something which is in any way advantageous or desired is to gain. Obtain implies rather the getting by one's own efforts and exertions. Procure is to obtain by either labor or strategy.

487. **GIFT,** present, donation. To make a gift is a generous act and confers benefit. Making a present is more an act of courtesy and confers pleasure. Gifts and presents are private and personal. Donations are public, viz., gifts to hospitals, churches, and other general institutions.

488. **GIFT,** endowment, talent. A gift is never obtained by one's own labors or exertions, and the word always suggests a giver. Endowments refer more to the receiver, and may be cultivated and acquired. Talents suggest only their own intrinsic merit independent of source, and may be either inherent or acquired.

489. **GIVE,** grant, bestow. The inclusive and general word is give. To grant is to give anything tangible or intangible in response to a request. Superiors grant or bestow. Any one may give to another. Bestow implies a condition of necessity on the part of the recipient.

490. **GIVE,** afford. Give is the general term. Afford implies giving in proportion to one's income or circumstances. Give denotes an entirely unconditional action.

491. **GIVE,** present, offer, exhibit. In order to give there must be acceptance. To present signifies giving with more or less formality. One offers when he makes the attempt to give. An offer may be refused. To exhibit is to place conspicuously in view.

492. **GIVE UP,** deliver, surrender, yield, cede, concede. We give up what is ours. We deliver that which is another's. We surrender with reluctance that which we wish to retain. To yield implies resistance, or giving up under compulsion and through helplessness or weakness. To cede is to surrender peaceably or by treaty, and implies willingness. Concede denotes yielding through courtesy or discretion.

493. **GIVE UP,** abandon, resign, forego. One can give up anything small or great. One abandons projects of importance, and that by his own decision. One resigns what he desires and what he already has. He foregoes that which he might have. We can forego a pleasure by deciding not to take it. We resign an office which we already hold.

494. **GLAD,** pleased, joyful, cheerful. These meanings increase in intensity in this order—pleased, cheerful, glad, joyful. Pleased may indicate only a fleeting emotion. Cheerful suggests a more permanent condition of mind independent of external conditions. Gladness may have its source in physical causes, but joy springs from mental impressions. Both gladness and joy are induced by outward circumstances.

495. **GLANCE AT,** allude to. Glance at in writing or speech signifies a cursory allusion to a fact or subject. To allude to implies an indirect but not concealed action, hence a reference to a subject without stating the fact.

496. **GLARING,** barefaced. Glaring denotes the quality of the thing; literally, in a powerful light. Barefaced describes the person; literally, entirely undisguised. Barefaced lie suggests the boldness of the liar. A glaring lie is an unmistakably obvious falsehood.

497. **GLIMPSE,** glance. A glimpse is what one sees in a fleeting moment. A glance is the act of looking quickly or surreptitiously. A glance at an object gives us a glimpse of it.

498. **GLOBE,** ball. Strictly speaking, a globe is a body not perfectly circular in every circumference line; that is, it may be irregularly round. A ball is symmetrically round. Globe applies rather to astronomical and chemical bodies.

499. **GLOOMY,** sullen, morose, spleeny. Gloomy is a matter of inherent disposition, a misfortune. Sullen is a matter of uncontrolled temper, a fault. Sullen also implies rebellion against authority. Morose is a pessimistic frame of mind in those of mature age and in authority, hence does not include rebelliousness. Spleen is perpetual bitterness and is a defect of the nature. Moroseness is a defect of the temper. Spleen is often consciously malicious. Moroseness signifies rather a warped judgment.

500. **GLORY,** honor. Glory induces extraordinary achievement. Honor leads to discharge of one's duty. Glory is more splendid and may be attained by only a few. Honor is more substantial and is within reach of

all. Glory may be regarded with indifference, but honor must be most highly prized and striven for by all.

501. **GLORY,** boast, vaunt. To glory is rather an act of the mind. To boast and to vaunt refer to an expression of that sentiment. One glories in matters of importance; he boasts of more trivial things. Vaunt is a word less commonly used in ordinary speech, and is confined more to classical literature.

502. **GODLIKE,** divine, heavenly. Godlike defines itself. Divine is opposed to human. Heavenly is opposed to earthly. Anything that appertains to a superior being is divine. That which belongs to heaven is heavenly.

503. **GOLD,** golden. Gold means made of gold. Golden is the quality of being or appearing like gold.

504. **GOOD,** benefit, advantage. Good comprehends everything that is suitable for a purpose, and desirable for happiness. Anything that may be used to promote our welfare is an advantage even though it be turned against us, thus becoming an evil rather than a good. A benefit is some specific good as applied to a particular individual, and is always in relation to circumstances.

505. **GOOD NATURE,** good humor. Both terms refer to an inherent disposition leaning towards pleasing others. Good nature is a permanent quality and habit. Good humor is a mood of the hour, and may be largely on the surface, while good nature applies to the state of the mind.

506. **GOODS,** furniture, chattels, movables, effects. One's goods include all personal possessions which are of value to him. Furniture belongs to the things of the household. Chattels has a wider significance, things separated from one's person and house, cattle, slaves, lands, etc., in fact all salable property. Movables are only those articles which can be taken from place to place. Effects contains almost as wide a meaning as goods, but relates especially to goods which can be converted into money. Goods not under the owner's control for disposal become effects.

507. **GOODS,** possessions, property. Goods must be considered as to whether they are real or imaginary, possessions as to whether lasting or temporary, property as to whether it is legal or illegal. "Some abound in the goods of this world." "Be not anxious for earthly possessions." "The most secure title to property is held by inheritance."

508. **GOVERN,** rule, regulate. To govern is to exercise authority tempered by judgment and knowledge. To rule is to arbitrarily control the actions of others. To regulate is to manage affairs purely by the exercise of judgment.

509. **GOVERNMENT,** administration. Government is a more comprehensive term than administration. Administration implies putting into execution the laws or will of another. A government may be administered. Administration may change while the government does not.

510. **GOVERNMENT,** constitution. Government signifies the general act of exercising authority in any form. A constitution is some fixed form of government.

511. **GRACE,** favor. Properly, grace is used only in regard to persons who have erred, and includes in a sense forgiveness. Favor is simply a kindness voluntarily shown, deserved or undeserved.

512. **GRACE,** charm. Grace is physical and qualifies the action of the body. Charm is an attractiveness of the mind and soul as well as of the body.

513. **GRATIFY,** indulge, humor. Gratify is to produce an intense pleasure, to please greatly, and suggests also an element of satisfaction. Indulge signifies to allow much gratification, perhaps to excess, but not necessarily so. To humor implies indulgence exercised toward fancies or caprices.

514. **GRAVE,** serious, solemn. Grave, weighty, applies to deportment and movements of the body as well as the state of mind; heaviness of action. Seriousness is caused only by an operation of the mind and bespeaks a steadiness of purpose and demeanor. Seriousness allows one to be quick and alert, which gravity does not, but is never jocular. Solemn is used to denote an extraordinary seriousness, and applies rather to things of a religious nature, or of great moment.

515. **GREAT,** large, big. Great defines intangible things and suggests an element of intangibility even in material things. Big applies to material things and expresses less in degree. Large describes things which can be measured. Great may be used to designate things infinite in quality. "God is great." We may say, "a great mind," "a big brain." Large suggests not only limitation, but is relative in its meaning. Thus, "The tiniest insect is comparatively large," never "comparatively big."

516. **GREAT,** grand, sublime. Great denotes extent. Grand embraces also the idea of superior excellence. Sublime applies only to the works of nature, and includes height, hence, figuratively, an elevating quality. Great may apply also to works of art, and suggests immensity.

517. **GRIEVE,** mourn, lament. Grieve is a general term, and denotes an inward act. To mourn is an outward act. Thus, to mourn is a manifestation of grief. Grieve and mourn are permanent sentiments. Lament is a passing feeling. To mourn may be a silent expression. Lament signifies mourning in cries or words.

518. **GROAN,** moan. Groan is involuntary, a noise made by hard breathing. Moan is a voluntary expression of pain, made simply by the voice. Both express pain of either body or mind.

519. **GROSS,** coarse. The moral significance of both words is synonymous. Gross suggests rather material bulk, hence is applicable more exclusively to habits of the body. Coarse suggests texture, so can be used to describe manners, and trend of the mind.

520. **GUARANTEE,** be security for, be responsible for, warrant. We guarantee by our word. To be security for includes also some binding act or contract, and is used more often in a legal sense. Guarantee is used more in a commercial sense, and implies the power to make good. Being responsible for applies to morals and conduct and is used always in reference to the behavior of people more or less under our charge and protection. To warrant binds one to make restitution; used morally, it indicates a justification of a certain line of action.

521. **GUARD,** defend, watch. Guard comprehends the meaning of both defend and watch. Defend is used only in case of actual attack. Guard signifies also to prevent the attack by watchfulness. One defends only in active fighting. One guards in times of peace and security. Watch denotes simply continuous observation for any purpose.

522. **GUARD,** guardian. A guard may guard either persons or things; a guardian applies to persons only. A guard may be only temporary, and protects from external evils. A guardian takes entire charge of the person and welfare of another.

523. **GUARD AGAINST,** take heed of. Guard against implies the exercise of special care against active external evils or influences. Take heed of applies to internal evils or undesirable mental tendencies, and passive dangers. "Take heed lest ye stumble." "Guard against slander."

524. **GUESS,** conjecture, divine. We guess at what is occurring or has occurred; we conjecture that which may be in the future. Properly, divine implies supernatural knowledge; commonly, however, it signifies to guess or conjecture correctly.

525. **GUILTLESS,** innocent, harmless. Innocent applies to acts; guiltless also to intentions. Guiltless properly characterizes only the condition of man; innocent may be used to indicate the quality of things. Innocent and harmless both represent a negative quality; innocent, a quality of the mind; harmless, an inability to cause physical injury.

526. **HAPPEN,** chance. Whatever occurs happens. That which happens by accident, or outside the ordinary course of expectation, is said to chance.

527. **HAPPINESS,** felicity, bliss, blessedness, beatitude. Happiness is induced by desirable conditions both of the body and soul. Felicity denotes an inward state due rather to ideal conditions of the soul, and independent of outward circumstances. Bliss indicates a higher degree of joy, and joy of a superior nature, than either happiness or felicity. Bliss relates to the spiritual nature. Blessedness implies special Divine favor. Beatitude denotes the most exalted degree of heavenly bliss.

528. **HAPPY,** fortunate. Happy relates to the state of mind; fortunate to external circumstances. Happiness depends upon one's nature; fortune upon one's efforts and abilities and chance. A fortunate man may be unhappy and *vice versa.*

529. **HARBOR,** haven, port. Harbor suggests a shelter, and is temporary; haven suggests a secure shelter, and a permanent resting place. A haven is a natural harbor; a port is an artificial or improved harbor, and is used rather in a commercial sense.

530. **HARBOR,** shelter, lodge. To harbor is used more often in a bad sense. It means to afford a

habitual stopping place. "One harbors resentment," or "one harbors thieves." One shelters those creatures which are helpless or weaker than one's self. One harbors permanently, though perhaps intermittently. One lodges that which wants a resting place. To lodge is temporary.

531. **HARD,** firm, solid. Hard denotes close adherence of the parts of any body. Firm is used to designate the close adherence of two separate bodies. Pieces of ice floating in a river may be hard but they are not firm. Solid is opposed to fluid and is not necessarily hard. Jelly is solid and stone is hard. Firm also implies a certain immovability.

532. **HARD,** callous, hardened, obdurate. As above, hard signifies the ability to resist external pressure. Hard is an intrinsic quality. Callous is a state of hardness brought about by circumstances and external conditions, or long-continued custom; a tender nature may become calloused. Hardened applies to both the heart and the mind. Obdurate refers especially to the will. One may become hardened by time and circumstance. Hardened is a permanent condition; calloused may be temporary.

533. **HARD,** difficult, arduous. Difficult is negative, and means simply not easy. Hard is a stronger term. Literally, arduous signifies high out of reach; hence, while hard tasks are possible of accomplishment by persons of only average ability, arduous work requires almost superhuman effort, and is beyond the reach of ordinary intellects.

534. **HARD-HEARTED,** cruel, unmerciful, merciless. Hard-hearted characterizes a settled habit of thought and action. Cruel may be only a passing disposition or an action of the moment. Cruelty is measured by the action rather than the person; a tender-hearted person may be cruel through ignorance. Both unmerciful and merciless denote lack of mercy, but merciless is the stronger term. A man may be unmerciful through an unwillingness to extend mercy in a particular case; a man is merciless when he is incapable of feeling mercy.

535. **HARDLY,** scarcely. In many senses these words are synonymous,, but when the idea of difficulty only is implied, hardly is the proper word. "I can hardly walk." When the idea of infrequency only is conveyed, scarcely is preferable. "He scarcely ever walks."

536. **HARSH,** rough, severe, rigorous. Harsh and rough have a physical significance, but harsh is much the stronger term. In their figurative use, rough applies to manner and mode of speech. Harsh refers to the mental attitude and includes that even when used to describe deportment. Severe and rigorous describe the action rather than the person. One may be severe in dealing with innocent persons under his control, but rigorous in punishing criminals. Rigorous is an extreme severity.

537. **HASTEN,** accelerate, speed, expedite, dispatch. Hasten denotes little besides active, rapid motion. Accelerate signifies to increase one's speed, or quicken an operation. Speed conveys the idea of forward movement. Whereas hasten may be aimless hurry, speed is effectual movement. Expedite expresses the idea of making easy of accomplishment; meaning, literally, to remove obstacles, hence to bring about a quick accomplishment. Dispatch designates the act of completing a task with expedition, of speedily finishing a piece of business.

538. **HASTEN,** hurry. We may hasten in good order and according to design. We always hurry in confusion, and without forethought.

539. **HATE,** detest. We hate from a personal feeling; we detest from a moral sense. We hate those who mistreat us; we detest those who mistreat others, or who are undeserving of respect. Therefore, to detest is commendable; to hate is blameworthy. We may hate those who are good, we cannot detest them.

540. **HATEFUL,** odious. Originally synonymous, these two words have now a slight deviation of meaning. Hateful is what we hate. Odious describes any quality or action that would make us hateful to others, or others hateful to us.

541. **HATRED,** enmity, ill will. Hatred expresses more than enmity, while ill will expresses less. Hatred wishes ill to others, and is happy only in their misery, but does not necessarily take an active part in causing that misery. Enmity, although consisting of action as well as feeling, is a more honorable sentiment in that it has always a real or fancied reason for its existence. Ill will lies only in the mind and may exist in only a slight degree.

542. **HAUGHTINESS,** disdain, arrogance. Haughtiness is based upon a high opinion of ourselves; disdain upon a low opinion of others. Hence disdain is sometimes justifiable. Haughtiness and disdain are sentiments of the mind. Arrogance is an expression of those sentiments, either by words or manner.

543. **HEALTHY,** wholesome, salubrious, salutary. In modern use healthy applies more exclusively to a condition of the body not to things that induce that condition. A man is healthy. Food, exercise, pure water, and good air are wholesome. Wholesome qualifies things and circumstances. Salubrity is the quality of an environment which improves the health. Salutary conveys the idea of positively curing disease.

544. **HEAP,** pile, accumulate, amass. Heap may be large or small, orderly or disorderly. A pile is always considerable in amount and is made according to some design,. however simple. Hence a building may be called a pile. Accumulate suggests heaping and implies a collection of separate units which may be dissimilar in character. We amass that which coalesces into a whole. In neither amass nor accumulate is the action of a conscious agent necessary. A glacier accumulates stones. Ice amasses in rivers.

545. **HEAR,** hearken, overhear. To hear is solely the physical act of the ear. To hearken is also an act of the understanding. To overhear is to hear that which is not intended for us to hear.

546. **HEARTY,** warm, sincere, cordial. Sincere is a habit of one's nature Hearty, warm, and cordial express feelings induced only by certain circumstances, at certain times. Warm implies an affectionate regard; hearty a deep interest that comes from the heart, but not necessarily exercised toward an object of affection. Cordial indicates an extreme and sincere interest, and applies with special aptitude to the act of welcoming.

547. **HEAVY,** burdensome, weighty, ponderous. Heavy is an intrinsic quality of weight. A heavy thing becomes burdensome only when it is lifted or carried. Weighty is always positively heavy. Heavy has a relative meaning. A grain of corn is not weighty, but it is too heavy to be carried by an ant. Ponderous includes both size and weight, usually an excess of weight.

548. **HEED,** care, attention. Heed includes the idea of thinking upon the possible consequences of a mode of action. We heed the warning or counsels of others. We give attention to whatever is necessary for us to perform. We have a care for things of smaller consequence which require no forethought.

549. **HEIGHTEN,** raise, aggravate. To heighten is to make higher in the sense of taller. To raise represents the idea of lifting to a higher plane or situation. To aggravate is to make heavy, hence to increase. Applies to things disagreeable. A fever, a man's guilt or fear, may be aggravated or heightened.

550. **HEINOUS,** flagrant, flagitious, atrocious. Heinous signifies seriously violating laws either human or divine. A flagrant offense is one that defies custom and established opinion. A flagitious act is one that grossly violates the laws of good morals and decent conduct, especially if attended by profligacy. Atrocious is a crime committed under extremely aggravated conditions. "Than such atrocity can one no further go."

551. **HELP,** assist, aid, succor, relieve. Help is the general term and in almost every case could be used instead of any one of the others. Assist is used only of individuals. Aid is used in speaking of nations or bodies. Unlike the first three words, succor and relieve indicate exclusively the removal of an existing evil, while help, assist, and aid may mean also production of positive good. Succor must be personal aid, and refers to a definite and immediate action. Relieve is applied more commonly to pain and sickness.

552. **HIGH,** tall, lofty. High is the term in most common use. Tall and lofty mean extraordinary height. Tall always implies slenderness, that is, extension in a perpendicular direction only. Lofty also allows bulk or space in a lateral direction, as a tall steeple, a lofty room, or a lofty mountain. High is the general term of substitution for either of the others.

553. **HINDER,** prevent, impede, obstruct. Hinder expresses little else than delaying one's achievement of a purpose. Prevent means to hinder to the extent of rendering accomplishment impracticable. Impede implies hindering by means of confusing the action of a person or greatly increasing his labor. Obstruct suggests the presence of obstacles.

554. **HINT,** suggest, intimate, insinuate. We suggest and intimate openly. We intimate a fact because we prefer not to speak broadly. We suggest a line of conduct from a feeling of modesty or delicacy. We hint

surreptitiously at that of which we fear to speak directly. Insinuate is invariably used in a bad sense. To imply anything against the character or attainments of another is to insinuate.

555. **HOLD,** keep, detain, retain. To hold implies physical action, and may be only for a moment; is always temporary. To keep is rather the simple act of possessing, of permanently having within reach. To detain is holding back what is another's, hence is used to express delay of action caused by anything foreign to that action. To retain is the keeping indefinitely, but not necessarily permanently. Retain also indicates keeping through some change or changes of circumstances.

556. **HOLD,** occupy, possess. We hold temporarily or permanently for any purpose whatever. We occupy that which we hold for use whether it is ours or another's. We possess only that which is our own. Occupy contains also the idea of dwelling upon or within. Possess applies to anything we own.

557. **HOLD,** support, maintain. We hold by active exertion, in any direction. We support more passively. Even inanimate objects may support. Support is to hold up, or to help any one else to hold up; implies the idea of a prop. We hold our own opinions. We support another's opinions. We maintain opinions when we express them. We maintain by assertion. We support by argument. Maintain includes also the idea of money support.

558. **HOLY,** pious, devout, religious. Holy, a characteristic of the genuine Christian, heavenly minded. Pious is a less comprehensive term, consequently is applicable to a larger number. It applies to all believers in a Supreme Being whether Christian or of another belief. Pious signifies the homage of the mind and heart to a Supreme Being. Devout denotes an outward act of prayer or worship. Religious applies to those who conform to the dictates of conscience in all matters that relate to good morals and good citizenship.

559. **HUMBLE,** humiliate, degrade. To humble implies a previous eminence; literally to bring down. Degrade is used always in a bad sense morally; all vices degrade. It affects the character. Humble and humiliate apply rather to position, circumstance, and the mind or outward person, not to moral character. Humiliate is a stronger term than humble.

560. **HUMOR,** temper, mood. Temper is a permanent characteristic. Humor, a temper of the moment. Mood applies only to the temper of the mind and is a passing condition. Humor conveys an additional sense of physical cause.

561. **HURTFUL,** pernicious, noxious, noisome. Hurtful means simply full of hurt, injurious. Pernicious is positively destructive. Noxious and noisome are used only in a physical sense. Noxious is a direct bodily injury. Noisome an indirect and more subtle harm. Mosquitoes are noxious insects. Malarial fog is noisome.

562. **IDEA,** thought, imagination. An idea is a picture in the mind. We have ideas of all material things. We have thoughts upon abstract subjects. Imaginations are thoughts founded upon unrealities. Lower animals may have ideas. Insane people may have imaginations, but only rational beings can have thoughts.

563. **IDLE,** lazy, indolent. Idle is a state of being unoccupied with work. Lazy represents an aversion to labor, particularly labor requiring bodily exertion. A lazy man may work, and an idle man may want to work. Indolent indicates an inactivity of the mind due to lack of purpose or incentive. Lazy is opposed to industrious. Indolent is opposed to active.

564. **IGNORANT,** illiterate, unlearned, unlettered. Ignorant signifies not knowing. Illiterate is a form of ignorance due to an entire lack of education. A well-educated man may be ignorant of certain subjects or circumstances. Unlearned implies the lack of a higher education. Unlettered suggests an unfamiliarity with the classics of literature. Unlearned, unlettered, and ignorant may be used interchangeably in many cases.

565. **IMITATE,** copy, counterfeit. Imitate is to make a general likeness. Copy is to make an exact duplicate. Counterfeit is to copy with intent to defraud.

566. **IMITATE,** mimic, ape, mock. To imitate is a general term. To mimic is an exact imitation of manner or speech for the amusement of others. To ape is an absurdly exaggerated imitation of manner or dress, assumed for the purpose of making it appear to be one's natural expression. Mock signifies in its broader sense any form of taunting ridicule; is also used in the sense of mimic.

567. **IMMINENT,** impending, threatening. All three terms indicate approaching danger. Imminent may be sudden and only for a moment. Impending implies duration and gradual approach. Threatening is said of something impending, only when the danger is one which gives warning of its nearness.

568. **IMPERFECTION,** defect, fault, vice. An imperfection is a lack of perfection, and is rather a negative term. A defect is a positive imperfection or inability. Defective is a stronger term than imperfect. A fault is a defect for which a person may be held blameworthy. A vice is an actual stain upon the character.

569. **IMPERTINENT,** rude, saucy, impudent, insolent. Saucy, impudent, and insolent relate to the conduct of inferiors toward those above them in station or authority. Rude signifies rough, unpolished, and is often the result of ignorance or forgetfulness. Impertinent is a general term and must be always intentional. Impudent is a brazen impertinence. Insolent is the extreme of outrageous impertinence.

570. **IMPLACABLE,** unrelenting, relentless, inexorable. Implacable denotes absolutely unchangeable hatred or animosity. Relentlessness indicates the same fixity of purpose, but may be caused by adherence to principle rather than personal reasons. Inexorable may apply also to inanimate things, as death or justice. It signifies a quality of not yielding to prayers and entreaties. Unrelenting and relentless are almost identical unless, perhaps, the latter term is the stronger.

571. **IMPLANT,** ingraft, inculcate, instill, infuse. The first two words are their own definition. To implant, to set roots into the ground. To ingraft, to graft on to a plant already growing. A parent implants principles, a teacher ingrafts them. To inculcate, to teach by words, or to impress by continued repetitions of the teachings. Instill, literally drop by drop, is the gradual process of education. Permanent sentiments are instilled into the mind. Temporary excitements or feelings are infused.

572. **IMPLICATE,** involve. One is implicated who is only slightly or indirectly concerned in an affair. Involve conveys the idea of being completely entangled. Implicate, to be folded into. Involve, to be rolled up in.

573. **IMPORTANCE,** consequence, weight, moment. Things are important from the value, real or imaginary, which is placed upon them. Anything of importance because of the consequence which follows is said to be of consequence. "It is of no consequence" signifies that the result would be the same in any case. Intrinsic importance gives an action weight. Weight also implies an affair which requires deliberation. Moment bespeaks a great degree of importance.

574. **IMPUGN,** attack Impugn relates only to doctrines and opinions. Attack includes the idea of violence, and applies also to material things. We impugn with arguments; we attack with ridicule.

575. **INACTIVE,** inert, lazy, slothful, sluggish. Inactive is the unqualified and general term. Inert signifies absolutely without motion. Lazy is the dislike of physical action. Slothful is always to move slowly. Sluggish means moving as in a stupor, heavily, drowsily.

576. **INCAPABLE,** insufficient, incompetent, inadequate. Incapable, without capacity, is a permanent and inherent characteristic of the mind. Insufficient, not enough, implies limitations that may be due to youth or inexperience. Incompetent is applicable to certain things and conditions; a thoroughly capable person in certain directions may be incompetent for other kinds of work. Inadequate, not equal to, has a relative significance, and is very nearly synonymous with insufficient.

577. **INCLINATION,** tendency, propensity, proneness. Inclination refers to our first leaning towards a thing. Tendency is an habitual inclination. Propensity is a strong tendency. Proneness indicates a still stronger tendency.

578. **INCREASE,** grow. That which becomes larger by any means whatever is said to increase. To grow is to increase by means of the life principle. Figuratively, grow is a gradual increase.

579. **INCREASE,** addition, accession, augmentation. Increase is again the unqualified term. Addition is to increase by means of putting two or more things together. Accession is an accidental mode of addition. A man makes additions to his wealth, but receives an accession to his property by inheritance. Augmentation is a more formal expression, synonymous with increase.

580. **INDEBTED,** obliged. Indebted is unlimited in its application. It designates the state of owing any-

thing Obliged is restricted in its use to the owing of favors and courtesies.

581. **INDIFFERENCE**, insensibility, apathy. Indifference is a negative term denoting entire lack of preference for one thing more than another. Insensibility is a lack of feeling. Apathy is an incapacity for feeling. Apathy is an inherent, permanent characteristic of one's constitution. Indifference and insensibility may be acquired or temporary. One may be indifferent and not insensible, or insensible and not apathetic.

582. **INDISTINCT**, confused. Indistinct is simply not positively well marked, faint in outlines. Confused implies a mixing or blending of outlines of two or more objects or ideas. Anything that is confused is also indistinct, but not *vice versa*.

583. **INFAMY**, ignominy, opprobrium. Infamy is opposed to good fame. It implies public disgrace, and refers to the act rather than the person. Ignominy and opprobrium apply rather to the person. Opprobrium is an extreme degree of ignominy. Either ignominy or opprobrium may not be far reaching, but may extend throughout a comparatively narrow circle of acquaintances.

584. **INFORM**, instruct, teach. Inform is a widely extensive term. It applies to all facts of any character, and any one however ignorant may inform others of anything that he knows. Instruct refers to the serious, valuable knowledge of life. Instruct and teach are the acts of those superior in attainments or position. Teach relates more especially to the imparting of facts and various useful knowledge, rather than the act of training the mind and implanting principles, which is preferably the office of the instructor.

585. **INFORMATION**, intelligence, notice, advice. Information refers to the knowledge one has acquired. Intelligence is the ability to understand. Information is knowledge imparted of facts that have occurred; intelligence, knowledge imparted of recent facts and suggests the idea that they are not generally known. Notice is knowledge imparted of what is about to occur. Advice in this sense is detailed information.

586. **INJURY**, damage, hurt, harm, mischief. Injury is the making of anything otherwise than perfect. Damage is an injury which subtracts from the value of a thing, and applies only to physical things. Injury and hurt both apply to persons, but hurt may be only a pain and momentary, while injury is more serious. Hurt qualifies only bodily injury. Harm and mischief may apply to either persons or intangible things, and are almost identical in meaning. Mischief, however, seems to include the idea of a malicious agent, while harm may be caused by things inanimate.

587. **INJUSTICE**, injury, wrong. Injury, again, is the general term. Injustice is an undeserved injury; also it is not necessarily an injury. An unfair opinion of any one does him an injustice, but not an injury. A wrong includes both injustice and injury.

588. **INSIDE**, interior. Inside applies to bodies both small and large. Interior is used in speaking only of large bodies. Inside means rather the side that is inward. Interior refers to the space inclosed.

589. **INSIST**, persist. Insist signifies to maintain a position. Persist conveys the impression of pressing forward. To continue to do anything is to persist. To refuse to yield a point is to insist.

590. **INSTANT**, moment. An instant is the present moment. A moment may be of the past or future. Both terms are a point of time, hence have no duration.

591. **INTERCEDE**, interpose, mediate, interfere, intermeddle. One intercedes to a superior for an inferior. One interposes between equals. One intercedes to plead a request. One interposes to stop a quarrel. One mediates to settle a quarrel, to make peace. To interfere does not necessarily imply a good motive, though it may benefit. One intermeddles only from a bad motive.

592. **INTERCOURSE**, communication, connection, commerce. Intercourse is the more general term and relates to every form of interchange between persons, not between persons and things. Communication refers especially to exchange of thoughts or messages, verbal or written. Connection, literally, linked together, implies relationship, or some form of permanent intercourse. Commerce relates especially to trade and mercantile intercourse. Connection applies also to things.

593. **INTEREST**, concern. Interest is the more comprehensive term, literally, to have a share. It applies to all that touches or comes near to us. Concern applies more particularly to things of an undesirable nature and suggests anxiety. Interest is prompted by desire and pleasure or the affections. Concern is prompted by fear.

594. **JOURNEY**, travel, voyage. Journey, any trip or passage, long or short, from one place to another. Travel implies a journey involving exertion and fatigue; travel is also used in a less specific sense. Voyage relates to travel by sea.

595. **JUDGE**, umpire, arbiter, arbitrator. The judge makes decision according to prescribed law. He holds a more formal and permanent office. The other three decide according to their own judgment and are chosen for one particular case. The umpire decides contests, the arbiter and arbitrator matters of litigation. Arbitrator implies the meaning peacemaker. Arbiter is used also in the sense of controller or arranger, as, "He is the arbiter of my fate."

596. **JUDGMENT**, discretion, prudence. Judgment is the quality of being able to decide between right and wrong in general. Discretion requires an intuitive and fine discernment and includes the exercise of tact. It relates especially to our capacity for management in dealing with others. Prudence includes caution and applies exclusively to the control of our own conduct.

597. **JUSTICE**, equity. Equity contains a higher moral significance than justice. Equity is the application of the golden rule. Justice relates to the adjustment of legal rights, and denotes fairness and equality.

598. **KEEP**, preserve, save. Keep is used generally to characterize the retention of possession, to have about one indefinitely. To preserve is to keep intact or in a state of perfection. To save suggests also an act of rescue. We save from destruction. We preserve through all sorts of adverse circumstances.

599. **KILL**, murder, assassinate, slay, slaughter. Kill is the general term, meaning simply to take life. Murder is to kill unjustly or with violence, and applies only to human beings. Slay is to kill in battle or in a duel. Slaughter properly applies only to animals, but is used in reference to human beings when they are killed after the manner of brutes.

600. **KIND**, species, sort. Kind, originally of the same family, has a less definite meaning than species. Species is, in its most accurate sense, a scientific term of classification, according to well defined attributes. Kind is a more general term of discrimination. Sort does not imply necessarily any similarity, but merely the assemblage. It denotes arrangement rather than classification, and may be used either as kind or species.

601. **KNOWLEDGE**, science, learning, erudition. Knowledge implies the things known, however learned; learning, knowledge one has acquired through schools or study. Erudition is the highest term and denotes great reading and research. Science is learning which is classified, and is the exact knowledge of an orderly mind, concerning facts in nature. Erudition implies rather a knowledge of literature, philosophy, and history, though it may include all learning.

602. **LARGE**, wide, broad. Large is the general expression for dimension in every or any direction; that is, large includes length, breadth, height, and depth. Wide and broad are almost synonymous, wide being opposed to close, and broad to narrow, hence wide is used more properly in speaking of apertures, as a wide mouth, a wide door.

603. **LAST**, latest, final, ultimate. That which is last or ultimate is succeeded by nothing else. Latest implies that which is succeeded by only a short interval of time. Final suggests the completion of a task or plan. Last is opposed to first, latest to earliest, final to the beginning. Ultimate suggests completion. A man's last words are not necessarily his ultimate verdict.

604. **LAUGH AT**, ridicule. Laugh at is a natural expression of mirth excited by the actions or traits of another. Ridicule conveys a greater degree of contempt and shows itself in words or writings or actions. Laugh at may be involuntary. Ridicule is a positive action directed by the will.

605. **LAUGHABLE**, ludicrous, ridiculous, comical, droll. Anything that excites laughter is laughable. Ludicrous and ridiculous suggest a laughable situation of a person, ridiculous, however, being much the stronger term and relating to actions or mental attitude, while ludicrous refers more to one's outward appearance or position. Comical and droll properly designate things or the antics of animals rather than persons.

606. **LAWFUL**, legal, legitimate. Lawful pertains to law in general. Legal is a more definite term and relates to civil law. Legitimate is of broader significance and applies to unwritten law or generally accepted

rules. Thus one says legitimate art, legal documents, lawful acts.

607. **LEAD,** conduct, guide. One leads by the hand, conducts by the mind, guides by the eye. Hence conduct includes the idea of planning and managing. Lead implies helping one weaker than one's self. Guide is simply to point out the way. One could lead a child who knew the road, or guide a strong man who did not know the road.

608. **LEAN,** incline, bend. That which leans rests on one side. Lean suggests the need of a support. Incline implies simply to deviate from the perpendicular or horizontal, be it ever so slightly. Bend suggests curvature. Trees bend with the wind. A hill inclines. An old man leans on his cane.

609. **LEAVE,** quit, relinquish. One leaves that to which he may return. To quit is final. To relinquish is to quit unwillingly.

610. **LEAVE,** take leave, bid adieu, bid farewell. Leave designates simply the act of separating one's self from anything. Take leave is an expressed ceremony of parting between persons. Bid adieu and bid farewell are a solemn leave-taking, and indicate a permanent or at least a long and uncertain separation.

611. **LEAVE,** liberty, permission, license. The word leave is used in small matters. Liberty, as here used, suggests infringement on the rights of another. License is legal permission. Permission is a more general term, and may be either public or private. Leave is always private.

612. **LET,** leave, suffer. Let implies simply the passive part of not placing hindrance on the actions of another. Leave signifies rather an active removal of constraint, or a positive decision not to interfere. Suffer is the strongest term, and refers to one's attitude towards those over whose actions he has the right to exercise control.

613. **LIE,** lay. Lie is an intransitive verb, and lay a transitive verb. A creature lies down, but he lays himself down. I lie on the couch. I lay the book on the table.

614. **LIFT,** raise, erect, elevate, exalt. We lift that which we take off the ground. We raise and erect by placing in a higher position while it remains on the ground. Erect signifies raising to an upright position and contains also the idea of construction. Elevate implies raising from a lower point to a higher, and is used more often in a figurative sense. Exalt applies always in a moral sense. One's soul may be exalted.

615. **LIKENESS,** resemblance, similarity, similitude. Likeness is a general term and refers to either external or internal circumstances. Resemblance applies only to outward appearance; and similarity only to the invisible qualities. There may be a resemblance of face, but a similarity of disposition. Either is a likeness. Similitude is a more poetic term than similarity; has also a higher significance.

616. **LINGER,** tarry, loiter, lag, saunter. We linger from reluctance to go on and usually against our ideas of what we should do. We tarry deliberately. Hence linger suggests the thought of continually intending or starting to move, while tarry implies complete suspension of motion. To loiter is to move slowly and with reluctance. To lag is to go slower than others. Thus we can loiter when we are alone, but we lag only when we are in company with others. To saunter is to loiter aimlessly or without any destination in view.

617. **LIST,** roll, catalogue, register. List is the most simple, and implies merely names or words written one under the other. Roll is used only for names of persons. Thus we may have a list of names, a list of the trees in a certain locality, a list of verbs, but a roll of honor. A catalogue contains more details and specifications than a list, while a register is a complete record of the names on the list.

618. **LITTLE,** small, diminutive. Little is the most general term, and refers to both size and quantity. Small has reference only to size. One may say a little water or a little dog, but one may not substitute small in the first example. Diminutive is small contrary to the natural course. All babies are small, but not all are diminutive.

619. **LOOK,** see, behold, view, eye. See is the mechanical action of the eye. Look is a voluntary effort to see. We may see without looking and *vice versa*. A blind person may look towards an object. Behold includes the idea of an impressive mental sensation. To view is to look at in all directions, comprehensively. To eye is to look at shrewdly or earnestly.

620. **LOOK,** appear. To appear is simply to come into sight. One's look implies the impression one's appearance makes. Also one's appearance refers to one's manner and deportment and the characteristics thus indicated, while looks refers to the external face or figure. She looked beautiful. She appeared charming. And, in the first sense, he appeared suddenly and looked hideous.

621. **LOOSE,** vague, lax, dissolute, licentious. Loose is the general term, and applies to anything that lacks proper connection or adherence of its parts. Whatever is remotely scattered is vague. Vague applies only to the intellect. Dissolute and licentious refer only to the morals. Lax may designate either. Lax suggests the quality of being unbound. Dissolute is the extreme of loose; licentious is the extreme of lax. In modern use licentious applies exclusively to sexual immorality, while the other words include looseness of all moral principles.

622. **LOSS,** damage, detriment. Whatever has gone from us that we want to keep is a loss. Any object that is injured to the extent of decreasing its value is damaged. A detriment is a lack, whether by loss or damage or through never having possessed.

623. **LOW,** mean, abject. Low is below the ordinary level. Mean is at the ordinary level. Abject holds also the idea of submission, and is not an inherent quality. Low and abject may be involuntary. A man is voluntarily mean. A servant is low in station, but he is not necessarily abject. A slave is abject in his condition but not necessarily so in his nature; while a king may be abject through cowardice or fear. Abject is, literally, cast down.

624. **MAKE,** form, produce, create. Make is an unqualified term, and signifies the bringing into being of anything. To form is to give a shape to, to make according to a pattern. To produce is to bring into existence, usually by changing the qualities of its parts. Fire is produced by friction; corn is produced from the earth: a vase is formed from clay. Also a thing may be formed without the means of a conscious agent,—rocks are formed. In the literal sense only the Supreme Being can create. All the words are used figuratively.

625. **MALEDICTION,** curse, imprecation, execration, anathema. A malediction is a spoken evil wish. An imprecation is a prayer for evil. A curse is a solemn or ratified malediction, and also represents varying degrees of evil, and may be an act either of God or man. An execration is an informal expression of the most violent personal anger. An anathema is an execration pronounced by an authoritative body or person according to canon law. Only man pronounces a malediction, an imprecation, an execration, or an anathema.

626. **MALEVOLENT,** malicious, malignant. Malevolent characterizes an inherent quality of one's nature and is therefore constantly active. Malicious represents a quality that may be temporarily roused. A malicious person takes pleasure in causing pain to others, while a malevolent person works evil as a matter of course. One might say that to a malevolent person his malevolence is a necessity; but malice to a malicious person is a luxury. Malignant is properly applied to the evil itself rather than to the person.

627. **MALICE,** rancor, spite, grudge, pique. Malice takes delight and pleasure in working evil. Rancor is unremitting anger and may have been justly or unjustly provoked. Petty malice, malice in trivial things, is spite. A grudge includes the idea of revenge for some particular injury and may be of long standing. A grudge may be satisfied by a single revengeful act, and then cease to exist. A pique is short lived, and not deep seated. It is caused by any trifling affront.

628. **MARITIME,** marine, naval, nautical. Maritime signifies belonging to the sea. It can be applied to countries which have great intercourse by sea, or to commerce by sea, and is a broader term than marine, which signifies directly pertaining to the sea, and is used entirely in a technical sense. Naval refers to the government navy maintained on the sea, or it may designate commercial arrangements, but is more frequently used in the former sense. Nautical pertains to the science of sailing, or navigation, or the mechanical ship.

629. **MARK,** print, impression, stamp. Mark has a universal application, and signifies anything which in any way alters the external face of anything. Stamp is made by direct pressure, and by an artificial instrument. Print is either an artificial or natural impression, made either by design or accident. A print has always a definite form and represents an object or a sign. An impression is properly a sinking in of the mark. Impression and stamp are both used figuratively. Otherwise print and impression are almost always exactly synonymous.

630. **MARK,** trace, vestige, footstep, track. As above, mark is the term of general significance. A faint

mark or one broken in outline is a trace. Vestige applies only to those definite traces left by mankind, as the marks remaining of an earlier race of people. Footstep is the impression made by the foot of a creature. A track is any kind of mark by which we can trace the path taken by anything, but applies more strictly to the impression left by feet, or wheels, or whatever comes in contact with the ground.

631. **MARRIAGE,** wedding, nuptials. Marriage is simply the act of marrying. Wedding is the ceremony and attendant festivities of marriage. Hence one may have an elaborate wedding or a simple wedding, but the marriage is the same. Nuptials includes the idea of both marriage and wedding.

632. **MARRIAGE,** matrimony, wedlock. Marriage refers rather to the act of marrying. Matrimony is the state of being married. Thus one can say marriage is the necessary step toward matrimony. Wedlock is used instead of matrimony in modern speech when it has a legal significance.

633. **MAXIM,** precept, rule, law. A maxim is a self-evident moral truth. A rule is an inflexible guiding principle, and may have reference only to the conduct of affairs, without involving any moral phase. A precept is both a maxim and a rule. Precept applies to those principles which form character. A law is from a higher authority than rule. The government rules are laws. We may speak of the laws of God, the rules of good breeding, the precepts of Jesus. Precepts are taught. Rules are to be obeyed.

634. **MELODY,** harmony, accordance. Melody is a succession of single musical tones. Harmony is a succession of chords. Accordance is the necessary quality of harmony, but it is the technical word meaning merely agreement of sound. Harmony has a wider significance. Harmony becomes the science of musical composition in its technical sense. All three terms are used figuratively.

635. **MEMORY,** remembrance, recollection, reminiscence. Memory is simply the act of the mind in recalling images, whether voluntary or involuntary. Remembrance is the conscious exercise of memory. Recollection is remembrance in a greater degree. Animals may have remembrance, but only man has recollections. Recollection suggests the recalling to one's memory incidents and visions of the distant past. Remembrance is the more ordinary exercise. We remember our lessons. We remember to put on overshoes. We recollect our childhood's home. Reminiscence is the remembrance of things purely intellectual.

636. **MULTITUDE,** crowd, throng, swarm. Multitude applies to great numbers of anything; crowd, throng, and swarm to animate objects; crowd and throng to human beings. A multitude is always large. Crowd signifies rather pressing close together. So a few people in too small a space form a crowd. One can say, a small crowd. A crowd in motion is a throng. Swarm suggests more rapid motion, and applies literally only to insects, as a swarm of locusts. It is used figuratively in reference to other creatures.

637. **MUTILATE,** maim, mangle. To mutilate is to remove any part. Maim originally applied only to wounds in the hand, but is generally understood in the present day to mean a wound in any of the limbs, or any infirmity which deprives a man of the use of a limb or an extremity. Mangle refers to irregular wounds or gashes in any part of the body.

638. **NAME,** call. To name is to say the name. To call is the use of any sound. Also to name describes a person's name. To call describes a nickname or a characteristic. The emperor was named Nero; he was called a monster. He was named William; he was called William the Conqueror.

639. **NECESSARY,** expedient, essential, requisite. Necessary is the indefinite term. Expedient suggests the exercise of discretion. A course of action which is expedient may or may not be followed; while it is necessary to the best results, it is not inevitable that it occur. Requisite is a stronger degree of necessity. Essential implies a vital necessity. Essential, the essence, is the strongest possible degree of necessity.

640. **NECESSITIES,** necessaries. The necessary is that which is absolutely necessary, regardless of circumstance. Water is a necessary of life. Necessities are the things which are necessary through circumstances; they may be artificially created. To those who live for fashion alone luxuries become necessities.

641. **NECESSITY,** need. Necessity refers to the thing wanted; need, to the person wanting. Need may apply to a temporary lack; necessity more properly to habitual lacks. We may need greatly that which is not a necessity.

642. **NEGLECT,** omit. To neglect is a culpable act. To omit may be permissible. We omit or not at our discretion. We have no right to neglect.

643. **NEGLIGENT,** remiss, careless, thoughtless, heedless, inattentive. The first two words refer to the act, the others to the state of the mind. Negligent is a stronger term than remiss. Remissness may be due to forgetfulness. Negligence applies to those things constantly in view. One is careless in trivial matters; one is thoughtless in matters of greater moment, matters that have to do with conduct. Heedless denotes a lack of caution; thoughtless, a lack of reflection: inattentive, a lack of attention. Careless includes the idea of lack of desire: one is careless when he does not care. There are times when heedlessness and inattention are not culpable. It shows a nobility of soul to be heedless of unavoidable discomforts, or inattentive to small slights.

644. **NEIGHBORHOOD,** vicinity. Vicinity has the wider meaning; it refers to the country round about. Neighborhood applies to one's immediate vicinity; it also includes the people living near. Vicinity is used to designate only the place in general.

645. **NEW,** novel, modern, fresh, recent. New is the general term, meaning anything that is not old. Novel contains the idea of something out of the ordinary. A new baby is certainly not a novelty. Modern is used in contrast to that which is old fashioned or out of date. Fresh includes the idea of condition. New vegetables are not necessarily fresh. An old man may have a fresh color. Recent is used to designate that which has just occurred; it relates to happenings and applies properly to news.

646. **NOTED,** notorious. Noted signifies well known. Notorious is used only in a bad sense, and applies only to those who are noted for evil deeds and vices.

647. **NOTICE,** remark, observe. We may notice casually. To remark implies a return of the mind to the subject. To observe one must examine closely. We notice and remark involuntarily. When we observe, we make a special effort.

648. **OBJECT,** oppose. We object to that of which we disapprove. We express objections by words. We oppose by actively placing obstacles in the way. We express opposition by acts and positive effort to thwart.

649. **OBSERVATION,** observance. Observation is the act of examining an object with the eyes. Observance is the act of keeping with care or holding it sacred. By a close observation of affairs, one cultivates a shrewd judgment. The observance of July fourth serves to keep the patriotism of our forefathers fresh in the minds of our children.

650. **OBSERVE,** watch. To observe is to look at consciously. To watch is to observe keenly with suspicion, or at least from some particular reason for strictness. We may observe listlessly or idly. We watch alertly.

651. **OBSTINATE,** contumacious, stubborn, headstrong. Obstinacy is not necessarily a fault. It is the rather negative quality of adherence to one's own line of action, or set of opinions. Stubborn is a stronger term and implies force. Headstrong implies lack of judgment. Stubborn is perversion of will, headstrong a perversion of judgment. Contumacious signifies violent opposition to those in authority and is always a crime against lawful restraint.

652. **OCCASION,** opportunity. Occasion leaves us no choice of action. We must do as occasion requires. Opportunity tempts us to action, but we may or may not respond. The opportunity offers, or we seek it. The occasion demands of us, and comes of itself.

653. **ODD,** uneven. Odd is to be without a mate. Uneven is to be unequal. Thus odd comes to mean a person who has peculiarities like no one else. Both words are opposed to even.

654. **OFFENDER,** delinquent. Offender is one who positively offends, or goes against the law. A delinquent is one who fails by omission to do what is required, hence delinquent is sometimes used in a legal sense to denote a lawbreaker.

655. **OFFER,** bid, tender, propose. Offer is the general term, and is employed for that which is literally transferable. To offer is a voluntary and discretionary act and may be accepted or rejected. Bid implies a commercial transaction, as to offer a price for the purchase of a house. To tender is to offer in words or to present for acceptance, as a sum of money by way of payment, or to fulfill an obligation; one may also tender his services. Terms of settlement and arrangements or plans with specifications are proposed, also a certain line of action may be proposed.

656. **OFTEN,** frequently. Often signifies a repetition of action. Frequently has relation to a plurality

of objects. A man often errs. People frequently make mistakes. We frequently meet the same persons in the route which we often take.

657. **OLD,** ancient, antique, antiquated, old fashioned, obsolete. Old includes all the other terms. Anything very old is ancient. Anything long ancient is antique. Anything no longer in the fashion is old fashioned. Whatever is extremely old fashioned is antiquated. Obsolete implies gone out of use. It more often refers to customs and words.

658. **OPENING,** aperture, cavity. Opening is the general term, meaning any place that is open. There may be an opening in the woods. Aperture is a small opening into some specific inclosure. The cavity is the inclosure. The aperture is the opening leading to the cavity.

659. **OPTION,** choice. Option is the power of choosing. Choice is the act of choosing. Option implies an uncontrolled act of the mind. Choice is simply an act of the will.

660. **ORIGIN,** beginning, rise, source. Origin refers to the cause of existence; beginning to the period of existence. The origin must be before the beginning. The rise includes also the gradual progress of the early stages of existence. The origin exists but once. The source is permanent. Thus, if the source of a river is destroyed, the river ceases to exist.

661. **OUTLIVE,** survive. To outlive means simply living longer than another. Strictly speaking survive—live after—is used more to designate life continued after hardships. Few men can survive the bitter cold of the arctic regions. Only seventeen persons survived the devastating plague. But the two words are used interchangeably in many instances.

662. **OVERFLOW,** inundate, deluge. To overflow, flow over; inundate, flow into; deluge, wash away. The wash tub or the river may overflow. A cellar may be inundated by an extra heavy rain. A deluge carries all before it.

663. **OVERTURN,** overthrow, subvert, invert, reverse. To overturn is to turn over gradually or otherwise. To overthrow is to overturn with violence. Either of these two actions may place a thing on its side. To subvert is to turn that under which should be upward. To invert is to place on its head that which should be on its feet. All these terms have to do with the perpendicular. Reverse is to place that before which should be behind. Subvert is used only of things of great importance. One inverts a plate, he reverses the action of a locomotive engine.

664. **OVERWHELM,** crush. To overwhelm is to cover with a heavy body so that one sinks under it. To crush is to destroy the shape or consistency by violent pressure. An avalanche overwhelms an entire settlement and many houses and people are crushed beneath it. A wagon may crush a man by rolling over him but he is not overwhelmed.

665. **PACE,** step. Pace is the manner of moving the body in passing. Step relates to the manner of moving the feet. The pace is a walk or a run. It is fast or slow. The step is long or short, light or heavy. In measurement, the pace is a long step, the step is the length of the ordinary step made without effort.

666. **PAINT,** depict. Paint, to represent scenes or figures on paper or canvas. Paint is also used figuratively, as to paint scenes to others by means of words. Depict is used only in the figurative sense.

667. **PALE,** pallid, wan. A lack of color where color might be expected is pale. Pallid is an excess of paleness. Wan is pallid to the point of sickliness. It also suggests the state of having a wasted look.

668. **PARABLE,** allegory. Both terms denote a story told in illustration of a truth. A parable is a story presented in a simplified form to illustrate a moral truth. But everything is represented in its proper nature. In an allegory, mental and moral attributes and personal characteristics are personified; or the characters are represented by something else. "I am the vine, ye are the branches," is a spoken allegory.

669. **PART,** division, portion, share. Part is the general and indefinite term. Portion is always the result of dividing. Division is used as portion, also to designate the act of dividing. Share signifies the portion to which one is entitled. A part is not necessarily a division. A part may be complete in itself, as the parts of an engine. The parts of a book are the leaves and the binding; the divisions would be certain sections of the reading matter.

670. **PARTAKE,** participate, share. To partake is to take a part to one's self. To participate is to enter into. We partake of a meal with a friend. We participate in his happiness. To share is to take that to which we are entitled. It is also used in the opposite sense,—to share with another, *i. e.*, to give part to another.

671. **PARTICULAR,** singular, odd, eccentric, strange. That which is particular belongs to some special part or place. What is singular is single, or the only one of its kind. Anything odd has no mate. Eccentric signifies out of the center, and is used to designate singularity to the point of lack of mental balance. Strange indicates that which does not belong to this part or place, alien.

672. **PATIENCE,** endurance, resignation. Endurance relates to the act. Patience relates to the state of mind.

> There was never yet philosopher
> That could endure the toothache patiently.
> —*Shakespeare.*

If we endure without complaint and with a serene mind, we have patience. Endurance is simply strength to bear. Resignation comprehends also the idea of conformity of will. We can be patient under injustice, but, in order to be resigned, we must be in a state of mind that sees no injustice.

673. **PATIENT,** passive, submissive. To be patient is a virtue. Passive is the state of enduring weakly or indifferently. Patient implies an act of the will. Submissive is the state of yielding to superior authority or force. Submissive is opposed to contumacious.

674. **PEACE,** quiet, calm, tranquillity. Peace is a necessary quality of all the other terms. Peace denotes a state of no hostility. Quiet implies freedom from noise. Calm refers rather to the state of the mind. Tranquillity is a condition of extreme calm. Both calm and tranquillity express absence of motion as well as absence of noise.

675. **PEEL,** pare. To peel is to remove the skin. To pare is to trim or make smooth. A potato is peeled after it is boiled. It is pared before it is boiled. We pare our nails, we peel an orange.

676. **PENETRATE,** pierce, perforate, bore. To penetrate is to go into a substance. Rust penetrates iron. Fog penetrates the air. Pierce commonly suggests penetrating by means of a sharp point. Ordinarily, perforate indicates numbers of piercings. A perforated surface is full of comparatively small openings. Bore is to make a hole by means of a rotary instrument. A dagger pierces, a gimlet bores.

677. **PEOPLE,** populace, mob. People is the general term denoting simply human beings in the aggregate. Populace is a vast assemblage of people. Mob is used to designate what is low, hence a turbulent crowd of people.

678. **PEOPLE,** persons, folks. As above, people comprehends persons in the mass. Persons has an individual sense. One may say one person, five or six persons; but such people. Folks is almost synonymous with people, but is generally used in a more familiar sense; derivatively, the common people.

679. **PERCEIVE,** discern, distinguish. We perceive that which is obvious. We discern that which is more or less hidden. We distinguish in order to know one thing from another. We perceive colors, shapes, or the truth. We discern motives, characters, consequences. We distinguish shades of the same color. The owl cannot distinguish objects by daylight.

680. **PERCEPTION,** idea, conception, notion. We have a perception of that which is before us. When the object is removed we have an idea of it. We have a conception of what we have never seen. A notion is what we think the thing is, judging by its appearance.

681. **PERISH,** die, decay. To die is simply to cease to live. To perish is to have its substance dissolved or disintegrated. Thus wood may perish but it does not die. Decay expresses the process of gradual destruction or disintegration of substance. A thing may perish suddenly. Decay takes time.

682. **PERPETRATE,** commit. Perpetrate is much the stronger term. One perpetrates a crime; he commits an error or an offense.

683. **PERSUADE,** entice, prevail upon. Persuade implies causing the will to yield. That is not necessary in the use of prevail upon. One may be prevailed upon by force or authority. Persuade is to coax until one voluntarily consents. One persuades by words. One entices by words or actions. Entice is commonly used in a bad sense.

684. **PILLAR,** column. Modern use recognizes little difference of meaning in these two terms. Derivatively, a column is a pillar which is also a prop or support, but the best modern authorities recognize no such distinction.

685. PITEOUS, doleful, woeful, rueful. Piteous describes the expression of suffering; the child wept piteously. Doleful relates to those expressions or sounds which suggest pain or melancholy; the doleful cry of the sea birds. Woeful has a wider application, referring rather to one's circumstances; hungry, cold, and friendless, he was certainly in a woeful plight. Rueful expresses regret rather than actual pain, and applies to the expression of one's face; one looks rueful when he loses his train, or spoils his best hat.

686. PITIABLE, piteous, pitiful. Pitiable is deserving of pity, and is consequently always used in a good sense. Piteous implies helplessness. Pitiful implies worthlessness. One whose situation is pitiable is unfortunate. One whose circumstances are piteous is incapable. One who makes pitiful shifts to get along is small and mean.

687. PITY, compassion. Pity indicates an inferior object. We pity a man of weak intellect. We feel compassion for those who are unfortunate. We pity our inferiors. We compassionate our equals. Pity is allied to contempt.

688. PITY, mercy. We pity those who are innocent and those who are guilty. Pity may be unexpressed by action. Mercy is action prompted by a sentiment. We have mercy only for the culpable.

689. PLACE, station, situation, position, post. Place is the general and indefinite term, denoting any space that may be occupied. A station is a definite place, a stated place. Situation and position include the place and the thing that occupies it. Situation comprehends the site, and is used to denote the way an object stands in relation to its surroundings; the house is in a fine situation. Position indicates the way an object stands in relation to itself; as, "That man has an awkward position." A post is a place in which one has a specific duty to perform.

690. PLACE, dispose, order. To place is to put in a place, any place. To dispose is to place according to a rule, or some special plan. To order is to place after some carefully arranged plan. Things carefully ordered may not be disposed to the best advantage.

691. PLACE, spot, site. A place is indefinite. A spot is a particular place. A site is a place considered as a situation and is generally used in connection with buildings; as, a fine site for a church. A spot is comparatively small.

692. PLAY, game, sport. Anything done for recreation and amusement is play. Game is systematic play according to rules. Sport is any recreative employment that demands bodily exercise. Chess, croquet, and cards are games. Riding, rowing, shooting, and skating are sports. Golf is both a sport and a game.

693. PLEASURE, joy, delight, charm. Pleasure is the general term comprehending all the others. Anything that pleases gives pleasure. Pleasure varies in degree. Joy and delight are always extreme degrees of pleasure. Joy is produced by the exercise of the affections; delight, through either the affections or the intellect. Delight is more intense than joy and depends upon the temper of the person. We feel the charm of things which attract us toward them. Thus we take delight in her society, but we are charmed by her personality.

694. PLENTEOUS, plentiful, abundant, copious, ample. Plenteous and plentiful are exactly synonymous in meaning full or filled. Plenteous is used in the grave or poetic sense. Plentiful is the familiar word. Abundant, to overflow, means more than plentiful. Copious is used to designate what is collected in one point, hence is used more often to describe that which may flow, or be poured, as a fluid. Ample signifies that which is capable of expansion, what may be increased or diminished at will. We say, a plentiful harvest, plenteous mercy, copious flood.

> Kindly pours its copious treasures forth.
> —*Thomson.*

695. PLUNGE, dive. To plunge is to suddenly submerge one's self in the water. To dive is to go to or toward the bottom of the water. One may plunge without diving, or *vice versa*. Used figuratively, plunge is an act of recklessness; dive is a preconsidered action.

696. POISE, balance. Poise is an equilibrium maintained in relation to itself. Balance is an equilibrium maintained in relation to other things. One poises one's self. One balances one's self opposite another, or one balances other things. One loses his balance when other things change or shift their corresponding weight and he falls. He loses his poise when he falls without any external, active cause.

697. POISON, venom. Poison is anything which destroys the system. Venom is a virulent poison. Poison must be administered internally. Venom may be applied externally. The air we breathe may be poisonous, but it cannot be venomous.

698. POLITE, polished, refined. Polite indicates a behavior which is always agreeable to others. Politeness which is acquired by art is polish. A man is polite according to the rules of good society. He is polished by force of circumstances. Polite and polish apply only to the exterior. Refined extends to the mind and nature of a person.

699. POSSESSOR, proprietor, owner, master. Proprietor is synonymous with owner except that owner is used for trivial things. Proprietor and owner denote the legal right of control. Possessor indicates the actual having about one. Thus one may say, "I am the owner of that book, but Mr. Blank possesses it at present." Master signifies absolute control and ownership. An insane person may be the proprietor of an estate, but he is not allowed to be master of it.

700. POSSIBLE, practicable, practical. Anything that can be done, however difficult, is possible. That which can be practised is practicable; that is, what may be brought into habitual use. Practical is that which is practised. Practical is opposed to theoretical.

701. POVERTY, want, penury, indigence, need. Poverty is the general term, and means opposed to wealth. Indigence is a nearer approach to extreme destitution than poverty. Penury is the last extremity of poverty. Need and want apply to a temporary condition which may be relieved by a single act. Want is a stronger term than need. One is in want who lacks the necessaries of life. He who is in need may lack only the comforts. Need and want are used also to indicate a lack of anything by a person not necessarily in poverty.

702. PRESSING, urgent, importunate. One's affairs may be pressing or urgent. Pressing is the stronger term, implying compulsion. Urgent appeals to our feelings and implies persuasion. Importunate is used only of persons. Beggars may be importunate. Importunate is urgent to the point of irresistibleness.

703. PRESUMPTIVE, presumptuous, presuming. Presumptive is used in a good sense. The presumptive heir; that is, one who is expected to be heir. Presuming and presumptuous both indicate an unauthorized taking upon one's self of authority or position. Presumptuous is the stronger term. Also, presuming applies to one's nature. Presumptuous has reference to special acts. He is a most presuming person. His conduct was presumptuous.

704. PRETENSE, pretension, pretext, excuse. Pretense is a concealment of what is bad. Pretension is display of what is good. Pretext is a pretense used as an excuse to accomplish or conceal actions really culpable or criminal. A pretense may conceal only a mild fault. Pretext holds always the idea of a means to an end. Excuse may be a perfectly legitimate reason or explanation of any act which is a breach of etiquette, or a violation of generally accepted rules.

705. PREVENT, obviate, preclude. That which one prevents does not happen. That which one obviates is rendered unnecessary or removed. In ordinary modern use, preclude is to make impossible in the nature of things. A boy is prevented from running a foot race by any obstacle, by the prohibition of his father, by lack of racing shoes, etc. He is precluded by a broken leg.

706. PREVIOUS, preliminary, preparatory, introductory. Anything that happens before is previous. Preliminary is used in speaking of contracts; preliminary articles, preliminary condition. Preparatory implies making ready for what is to follow. Introductory relates to making plainer that which is to follow, hence is used in matters of discussion and literature; introductory remarks.

707. PRIDE, vanity, conceit. Pride applies to anything; vain, to one's appearance; conceit, to one's talents or mental attributes. Pride may be an entirely proper sentiment. One has pride in work well done, a superiority of position, family, literary or scientific attainments, or wealth. It is only an excess of pride that is culpable. One is vain of his clothes. One is proud of that which he has. He is vain or conceited of that which he only thinks he has.

708. PRIVACY, retirement, seclusion. Privacy is opposed to public, and indicates the state of attracting no notice. Retirement indicates a privacy positively sought, a withdrawal from the society of others. Seclusion is the extreme of retirement. Nobody has access to one who lives in seclusion.

709. PROGRESS, progression, advance, advancement. Progress applies to a continual going forward. Advance signifies going forward toward a definite goal

that may be reached. We make progress in learning, to which there is no end. A man intending to be president of the United States may be said to have made advance when he becomes governor of his own state. Progression and advancement imply also the act of moving forward. He made great progress last year. The progression or advancement from one point to another was necessarily slow.

710. **PROMINENT,** conspicuous. Whatever projects beyond the level or line of other things is prominent. That which is easy to be seen by many is conspicuous. The nose is the most prominent feature, but it is never conspicuous unless it is misshapen, highly colored, or in some way abnormal.

711. **PROMISCUOUS,** indiscriminate. Promiscuous signifies mixing of different things. Indiscriminate applies to the action in which one does not discriminate between different things. One is promiscuous in his company when he associates equally with everybody. He is indiscriminate when he exercises no choice between desirable and undesirable persons.

712. **PROOF,** evidence, testimony. Proof is incontrovertible. Evidence furnishes or tends to furnish proof. Proof is exact, hence is used scientifically. Testimony is evidence by means of spoken or written words. Evidence is offered by anything. Only a person can give testimony.

713. **PROROGUE,** adjourn. Prorogue is to defer indefinitely. Adjourn is to adjourn for a day or a short period of time. Prorogue relates to national assemblies. Adjourn applies to any meeting. Congress or other governing body is adjourned every day. It is prorogued when a ruler or executive terminates its session for the season.

714. **PROVE,** demonstrate, evince, manifest. Prove is the general term. We demonstrate when we prove by intellectual effort. Only persons can demonstrate. We evince to produce conviction. We manifest to make a thing known. We evince by our daily habit of action. We may manifest by a momentary act. We demonstrate and prove facts in science or nature. We evince or manifest a disposition. Things may prove, evince, and manifest.

715. **PROVIDE,** procure, furnish, supply. Provide and procure are the acts of persons only. Furnish and supply may be the acts of unconscious agents. We provide for the future. We procure when by the exercise of labor or management we get anything, whether needed or not. Furnish implies a care in selection. Supply is to furnish that which is lacking.

716. **PUBLISH,** promulgate, divulge, disclose, reveal. To publish is to make public. Promulgate is to make known to the world, or to as many as possible. Modern use gives to promulgate also the suggestion of teaching and imparting. He who promulgates doctrines does more than publish them; he also tries to gain converts. We divulge that which should be kept secret. We disclose an affair from beginning to end. To disclose is to lay bare a whole transaction. We reveal that which has been concealed. It is not culpable to reveal. We divulge secrets. We reveal mysteries.

717. **PURPOSE,** propose. We purpose trivial things. We propose important things. Purpose is to intend. Propose is to express our intention by setting it forth definitely either to others or in our own minds.

718. **QUESTION,** query. Questions may be asked out of curiosity. Queries are put to gain information. A question may be frivolous; a query is rational and serious.

719. **RARE,** scarce, singular. Derivatively, rare means thin. Scarce means cut short. Hence rare is used in speaking of atmosphere when it is lighter in weight than normal. Scarce used in that connection would mean limited in quantity. Rare is applied to luxuries. Scarce to articles of ordinary use or necessity. Jewels are rare but not scarce. Scarce always suggests a deficient supply. In times of famine bread is scarce. Scarce applies only to material things. Singular is merely peculiar or different from others of its kind. Rare always suggests high value. What is singular may be highly undesirable.

720. **READY,** apt, prompt. Ready is applied to that which is prepared for any set purpose. Apt is a kind of readiness which implies one's equipment; literally, fit. Prompt denotes that readiness which consists of quickness. Thus, one who has a ready wit is apt in conversation. One who is prompt is not late, is habitually on time, hence always ready for his appointments. We make ourselves ready for a journey. Apt and prompt refer only to persons. Ready is a general term, and applies to anything.

721. **RECKON,** count, account, number. Reckon is to reach an accurate result by summing up the factors, hence is used figuratively, "Reckoning themselves absolved by," etc. Count is the simple act of determining how many. Number implies the additional act of tabulating or labeling. Account signifies the necessary arithmetical calculations attendant upon keeping one's books. All the terms have a figurative application.

722. **REDEEM,** ransom. Redeem is the general term. Ransom applies only to persons. We ransom with money. We redeem with any equivalent of money. Ransom is used most frequently in connection with prisoners of war.

723. **REDRESS,** relief. Redress signifies literally to bring back to the former point. Relief is to help. Hence redress applies to matters of law and justice; relief, to matters of kindness and compassion. People are entitled to redress for their wrongs. They are dependent upon their own exertions or the generosity of others for relief from their sufferings.

724. **REDUCE,** lower. Reduce, to change the condition of anything by making it less in size, quality, quantity, or rank. Reduce to powder. The fever was much reduced. He was reduced from colonel to captain. To lower is to change the position of anything by making it less high. We lower a bucket into a well; we lower a wall. In their figurative sense the same idea is conveyed. Reduce is the stronger term. One is reduced to his last extremity. He is lowered in the estimation of his friends.

725. **REFUSE,** decline, reject, repel, rebuff. Refuse is the common and general term. Decline is to refuse gently and with courtesy. Reject is a more positive and decided refusal. We decline an invitation to drive. We reject a dishonorable proposal. Repel is to refuse violently. Repel indicates an active antagonism. To rebuff is to refuse with rudeness and scorn or contempt.

726. **RELATE,** recount, describe. We may relate anything. We recount that in which we have borne a part or in which we have a deep interest. We recount that which is remotely in the past. We may relate in writing; we recount only by speech. We relate and recount that which passes. We describe that which exists. We relate the story of our journey. We describe the country we passed through or the car which carried us. We recount our adventures. We describe the places where they occurred.

727. **REMAINS,** relics. That which remains unused or unconsumed is the remains. That which is left after a long lapse of time is relics. Relics always have a value derived from their original state or owner. Remains may or may not be of value. There are remains of buildings after a fire. The uneaten food still on the table is the remains of the feast. Old monasteries contain precious relics of the saints.

728. **REPEAT,** recite, rehearse, recapitulate. Repeat, to go over again, is the more common term. Recite is to repeat from memory. Rehearse is to repeat or recite in order to prepare or learn a part. Recapitulate is to repeat in an exhaustive manner, to go into the minute particulars. Recapitulate is not to repeat word for word, as recite; but rather to repeat statements or specifications.

729. **REPENTANCE,** penitence, contrition, compunction, remorse. Repentance is the general term. We repent a sin, a mistake, or an error of judgment. We feel penitence only for sins. Contrition is a continuous penitence and denotes an habitual state of mind. Compunction is momentary and occasional. Remorse is an excessive contrition and causes anguish. Compunction causes a sharp, temporary sorrow. Contrition causes sadness.

730. **REPRIEVE,** respite. Reprieve, to take off that which has been laid upon, is permanent. Respite is a temporary cessation. A condemned man who is granted a new trial gains a respite. If his sentence is commuted he has a reprieve.

731. **REST,** remainder, remnant, residue. Rest comprehends the meaning of all the other terms. Remainder applies only to things. The remainder is that which is left after part has been taken away. The remainder may be more than half. A scanty remainder is a remnant. Remnant applies specially to the small ends of cloth or tapestry goods which are left unsold. Residue is the settlings. Residue is used in chemistry. All three terms have figurative use.

732. **RESTORATION,** restitution, reparation, amends. To give back that which is taken away is common to all these terms. Restoration and restitution apply only to property. Any one can restore. Only the one who wrongfully took away can make restitution. Restitution is always a restoration of that which has

been unjustly taken. He who has stolen money can make restitution. Reparation applies to intangible things also. He who has robbed another of his good name makes reparation. Amends is used in trivial matters. One makes amends for the loss of a day's pleasure. He makes amends for some small slight or negligence.

733. **RESTORE,** return, repay. To restore is to make good. Hence restore signifies the act of bringing back to its former condition that which has been injured, or replacing by something else that which has been lost or destroyed. To return is to give back what has been taken away. We return the same thing that was taken. To repay is to return equal value in service, favors, or money.

734. **RETARD,** hinder. To retard is to make slow. To hinder applies to the person. Retard has reference to the actions. We retard the accomplishment of anything by hindering the person who is trying to accomplish. But if the person is able to overcome hindrances, we hinder without retarding.

735. **RETORT,** repartee. Retort is always a reply to a censure. It may be, and frequently is, ill natured. Repartee is commonly a witty reply to good-natured badinage or wit.

736. **RETROSPECT,** review, survey. Review is to see again that which we have seen before. We may review the past or review the present. Retrospect is to review the past. Survey is to take a comprehensive view of a thing in order to examine all sides of it. A survey is not necessarily a review. We may take a survey of what we see for the first time.

737. **REVIVE,** refresh, renovate, renew. Revive is to make alive again. Refresh is to make fresh again. Renovate and renew signify to make new again. Revive applies to things and conditions of much importance. Refresh is used in connection with trivial things and conditions. A dying or unconscious man is revived by a powerful remedy. A dusty traveler is refreshed by a bath. An old, shabby costume can be renovated. Renew signifies imparting fresh vigor, or beginning again. They renewed their clamor. A lease may be renewed.

738. **RICHES,** wealth, opulence, affluence. Riches is the general term, and is comparative,—"And his best riches, ignorance of wealth." Wealth is great riches. Wealth applies also to intangible things, as a wealth of good nature. Opulence suggests a flourishing prosperity, an exuberant wealth. Affluence denotes an increasing wealth, and always holds the idea of riches flowing in to a person.

739. **RIDICULE,** satire, irony, sarcasm. Ridicule is simply to excite laughter at the expense of any one, for any cause. Satire is more formal. One writes a satire, or makes an address which is a satire. Irony is to condemn with seeming praise, to say the opposite of what one really means. Sarcasm is personal satire. Sarcasm expresses personal resentment, and is seldom justifiable.

740. **RIGHT,** just, fit, proper. Right is determined by the unwritten laws of God. Just is what is fixed by the written laws of man. The fit and proper are defined by the established rules and customs of society. Right is absolute. There are degrees of just, fit, and proper. Right is applicable to everything. Just refers to matters of important interest. Proper relates to the minor concerns of life. Fit is a more exact term than proper. Several courses of action might be proper under certain circumstances. Only one would be the fit thing to do.

741. **RIPE,** mature. Ripe denotes merely a completion of growth. Maturity is a state of perfection in development. Ripe is a condition of a brief time only. Mature designates a state of more or less continuance. There is an opportune moment when a thing is ripe; beyond that is the stage of decay. Hence the figurative use of the word. The people were ripe for revolt. The project is ripe for execution.

742. **ROUTE,** road, course. The route is any way or road chosen for any particular occasion. Route is used to designate the entire plan of the course taken in an extended journey. Course indicates any place where one runs or walks. Figuratively, course is a plan of action. Road is the beaten track, the regular way.

743. **SAFE,** secure. To be exempt from harm is to be safe. To be exempt from all danger of harm is to be secure. Security is absolute and final. Safety may be comparative and temporary.

744. **SECRET,** hidden, latent, occult, mysterious. What is secret is known to some one. That which is hidden may be known to no one. Latent is that which is secret and ought not to be secret. Occult is that which is concealed from all but the few because of the difficulty of finding it out. Mysterious is that which is hidden from all because of the impossibility of finding it out.

745. **SEEK,** search. We seek that which is not at hand. We search for that which is hidden. Also we invariably seek the thing we want to find; we search the place where it is likely to be found.

746. **SIGN,** signal. A sign makes it possible for us to recognize an object and may be natural. A signal is always the work of a conscious agent. A signal always implies attracting the attention of those at a distance. We converse with the deaf by signs. Ships signal each other at sea

747. **SILENT,** mute, dumb, speechless. Silent is the indefinite term. Silent means the absence of all noise. Dumb is the state of being physically incapable of speech. Speechless is to be temporarily dumb. He who is mute is in a state where he will not speak. A man is mute from fear because he dares not speak, or mute because he does not wish to speak.

748. **SIMULATION,** dissimulation. Simulation is putting on an appearance of what one is not, as a simulation of virtue. Dissimulation is a concealment of what one is. Good writers make this nice distinction.

749. **SIZE,** magnitude, greatness, bulk. Size is an indefinite general term. A thing may be of small size. Magnitude and greatness always indicate a large size. Magnitude is a scientific term. Greatness is the more usual term for things in general. Bulk is a considerable degree of size. It applies to masses of matter, hence used in any other sense implies shapelessness.

750. **SLACK,** loose. Slack refers to things which are tied, or that with which they are tied. Slack is opposed to taut. Loose is a more general term, and is opposed to tight. A knot may be loose so that the rope soon becomes slack. A garment may be loose, but not slack.

751. **SLEEP,** slumber, doze, drowse, nap. Sleep is the general and indefinite expression. To slumber is to sleep lightly. To doze is to incline to sleep, to nap fitfully. To drowse is to be half asleep. To nap is to sleep briefly. A nap, though short, may be a sound and deep sleep. An invalid may drowse all day, and yet be conscious of all that transpires.

752. **SLIP,** slide, glide. To slip is an involuntary motion. To slide is voluntary. Slip and slide indicate merely a movement forward, backward, or sidewise. Glide is a mode of progression without apparent motion. A ship glides. To glide is to walk so smoothly that the feet seem not to move at all.

753. **SLOW,** dilatory, tardy. Slow applies generally to all bodily and mental activity. Dilatory refers to the habit of mind. Tardy indicates the quality of being late. A man is tardy at his place of business in the morning. He may be dilatory about getting at his work after his arrival.

754. **SMELL,** scent, odor, perfume, fragrance. Smell and scent apply equally to that which gives and that which receives the odor. Odor, perfume, and fragrance are said only of that which gives the smell. Smell refers to all creatures. Scent is an extremely keen sense of smell and applies particularly to animals. Everything that can be perceived by the olfactory sense has a smell. Odor is an artificial smell. Perfume is an agreeable smell. Fragrance is the sweetest and strongest of perfumes. In this sense scent is synonymous with smell.

755. **SOFT,** mild, gentle, meek. Any substance which yields easily to pressure is soft. That which acts weakly upon the senses is mild. Soft is opposed to hard. Mild is opposed to sharp, or strong, or severe. Gentle is opposed to violent. Meek denotes submissiveness and lack of courage. The first three terms have both a physical and a moral application, the last only a moral application.

756. **SOLITARY,** sole, only, single. Solitary refers to material things. Sole refers to intangible things. Both signify one left by itself. A solitary tree. The sole cause of the delay. Only implies a lack. One might prefer a solitary tree in his grounds, but only one tree suggests a need for more. Single indicates simply a state of being detached. Ten single dollars would be said in contradistinction from a ten dollar bill, but the dollars are not solitary. Solitary includes the idea of desertion. Only contains no such meaning.

757. **SOME,** any. Some refers to a particular part in distinction from the rest. Any is applicable universally without distinction. Some do this, others do that. Anybody who lacks patience may acquire it.

758. **SOON**, early, betimes. Soon has reference to a relatively short period of time after the present moment. Early is before the time appointed. Betimes is before it is necessary. Soon may mean in a few minutes or in a few weeks.

759. **SPACE**, room. Space is the general term referring to any portion of the universe unoccupied by a solid body. Room is limited in its meaning; it is bounded space, an artificially formed portion of space, or a limited space.

760. **SPEAK**, say, tell. Speak is an intransitive verb, say a transitive verb. Also say is a somewhat more comprehensive word, generally including the idea of expressing a thought, which speak does not necessarily do. To tell refers to the communication of some definite fact.

761. **SPREAD**, scatter, disperse. Spread applies chiefly to indivisible bodies. Water spreads. We spread honey on bread. A bird spreads its wings. Scatter refers exclusively to divisible bodies. One scatters seeds. The wind scatters leaves. Disperse is to separate individual bodies which are collected. Disperse the crowd.

762. **STRAIGHT**, right, direct. Straight denotes that which has no turning or curvature: mechanically, the shortest line between two points. Direct means simply clear, plain, uninvolved. A direct road is one which, though it may turn if desirable, is yet easy to follow and turns no more than is necessary. Right is that which is as it ought to be.

763. **STRICT**, severe. Severe is the stronger term and includes the idea of positive harshness. Strict means absolute inflexibility in the enforcement of discipline. Strictness is not incompatible with kindness.

764. **SYSTEM**, method. System expresses more than method. System refers to complex concerns. Method may be applied to any task, however simple, which is to be done. System relates to the arrangement of many different affairs which must be made to work together smoothly.

765. **THICK**, dense. Thick and dense are almost synonymous. Dense applies rather to the consistency of bodies exclusively, while thick is used also to designate the actual measurement of the third dimension. Thus one says a thick slice of bread, or thick cream; but either thick or dense woods, thick or dense smoke.

766. **THREAT**, menace. Threat and menace are practically interchangeable, though threat is rather the familiar term, and menace is used more often in reference to great dangers only.

767. **TURN**, bend, twist, distort, wring, wrest, wrench. Turn is the general term, meaning to put a thing out of its position or direction. To bend is to turn out of its direction. To twist is to turn spirally, to convolve, to wind. Distort is to twist grotesquely out of its proper shape. Wring is to twist and compress with force. Wrench is a sudden, short, and violent twist. To wrest is to wrench away from.

768. **UNDER**, below, beneath. Under signifies the situation of being low, also concealed or hidden by something else which is directly on top. Below is lower than something else which is higher but not necessarily directly overhead. Beneath is a stronger term than under. Beneath suggests the state of being under the surface. Beneath the river bed. Under water, under the table. Below sea level.

769. **UNHAPPY**, miserable, wretched. Unhappy is merely the state of being positively not happy. Miserable is the extreme of unhappy. Wretched is the extreme of miserable. Wretched may also include outward circumstances, while unhappy and miserable refer rather to the state of mind.

770. **UNLESS**, except. Unless is used in relation to actions; except in relation to things or individuals. I shall not go unless he does. No one is happy unless he wills to be. All may go except those who are incapacitated. All are happy except those who will not be happy. All plums are sweet except our plums.

771. **UNTRUTH**, falsehood, falsity, lie. An untruth, what is not true, may be unintentional. Falsehood and lie are intentional untruths. Lie is a stronger term than falsehood. Falsity is the characteristic of what is false. One cannot speak a falsity, but he may make a statement the falsity of which is apparent.

772. **UNWORTHY**, worthless. Unworthy has reference to some particular thing or circumstance. A man may be unworthy of another's kindness or hospitality; or unworthy of high honors. Worthless is an abstract condition, meaning unworthy of anything, entirely without worth.

773. **UTTER**, speak, articulate, pronounce. Utter is the general term, meaning to make a vocal sound. Speak is to utter something intelligible. Articulate is a mechanical act. One articulates sounds. Pronounce is a method of speech through the action of the intelligence. One pronounces words. One articulates distinctly. One pronounces correctly.

774. **VALUABLE**, precious, costly. That which has intrinsic value is valuable. That which brings a high price is costly. That which is precious is valuable to certain persons exclusively, or only under peculiar conditions. In times of famine bread is precious, and on a desert water is precious. A souvenir which cost nothing and is not valuable may be precious to an individual.

775. **VALUE**, worth, rate, price. Value is relative. Worth is absolute. There may be artificial value; there can be no artificial worth. Whatever we give in exchange for a thing is a rate. Rate may be indefinite. Price is a fixed rate.

776. **VALUE**, prize, esteem. We value a thing according to its market price. We prize it according to its worth to us. Esteem refers to things not salable. We esteem our friends; we esteem qualities in men.

777. **VIEW**, prospect, landscape. A view is that which is seen. A prospect is what may be seen. A prospect, therefore, exists all the time whether looked at or not. But a view may be intercepted. A prospect is a wide, comprehensive view. A view may be of a single object, a house, or a town. A prospect is as far as one can see. Landscape, formerly landshape, is a portion of country which may form a view or prospect.

778. **VIOLENT**, furious, boisterous, vehement, impetuous. Violent is the general term, all the others representing some form of violence. Furious is excessively violent. Boisterous is noisy and rough; violence in action. Vehement refers rather to the emotions. Impetuous signifies sudden and extreme violence in action or speech. That which is impetuous cannot be withstood. That which is vehement is not under control.

779. **WAIT**, wait for, look for, expect. Wait, wait for, and look for indicate a certain preparation for a future event, also a calculation for it. Expect applies only to the latter sense. Expect is to believe an event is to occur. Wait and wait for imply a readiness for it. Look for is literally waiting and watching. Figuratively it is a momentary expectation.

780. **WANT**, need, lack. One wants when he is without that which is necessary for his comfort. He needs when he is without that which is necessary to his existence or purposes. Want includes the idea of desire. We may want luxuries. One may want what another has no use for. But all need essentially the same things. To lack is to be deficient, commonly to be deficient in one thing. Lack applies also to inanimate things. The door lacks a hinge.

781. **WAY**, manner, method, mode, course, means. Way is a general expression denoting the process by which anything is done. Manner is a way chosen for a particular occasion. Method is a way thought out by one's self. Method may be the result of experience, or be built upon a theory. Method is applied to matters requiring thought and contrivance. Mode refers to mechanical matters. One may have a good method of singing, but an awkward mode of handling his music, and an unattractive manner of carrying himself on the stage. Course is the measures collectively which we adopt in order to achieve a result. Means is the actual thing or things we do or use in order to succeed. Means might be regarded as tools.

782. **WEAKEN**, enfeeble, debilitate, enervate, invalidate. Anything that depletes strength is said to weaken. Enfeeble is to undermine vital power permanently. Debilitate may refer to the weakening temporarily or otherwise of force in one particular only. Enervate applies to the weakening of nervous force. Invalidate has reference merely to things. One's claim to an estate may be invalidated. One is enfeebled by the progress of a fatal illness, or old age. One's memory may become debilitated by excessive demands upon it.

783. **WEARISOME**, tiresome, tedious. Anything which requires expenditure of strength may become wearisome. Tiresome holds more the idea of a tax upon physical strength. Tedious refers rather to that which is mentally tiresome. Also, tedious suggests what is tiresome through inaction, or waiting and suspense.

784. **WEARY**, tire, jade, harass. Long continued effort and exertion weary. A slight exercise may tire. Tire is a more superficial effect. Exertion beyond one's strength jades. Jade contains the idea of weariness

approaching exhaustion. Exertion under conditions most annoying and unpleasant harasses. Harass includes mental irritation, and may refer only to excessive exasperation.

785. WEIGHT, burden, load. Anything that is heavy has weight. Load signifies a weight which is carried. Weight and load may be more or less heavy. A burden is that which is carried by animate bodies. A ship or a wagon may carry a load, but only a person or an animal can carry a burden. A burden is commonly a heavy load, though not necessarily so.

786. WEIGHT, heaviness, gravity. Weight is the quality of being heavy and is the effect of the force of gravity; it is also the quantity of heaviness. We may speak of the weight of even very light bodies; but we speak of the heaviness of only those of great weight. Gravity is the attractive force which the mass of the earth exerts upon all bodies, and is the cause of weight. In a figurative use we speak of the gravity of an offense or crime.

787. WELL-BEING, welfare, prosperity, happiness. Well-being is the state or condition of being well and may be regarded as a more or less normal condition; welfare is the state or condition of both well-doing and well-being; prosperity indicates an advance, gain, or successful progress towards the attainment of that which is desired; happiness is the state of mind which is brought about by prosperity, welfare, or well-being.

788. WHOLE, entire, complete, total, integral. What is whole has had nothing taken from it. That which is entire has not been divided. The complete is not in any way deficient. Thus, one eats a whole apple when he eats all of it, but he does not eat it entire because he eats it one piece at a time. However, the apple, if it were not grown to its full size, was not complete. Total implies the summing up of all the parts, and is used in speaking of intangible things. Integral is that which is both whole and entire.

789. WICKED, nefarious, iniquitous. Wicked, being the generic expression, may be used in a milder sense than the other two. Iniquitous is a species of wickedness which is extremely reprehensible. Nefarious is a still stronger term and denotes wickedness in the highest degree. That which is nefarious violates the most sacred trust and obligation.

790. WILL, wish. To wish is simply a desire toward an object. To will is to effect a wish by one's own active exertions.

791. WILLINGLY, voluntarily, spontaneously. What is done willingly is done without resistance of the will. What is done voluntarily is done of one's own accord without outside force or suggestion. Spontaneously refers to that species of the voluntary which requires no effort, hence is used also to describe inanimate action.

792. WISDOM, prudence. Wisdom is knowledge. Prudence is foresight in action. Prudence holds also the idea of caution.

793. WIT, humor, satire, irony, burlesque. Wit consists in a spontaneous perception of knowledge or truth. Wit expresses itself only in words. Humor, which is rather a capacity for perceiving the ludicrous, may express itself in both words and action. Satire is ill-natured wit. Irony is likewise more or less ill natured, but has the peculiar quality of expressing the opposite of what is meant. Burlesque is the lowest form of humor; it is grotesque and exaggerated representation and consists mostly of action rather than speech.

794. WONDER, surprise. What is unusual produces a feeling of wonder. That which is sudden and unexpected causes surprise.

795. WONDER, miracle, marvel, prodigy, monster. As above, the unusual is regarded as a wonder. A wonder is natural. A supernatural event is a miracle. What is excessively wonderful is a marvel. Marvels border on the fictitious. That which is a wonder because of premature development is a prodigy. Hence achievements disproportionately large to the means employed are called prodigious. A child who does anything as well as an adult could be expected to do it is a prodigy. A monster is a violation of the laws of nature.

796. WORD, term, expression. Any connected sounds which serve to communicate a thought are words. A word which has a specific meaning is a term. A word, or words, which convey a forcible meaning is an expression. A writer's purity of style depends upon his choice of words; his precision depends upon his choice of terms. His forcefulness depends upon the aptitude of his expressions. Usage determines words. Science fixes terms. Sentiment provides expressions.

797. WORK, labor, toil, drudgery, task. Anything that calls for exertion is work. Labor is hard work. Toil is the extreme of hard work. Drudgery is the most menial and unsatisfying work. Task is work imposed by others. Task comprehends also the idea of a particular piece of work.

798. WRITER, penman, scribe. Whoever writes is a writer. Whoever writes expertly is a penman. Who copies or transcribes is a scribe.

799. WRITER, author. Every one who writes is a writer, but only he who invents is an author; hence editors and compilers are writers, but not authors unless they also write original books.

800. YOUTHFUL, juvenile, puerile. Youthful is having the quality of youth. Juvenile is the state of being very young. Puerile, meaning childish, is more often used in a bad sense, as describing acts of men which mark the absence of manhood. Youthfulness in an older person is a beautiful attribute.

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WORDS OFTEN WRONGLY PRONOUNCED.

1. DIVISION OF COMMON WORDS.

Key to Marked Letters.

1. Native or English Sounds.

ä = *a* in arm.
à = *a* in ask.
ă = *a* in at.
â = *a* in air.
ā = *a* in ale.
b = *b* in be.
ch = *ch* in chew.
d = *d* in do.
ĕ = *e* in ebb.
ē = *e* in eel.
ẽ = *e* in ermine.
f = *f* in foe.
g = *g* in get.
h = *h* in he.
ĭ = *i* in it.
j = *j* in jet.
k = *k* in key.
l = *l* in lave.
m = *m* in me.
n = *n* in no.
ng = *ng* in ring.
ŏ = *o* in odd.
o = *o* in orange
ô = *o* in or.
ō = *o* in only.
ọ̄ = *o* in old.
o͝o = *oo* in look.
o͞o = *oo* in ooze.
p = *p* in pay.
r = *r* in rave.
s = *s* in see.
sh = *sh* in she.
t = *t* in to.
t̛ = *th* in thy.
th = *th* in thigh.
û = *u* in urge.
ŭ = *u* in up.
v = *v* in van.
w = *w* in we.
y = *y* in ye.
z = *z* in zebra.
zh = *z* in azure.

2. Foreign Sounds.

ö = *ö* in Göthe.
ü = *ü* in Müller.
äN = *en* in encore.
ăN = *in* in vin.
ôN = *on* in bonbon.
ŭN = *un* in un.
K = *ch* in Richter.
G = *g* in Leipzig.

3. Diphthongal Sounds.

ī = *i* in ice.
oi = *oi* in oil.
ow = *ow* in now.
U = *u* in duke.

abdomen, ăb-dō′mĕn, *not* ăb′dō-mĕn.
aborigines, ăb-ō-rĭj′ĭn-ēz.
abstemious, ăb-stē′mĭ-ŭs, *not* ăb-stēm′ĭ-ŭs.
abstractly, ăb′străkt-lĭ.
abstruse, ăb-strUs′, *not* ăb-stro͞os′.
access, ăk-sĕs′ *or* ăk′sĕs; ăk′sĕs (Imp.).
acclimate, ăk-klī′māt, *not* ăk′klĭm-āt.
accompaniment, ăk-kŭm′păn-ĭ-mĕnt, *not* ăk-kŭmp′nĭm-ĕnt.
accouchement, ȧk-ko͞osh-mäN′.
accouter, ăk-ko͞o′tẽr, *not* ăk-kow′tẽr.
accrue, ăk-krU′, *not* ăk-kro͞o′
accurate, ăk′kU-rāt, *not* ăk′kẽr-ĭt.
acetic, ȧ-sēt′ĭk *or* ȧ-sē-tĭk.
acetylene, ȧ-sĕt′ĭl-ēn; ăs′ĕt-ĭl-ēn.
acorn, ā′kûrn; ā′kẽrn (Wor.).
acoustic, ȧ-kow′stĭk, or ȧ-ko͞o′stĭk.
across, ȧ-krOs′, *not* ȧ-krost′.
acts, ăkts, *not* ăks.
acumen, ȧ-kU′mĕn, *not* ăk′yU-mĕn.
adagio, ȧ-dä′jō.
adamantine, ăd-ȧ-măn′tĭn, *not* ăd-ȧ-măn′tēn.
address (n.), ăd-drĕs′.
address (vb.), ăd-drĕs′.
adept, ăd-ĕpt′, *not* ăd′ĕpt.
adieu, ȧ-dU′; Fr. pron. ăd-yö′.
ad infinitum, ăd ĭn-fĭn-ī′tUm, *not* ăd ĭn-fĭn′-ĭt-ŭm.
adjectively, ăd′jĕk-tĭv-lĭ.
admirative, ăd-mī′rȧ-tĭv.
adobe, ȧ-dō′bā.
adult, ȧ-dŭlt′, *not* ăd′ŭlt.
ad valorem, ăd vȧ-lō′rĕm, *not* ăd văl′ō-rĕm.
adventure, ăd-vĕnt′yUr.
adverse, ăd′vẽrs.
advertise, ăd-vẽr-tīz′.
advertisement, ăd-vẽr′tĭz-mĕnt *or* ăd-vẽr-tīz′-mĕnt.
æon, ē′ŏn.
aerate, ā-ẽr-āt, *not* ā-rē-āt.
aerial, ā-ē′rĭ-ăl.
ærie, ē′rĭ.
aerometer, ā-ẽr-ŏm′ē-tẽr.
aeronaut, ā′ẽr-ō-nôt; ā′rō-nôt (Smart).
ætiology, ē-tĭ-ŏl′ō-jĭ.
a fortiori, ā fôr-shĭ-ō′rĭ.
aggrandize, ăG′grăn-dīz.
agile, ăj′ĭl, *not* ăj′īl.
aid-de-camp, ād′dŭ-käN.
aiguille, ā-Gwēl′; Fr. pron. ā-Gwē′yŭ.
ailment, āl′mĕnt, *not* ā̆l′mŭnt.
aisle, īl.
algæ, ăl′jē.
algebra, ăl′jē-brȧ, *not* ăl′jē-brā.
algebraist, ăl′jē-brā-ĭst.
alias, ā′lĭ-ăs, *not* ăl′ĭ-ăs.
alien, āl′yĕn, *not* ā′lĭ-ĕn.
allopathist, ăl-lŏp′ăth-ĭst, *not* ăl′lō-păth-ĭst.
allusion, ăl-lU′zhŭn, *not* ăl-lo͞o′zhŭn.
ally (n.), ăl-lī′.
alma mater, ăl′mȧ mā′tẽr, *not* ăl′mä mä′tẽr.
almond, ä′mŭnd.
alpaca, ăl-păk′ȧ, *not* ăl-ȧ-păk′ȧ.
alternately, ăl-tẽr′nāt-lĭ, *not* ăl′tẽr-nāt-lĭ.
alto-rilievo, ȧl′tō rē-lyā′vō.
alveolar, ăl-vē′ō-lẽr *or* ăl′vē-ō-lẽr.
amateur, ăm-ȧ-tUr′; Fr. pron. ä-mä-tör′.
ameliorate, ȧ-mēl′yō-rāt, *not* ā-mē′lĭ-ō-rāt.
amenable, ȧ-mē′nȧ-bl, *not* ā-mĕn′ā-bl.
amende honorable, ä-mänd′ ō-nō-rä′bl.
ament, ăm′ĕnt.
amœba, ȧ-mē′bȧ.
anæmic, ȧ-nĕm′ĭk, *not* ȧ-nē′mĭk.
anchor, ăng′kẽr.
ancien régime, äNs-yăN′ rā-zhēm′.
andante, ăn-dăn′tē; It. pron. än-dän′tä.
angiosperm, ăn′jĭ-ō-spẽrm.
aniline, ăn′ĭl-ĭn *or* ăn′ĭl-ēn.
animalcule, ăn-ĭm-ăl′kUl, *not* ăn-ĭm-ăl′kŭ-lē.
antarctic, ănt-ärk′tĭk, *not* ănt-är′tĭk.
anxiety, ăng-zī′ē-tĭ, *not* ăngk-sī′ē-tĭ.
anxious, ăngk′shŭs, *not* ăng′shŭs.
aperient, ȧ-pē′rĭ-ĕnt.
aperture, ăp′ẽr-tUr.
apices (plural of apex), ăp′ĭs-ēz.
apostle, ȧ-pos′l, *not* ȧpŏs′l *nor* ȧ-pŏs′tl.
apotheosis, ăp-ō-thē′ō-sĭs, *not* ăp-ō-thē-ō′sĭs
apotheosize, ăp-ō-thē′ō-sīz.
appellate, ăp-pĕl′lāt.
appendicitis, ăp-pĕn-dĭs-ī′tĭs.
appetitive, ăp′pē-tĭ-tĭv.
appoggiatura, ăp-pŏj-ä-tōō′rä.
apricot, ā′prĭ-kŏt, *not* ăp′rĭ-kŏt.
apropos, ăp′rŏ-pō, *not* ăp-rŏ-pō′.
aqua, ā′kwȧ.
aquarium, ȧ-kwā′rĭ-ŭm, *not* ä-kwä′rĭ-ŭm.
aqueduct, ăk′wē-dŭkt, *not* ăk′wē-dŭkt.
archangel, ärk-ān′jĕl, *not* ärch-ān′jĕl.
archbishop, ärch-bĭsh′ŏp, *not* ärch′bĭsh-ŏp.
archduke, ärch-dUk′, *not* ärch′dUk.

archfiend, ärch′fēnd, *not* ärch-fēnd′.
archipelago, är-kĭ-pĕl′å-gō, *not* är-chĭ-pĕl′å-gō.
architect, är′kĭ-tĕkt, *not* är′chĭ-tĕkt.
archives, är′kīvz, *not* är′chīvz.
arctic, ärk′tĭk, *not* är′tĭk.
aria, ä′rĭ-å *or* ä′rĭ-å.
arid, ăr′ĭd, *not* ā′rĭd.
aristocrat, å-rĭs′tō-krăt *or* ăr′ĭs-tō-krăt.
artificer, är-tĭf′ĭs-ēr, *not* är′tĭf-ĭs-ēr.
artiste, är-tēst′.
ascetic, ăs-sĕt′ĭk.
ask, åsk, *not* ăsk.
askance, às-kăns′, *not* ăs-kăns′.
asphalt, ăs-fălt′, *not* ăs′fălt.
astrakhan, ăs-trå-kăn′, *not* ăs′trå-kăn.
atheneum, ăth-ē-nē′ŭm, *not* ā-thē′nē-ŭm.
attaché, ăt-tà-shā′.
attacked, ăt-tăkt′, *not* ăt-tăk′tĕd.
attorney, ăt-tûr′nĭ.
auberge, ō-bârzh′.
au courant, ō kōō-răN′.
au fait, ō fā′.
aunt, ănt, *not* ănt, *nor* ånt.
au revoir, ō rŭv-wär′.
aurist, ô′rĭst.
aurora borealis, ô-rō′rå bō-rē-ā′lĭs.
automobile, ô-tō-mō′bĭl; *Fr. pron.*, ō-tō-mō-bēl′.
automobilist, ô-tō-mō′bĭl-ĭst.
avoirdupois, ăv-ēr-dU-poiz′ *not* ăv-ēr-dU-poi′.
backslide, băk-slīd′, *not* băk′slīd.
backslider, băk-slī′dēr, *not* băk′slī-dēr.
bade, băd, *not* bād.
banana, bä-nä′nå, *not* băn-ăn′å.
bandoline, băn′dō-lĭn, *not* băn-dō-lēn′.
bargain, bär′Gĕn, *not* bär′Gŭn.
barrel, băr′rĕl, *not* băr′rŭl.
bas-bleu, bä-blē′; Fr. pron. bä-blö′.
basin, bā′sn, *not* bā′sĭn.
basket, bås′kĕt, *not* bās′kĕt.
bas-relief, bä-rē-lēf′.
basso-rilievo, bās′so rē-lē-ā′vō.
bass-relief, bās′rē-lēf.
bath, bàth, *not* băth.
bdellium, dĕl′yŭm.
beau ideal, bō ī-dē′ăl.
beau monde, bō-mōnd′ *or* bō-mōnd′; Fr. pron. bō-mōnd′.
beaux-esprits, bō-zĕs-prē′.
bedstead, bĕd′stĕd, *not* bĕd′stĭd.
belles-lettres, bĕl-lĕt′tĕr.
bellows, bĕl′ŭs.
beloved (adj), bē-lŭv′ĕd.
beloved (part.), bē-lŭvd′.
belvedere, bĕl-vē-dēr′ *or* bĕl′vē-dēr.
benignant, bē-nĭg′nănt, *not* bē-nī′nănt.
bestial, bĕst′yăl.
bête-noire, bāt-nwär′.
betrothal, bē-troth′ăl, *not* bē-trō′thăl.
bicycle, bī′sĭk-l, *not* bī′sī-kl.
biennial, bī-ĕn′ĭ-ăl.
bijou, bē-zhōō′.
billet-doux, bĭl′ā-dōō.
bindery, bīnd′ēr-ĭ, *not* bīnd′rĭ.
biographer, bī-ŏG′rå-fēr.
biography, bī-ŏG′rå-fĭ.
bizarre, bē-zär′.
blasé, blå-zā′.
blatant, blā′tănt, *not* blăt′ănt.
bon-ton, bôN-tôN′.
bon-vivant, bôN-vē-väN′.
burlesque, bûr-lĕsk′, *not* bûr′lĕsk.
business, bĭz′nĕs, *not* bĭz′ĭ-nĕs.
butcher, bŏŏch′ĕr, *not* bōō′chĕr.
cacao, kå-kā′ō *or* kā′kō.
cachet, kåsh′ā.
cachou, kå-shōō′.
cacique, kå-sēk′.
cadaver, kå-dā′vēr, *not* kå-dăv′ĕr.
cæsura, sē-zU′rå *or* sē-sU′rå; sē-zhōō′rå (Hal.).
café, kăf′ā; Fr. pron. kà-fà′.
caisson, kā′sŏn.
calf, kăf, *more properly* kåf.
caliph, kā′lĭf.
calk, kôk.
calm, käm, *not* kăm.
caloric, kå-lŏr′ĭk, *not* kå-lō′rĭk.
calve, kåv, *not* kăf.
calyx, kā′lĭks, *not* kăl′ĭks.
camelopard, kå-mĕl′ō-pärd *or* kăm′ĕl-ō-pärd.
campagna, käm-pän′yå.
campanile, kåm-på-nē′lā.
canaille, kå-nāl′; kăn-āl′ (Stor.); Fr. pron. kà-nà′yŭ.
cancel, kăn′sĕl, *not* kăn′sl.
candelabra, kăn-dē-lā′brå, *not* kăn-dē-lä′brå.
canine, kå-nīn′.
cañon, kăn′yŭn *or* kăn-yōn′.
cantalever, kăn′tå-lĕv-ēr.
cantatrice, kån-tå-trē′chē.
canyon, kăn′yŭn.
caoutchouc, kōō′chōōk.
capitulate, kā-pĭt′yU-lāt, *not* kā-pĭch′ōō-lāt.
capuchin, kăp-yU-shēn′, *not* kăp′yU-chĭn.
caret, kā′rĕt *or* kăr′ĕt.
caricature, kăr′ĭk-å-tUr.
Carolinian, kăr-ō-lĭn′ĭ-ăn, *not* kăr-ō-lī′nĭ-ăn.
carte blanche, kärt-blänsh′.
cartridge, kär′trĭj, *not* kăt′rĭj.
caseine, kā′sē-ĭn, *not* kā′sē-ēn.
cashmere, kăsh′mēr.
casino, kå-sē′nō.
castanet, kăs′tå-nĕt.
catalogue, kăt′å-lôG, *not* kăt′å-lôG.
catalpa, kå-tăl′på, *not* kå-tôl′på.
catch, kăch.
catchup, kăch′ŭp, *not* kĕch′ŭp.
catechism, kăt′ē-kĭzm, *not* kăt′ē-kĭz-ŭm.
catsup, kăt′sŭp.
caveat, kā′vē-ăt, *not* kăv′ē-ăt.
cayenne, kā-ĕn′ *or* kī-ĕn′.
cello, chĕl′lō.
cement (n.), sē-mĕnt′ *or* sĕm′ĕnt.
cemetery, sĕm′ē-tĕr-ĭ, *not* sĕm′ē-trĭ.
centennial, sĕn-tĕn′nĭ-ăl, *not* sĕn-tĕn′yăl.
cephalic, sē-făl′ĭk, *not* sĕf′ăl-ĭk.
ceramic, sē-răm′ĭk, *not* kē-răm′ĭk.
cerebrum, sĕr′ē-brŭm, *not* sē-rē′brŭm.
cerement, sēr′mĕnt, *not* sĕr′ē-mĕnt.
challis, shăl′lĭ.
chalybeate, kå-lĭb′ē-āt, *not* chå-lĭb′ē-āt.
chamois, shăm′ĭ *or* shå-moi′.
champagne, shăm-pān′.
chaos, kā′ŏs.
chaperon, shăp′ēr-ōn.
chargé d'affaires, shär-zhā′ dăf-fâr′.
charlotte russe, shär′lŏt rōōs.
chasm, kăzm, *not* kăz′ŭm.
chasten, chā′sn, *not* chās′n, *nor* chās′tn.
chastise, chās-tīz′, *not* chās′tīz.
chastisement, chās′tĭz-mĕnt, *not* chās-tīz′mĕnt.
chauffeur, shō-för′.
chef, shĕf.
chef-d'œuvre, shā-dĕvr′.
chemise, shē-mēz′.

chenille, shē-nēl′.
cherubim, chĕr′ʊ-bĭm, *not* chĕr′ŭb-ĭm.
chestnut, chĕs′nŭt, *not* chĕst′nŭt.
cheviot (cloth), chĕv′ē-ŭt.
chiaro-oscuro, kē-ä′rō ŏs′kōō′rō.
chicken, chĭk′ĕn, *not* chĭk′n.
chiffonier, shĭf-ŏn-ēr′.
children, chĭl′drĕn, *not* chĭl′dĕrn.
chimera, kĭm-ē′rȧ, *not* kī-mē′rȧ.
chiropodist, kī-rŏp′ō-dĭst.
chisel, chĭz′ĕl, *not* chĭz′l.
chock-full, chŏk′fo͝ol, *not* chŭk′fo͝ol.
chorister, kŏr′ĭs-tẽr, *not* kō′rĭst-ẽr.
chyle, kīl.
chyme, kīm.
cinchona, sĭn-kō′nȧ, *not* sĭn-chō′nȧ.
circuit, sẽr′kĭt, *not* sẽr′kŭt.
civil, sĭv′ĭl, *not* sĭv′l.
clairvoyant, klâr-voi′ănt.
clandestine, klăn-dĕs′tĭn.
clapboard, klăb′ẽrd, *not* klăp′bẽrd.
clarinet, klăr′ĭn-ĕt.
cleanly (adj.), klĕn′lĭ.
cleanly (adv.), klēn′lĭ.
clematis, klĕm′ȧ-tĭs, *not* klē-mā′tĭs.
clique, klēk, *not* klĭk.
coadjutor, kō-ăd-jʊ′tẽr, *not* kō-ăd′jʊ-tẽr.
cocaine, kō′kȧ-ĭn.
codeine, kō-dē′ĭn.
cognomen, kŏg-nō′mĕn, *not* kŏg′nō-mĕn.
coiffure, kwä-für′.
colander, kŭl′ăn-dẽr, *not* kōl′ăn-dẽr.
cold-chisel, kōld′-chĭz-ĕl.
colosseum, kŏl-ŏs-sē′ŭm.
column, kŏl′ŭm, *not* kōl′yŭm.
comeliness, kŭm′lĭ-nĕs, *not* kōm′lĭ-nĕs.
comely, kŭm′lĭ, *not* kōm′lĭ.
comme il faut, kŭm-ēl-fō′.
commiserate, kŏm-mĭz′ẽr-āt, *not* kŏm-mĭs′ẽr-āt.
commodious, kŏm-mō′dĭ-ŭs, *not* kŏm-mō′jŭs.
commune (n.), kŏm′mʊn.
comparable, kŏm′pȧ-rȧ-bl, *not* kŏm-pâr′ȧ-bl.
complex, kŏm′plĕks, *not* kŏm-plĕks′.
comptroller, kŏn-trō′lẽr.
con amore, kŏn ȧ-mō′rē.
concrete (n. and adj.), kŏn′krēt.
concrete (vb.), kŏn-krēt′.
condolence, kŏn-dō′lĕns, *not* kŏn′dō-lĕns.
conduit, kŏn′dĭt *or* kŭn′dĭt.
confidant, kŏn′fĭd-ănt′, *not* kŏn′fĭd-ănt.
congenial, kŏn-jēn′yăl.
congregate, kŏng′grē-gāt.
connoisseur, kon-nā-sör′.
conquest, kŏng′kwĕst, *not* kŏn′kwĕst.
conscientious, kŏn-shĭ-ĕn′shŭs, *not* kŏn-sĭ-ĕn′-shŭs.
conservatoire, kôN-sĕr-vä-twär′.
considerable, kŏn-sĭd′ẽr-ȧ-bl, *not* kŏn-sĭd′rā-bl.
consignee, kŏn-sīn-ē′.
constable, kŭn′stȧ-bl, *not* kŏn′stȧ-bl.
consul, kŏn′sŭl, *not* kown′sŭl.
contemplative, kŏn-tĕm′plā-tĭv, *not* kŏn′tĕm-plā-tĭv.
contiguous, kŏn-tĭg′yʊ-ŭs.
contretemps, kôN-trŭ-täN′.
conversant, kŏn′vẽr-sănt, *not* kŏn-vẽr′sănt.
coquet, kō-kĕt′.
coral, kŏr′ăl, *not* kō′răl.
cordial, kôr′jăl *or* kôrd′yăl.
cornet, kôr′nĕt, *not* kôr-nĕt′.
corolla, kō-rŏl′ȧ.
corps (military), kōr; pl. kōrz.
cortége, kôr-tăzh′.
cosmetic, kŏz-mĕt′ĭk, *not* kŏs-mĕt′ĭk.
cote (n.), kōt, *not* kŏt.
cotillion, kō-tĭl′yŭn.
coupé, kōō-pā′.
coupon, kōō′pŏn.
courteous, kûrt′ē-ŭs.
cousin, kŭz′n, *not* kŭz′ĭn.
covetous, kŭv′ĕt-ŭs, *not* kŭv′ē-chŭs.
cowardice, kow′ärd-ĭs, *not* kow′ärd-īs.
craunch, kränch, *not* krônch.
crèche, krāsh.
credence, krē′dĕns, *not* krĕd′ĕns.
credulous, krĕd′yʊlŭs, *not* krĕj′ōō-lŭs.
creek, krēk, *not* krĭk.
crematory, krĕm′ȧ-tō-rĭ.
crouch, krowch, *not* krōōch.
cuirass, kwē-rȧs′ *or* kwē′rȧs.
cuisine, kwē-zēn′.
culinary, kʊ′lĭn-ā-rĭ, *not* kŭl′ĭn-ā-rĭ.
cupboard, kŭb′bẽrd.
cupola, kʊ′pō-lȧ, *not* kʊ′pȧ-lō.
curator, kʊ-rā′tẽr.
cycle, sī′kl, *not* sĭk′l.
czarowitz, zär′ō-wĭts *or* tsär′ō-vēch.
daguerreotype, dȧ-gĕr′ō-tīp, *not* dȧ-gĕr′ē-ō-tīp.
dais, dā′ĭs.
damage, dăm′āj, *not* dăm′ĭj.
daub, dôb, *not* dŏb.
débris, dā-brē′.
débutante, dā-bʊ-tŏnt′.
decade, dĕk′ăd, *not* dē-kād′.
décolleté, dā-kōl-tā′, *not* dā-kŏl′tā.
decorous, dē-kō′rŭs *or* dĕk′ō-rŭs.
deficit, dĕf′ĭs-ĭt, *not* dē-fĭs′ĭt.
deign, dān.
delirious, dē-lĭr′ĭ-ŭs, *not* dē-lē′rĭ-ŭs.
demesne, dē-mēn′; dē-mān′.
depths, dĕpths, *not* dĕps.
de rigueur, dŭ rē-gör′.
deshabille, dāz-ȧ-bēl′; dēs-hȧ-bĭl′ *or* dĕz′ă-bēl.
desideratum, dē-sĭd-ĕr-ā′tŭm, *not* dē-sīd-ēr-ā′tŭm.
despicable, dĕs′pĭk-ȧ-bl, *not* dē-spĭk′ȧ-bl.
destine, dĕs′tĭn.
de trop, dŭ trō′.
different, dĭf′fẽr-ĕnt, *not* dĭf′rĕnt.
digitalis, dĭj-ĭ-tā′lĭs, *not* dĭj-ĭ-tăl′ĭs.
dilettante, dĭl-ĕt-ăn′tā *or* dē-lā-tȧn′tā.
diploma, dĭ-plō′mȧ, *not* dī-plō′mȧ.
direct, dĭ-rĕkt′, *not* dī-rĕkt′.
discourse, dĭs-kōrs′, *not* dĭs′kōrs.
disease, dĭz-ēz′, *not* dĭs-ēz′.
disputant, dĭs′pʊ-tănt, *not* dĭs-pʊ′tănt.
distich, dĭs′tĭk, *not* dĭs′tĭch.
district, dĭs′trĭkt, *not* dē′strĭkt.
diverge, dĭv-ẽrj′, *not* dī-vẽrj′.
dolce far niente, dōl′chā fär-nē-ān′tā.
domain, dō-mān′, *not* dō′mān.
donkey, dŏng′kĭ, *not* dŭng′kĭ.
douche, dōōsh.
drawers, drô′ẽrz, *not* drôrz.
drought, drowt.
drowned, drownd.
ductile, dŭk′tĭl, *not* dŭk′tēl.
eau de cologne, ō dŭ kō-lōn′.
eczema, ĕk′zē-mȧ, *not* ĕk-zē′mȧ.
elegiac, ē-lē′jĭ-ăk *or* ĕl-ē-jī′ăk.
eleven, ē-lĕv′n, *not* lĕv′n.
élite, ā-lēt′.
elongate, ē-lŏng′gāt, *not* ĕ-lŏn′gāt.
enchant, ĕn-chănt′, *not* ĕn-chănt′.

encore, äng-kōr′.
engine, ĕn′jĭn, *not* ēn′jĭn.
ennui, än-wē′; Fr. pron. äN-nwē′.
enquiry, ĕn-kwī′rĭ, *not* ĕn′kwĭr-ĭ.
entente cordiale, äN-täNt′ kôr-dyäl′.
erasure, ē-rā′zhʊr, *not* ĕ-rā′shʊr.
erysipelas, ĕr-ĭ-sĭp′ē-lăs, *not* ĭr-ĭ-sĭp′ē-lăs.
esoteric, ĕs-ō-tĕr′ĭk.
espionage, ĕs′pē-ōn-āj *or* ĕs′pē-ŏn-äzh.
esprit de corps, ĕs-prē′ dŭ kōr.
etiquette, ĕt′ĭ-kĕt.
étude, ā-tōōd′.
exaggeration, ĕgz-ăj-ĕr-ā′shŭn.
examine, ĕgz-ăm′ĭn, *not* ĕks-ăm′ĭn.
example, ĕgz-ăm′pl.
exist, ĕgz-ĭst′, *not* ĕks′ĭst.
exit, ĕks′ĭt, *not* ĕgz′ĭt.
exogenous, ĕks-ŏj′ē-nŭs.
expedient, ĕks-pē′dĭ-ĕnt, *not* ĕks-pē′jĕnt.
expiratory, ĕks-pīr′ā-tō-rĭ.
exponent, ĕks-pō′nĕnt, *not* ĕks′pō-nĕnt.
exquisite, ĕks′kwĭz-ĭt, *not* ĕks-kwĭz′ĭt.
extant, ĕks′tănt, *not* ĕks-tănt′.
ex-tempore, ĕks-tĕm′pō-rē, *not* ĕks-tĕm′pōr, a gross error.
extraordinary, ĕks-trôr′dĭn-ā-rĭ *or* ĕks-trā-ôr′-dĭn-ā-rĭ.

façade, fā-sād′ *or* fā-säd′.
falcon, fô′kn.
faucet, fô′sĕt, *not* făs′ĕt.
faux pas, fō-pä′, *not* fōō′pō.
favorite, fā′vēr-ĭt, *not* fā′vēr-ĭt.
fecund, fĕk′ŭnd, *not* fē′kŭnd.
fellow, fĕl′lō, *not* fĕl′lŭ.
feminine, fĕm′ĭn-ĭn, *not* fēm′ĭn-ĭn.
fête, fāt.
fiancé, fē-äN-sā′.
fiancée, fē-äN-sā′.
fibril, fī′brĭl, *not* fĭb′rĭl.
figure, fĭg′yʊr.
finale, fē-nä′lā, *not* fī-năl′ē.
finance, fĭn-ăns′, *not* fī′năns.
financier, fĭn-ăn-sēr′, *not* fī′năn-sēr.
florid, flŏr′ĭd, *not* flō′rĭd.
forbade, fôr-băd′, *not* fôr-bād′.
forest, fŏr′ĕst, *not* fōr′ŭst.
fragile, frăj′ĭl, *not* frăj′īl.
franchisement. frăn′chĭz-mĕnt.
fräulein, froi′līn.
friendship, frĕnd′shĭp, *not* frēn′shĭp.
frontier, frŏn′tēr, *not* frŭn′tēr.
fungi, fŭn′jī, *not* fŭng′gī.
furniture, fûr′nĭt-yʊr.

gallery, găl′ēr-ĭ, *not* găl′rĭ.
garage, găr′äj; Fr. pron., gȧr-äzh′.
garçon, găr-sôN′.
garrulous, găr′rŏŏ-lŭs.
gaucherie, gōsh-rē′.
generally, jĕn′ēr-ăl-ĭ, *not* jĕn′răl-ĭ.
generic, jē-nĕr′ĭk, *not* jĕn′ēr-ĭk.
genre, zhäNr.
genuine, jĕn′yʊ-ĭn, *not* jēn′yʊ-ĭn.
gerund, jĕr′ŭnd, *not* jē′rŭnd.
get, gĕt, *never* gĭt.
ghastly, gȧst′lĭ, *not* gȧst′lĭ.
giaour, jowr.
gist, jĭst, *not* gĭst.
gives (fetters), jĭvz, *not* gĭvz.
gladiolus, glȧ-dī′ō-lŭs.
glottis, glŏt′ĭs, *not* glō′tĭs.
glycerine, glĭs′ēr-ĭn, *not* glĭs′ēr-ēn.
gneiss, nīs.
gondola, gŏn′dō-lȧ, *not* gŏn-dō′lȧ.
gone, gon.
government, gŭv′ẽrn-mĕnt, *not* gŭv′ĕr-mĕnt.
granddaughter, grănd′dô-tẽr, *not* grăn′dô-tẽr.
grandson, grănd′sŭn, *not* grăn′sŭn.
grasp, grȧsp, *not* grȧsp.
gratis, grā′tĭs, *not* grăt′ĭs.
grimace, grĭm-ās′, *not* grĭm′ās.
habitué, ȧ-bē-tü-ā′ *not* hăb-ĭt-yʊ-ē′.
handbook, hănd′bo͝ok, *not* hăn′bo͝ok.
harass, hăr′ăs.
hautboy, hō′boi.
hearth, härth, *not* hērth.
height, hīt, *not* hītth.
heinous, hā′nŭs, *not* hē′nŭs.
herring, hĕr′ĭng, *not* hĕr′ĭn.
highwayman, hī′wā-măn, *not* hī-wā′măn.
history, hĭs′tō-rĭ, *not* hĭs′trĭ.
homestead, hōm′stĕd, *not* hōm′stĭd.
honest, ŏn′ĕst, *not* ŏn′ŭst.
honorable, ŏn′ẽr-ȧ-bl, *not* ŏn′rȧ-bl.
hoof, hōōf, *not* hŏŏf.
horizon, hō-rī′zŏn.
horrid, hŏr′rĭd, *not* hôr′rĭd.
hors d'œuvre, ôr döv′r.
hovel, hŏv′ĕl, *not* hŭv′ĕl.
hundred, hŭn′drĕd, *not* hŭn′dērd.
hydraulics, hī-drô′lĭks, *not* hī-drŏl′ĭks.
hypocrisy, hĭp-ŏk′rĭs-ĭ.

ice-cream, īs′krēm, *not* īs-krēm′.
idiosyncrasy, ĭd-ĭ-ō-sĭng′krȧ-sĭ.
ignoramus, ĭg-nō-rā′mŭs, *not* ĭg-nō-rä′mŭs.
illustrate, ĭl-lŭs′trāt, *not* ĭl′lŭs-trāt.
impious, ĭm′pĭ-ŭs, *not* ĭm-pī′ŭs.
importune, ĭm-pôr-tʊn′.
impotent, ĭm′pō-tĕnt, *not* ĭm-pō′tĕnt.
inaugurate, ĭn-ô′gʊ-rāt, *not* ĭn-ô′gŭr-āt.
incomparable, ĭn-kŏm′pȧ-rȧ-bl, *not* ĭn-kŏm-pâr′-ā-bl.
indisputable, ĭn-dĭs′pʊ-tȧ-bl, *not* ĭn-dĭs-pʊ′tȧ-bl.
inexplicable, ĭn-ĕks′plĭk-ȧ-bl.
infamous, ĭn′fȧ-mŭs.
innocent, ĭn′nō-sĕnt, *not* ĭn′nō-sŭnt.
inquiry, ĭn-kwī′rĭ, *not* ĭn′kwĭr-ĭ.
insatiable, ĭn-sā′shȧ-bl *or* ĭn-sā′shĭ-ȧ-bl.
instead, ĭn-stĕd′, *not* ĭn-stĭd′.
interesting, ĭn′tẽr-ĕst-ĭng, *not* ĭn-tẽr-ĕst′ĭng.
international, ĭn-tẽr-năsh′ŭn-ăl, *not* ĭn-tẽr-nā′-shŭn-ăl.
inundate, ĭn-ŭn′dāt, *not* ĭn′ŭn-dāt.
iron, ī′ŭrn.
isinglass, ī′zĭng-glȧs, *not* ī′zĭn-glȧs.
italic, ĭ-tăl′ĭk, *not* ī-tăl′ĭk.
ivory, ī′vō-rĭ, *not* ī′vrĭ.

joist, joist, *not* jois.
jonquil, jŏn′kwĭl.
jostling, jŏs′lĭng, *not* jŏst′lĭng.
jowl, jōl, *not* jowl.
judgment, jŭj′mĕnt, *not* jŭj′mŭnt.
jugular, jʊ′gʊ-lẽr, *not* jŭg′yʊ-lẽr.
just (adv.), jŭst, *never* jĕst.

kaleidoscope, kȧ-lī′dō-skōp.
kept, kĕpt, *not* kĕp.
kettle, kĕt′l, *not* kĭt′l.
kiln, kĭl, *not* kīln.
kinetograph, kĭ-nē′tō-grȧf.
knout, nowt or nōōt.

laboratory, lăb′ō-rȧ-tō-rĭ, *not* lăb′rā-tō-rĭ.
lamentable, lăm′ĕnt-ȧ-bl, *not* lā-mĕnt′ȧ-bl.
language, lăng′gwāj, *not* lăng′gwĭj.
languor, lăng′gwẽr.
laryngitis, lăr-ĭn-jī′tĭs, *not* lăr-ĭn-jē′tĭs.

laugh, läf.
laundress, län′drĕs.
lava, lä′vȧ *or* lä′vȧ, *not* läv′ȧ.
legate, lĕg′āt, *not* lē′gāt.
length, lĕngth, *not* lĕnth.
library, lī′brā-rĭ, *not* lĭ′brĭ.
licorice, lĭk′ō-rĭs, *not* lĭk′ō-rĭsh.
literature, lĭt′ĕr-ȧ-tur.
lithographer, lĭth-ŏg′rȧ-fĕr, *not* lĭth′ō-grăf-ĕr.
long-lived, lŏng′līvd, *not* lŏng′lĭvd.
mackerel, măk′ĕr-ĕl, *not* măk′rĕl.
maestro, mä-ās′trō, *not* mā′strō.
magna charta, măg′nȧ kär′tȧ.
magnolia, măg-nō′lĭ-ȧ, *not* măg-nōl′yȧ.
malpractice, măl-prăk′tĭs, *not* măl′prăk-tĭs.
mange, mānj, *not* mănj.
mania, mā′nĭ-ȧ, *not* mān′yȧ.
maniacal, mȧ-nī′ăk-ăl, *not* mā′nĭ-ăk-ăl.
manœuvre, mȧ-nōō′vr.
maritime, măr′ĭt-ĭm.
marquis, mär′kwĭs; Fr. pron. mär-kē′.
masculine, măs′kŭ-lĭn, *not* măs′kŭ-līn.
massacre, măs′sȧ-kĕr.
mattress, măt′rĕs.
mausoleum, mô-sō-lē′ŭm.
mauve, mōv.
mayonnaise, mȧ-yō-nāz′.
megrim, mē′grĭm.
meningitis, mĕn-ĭn-jī′tĭs.
menu, mē-nōō′; Fr. pron., mē-nü′.
meringue, mē-răng′.
mesne, mēn.
metric, mĕt′rĭk, *not* mē′trĭk.
migraine, mī-grān′.
minuet, mĭn′yŭ-ĕt, *not* mĭn-yŭ-ĕt′
mirage, mē-rázh′; mē-räzh′.
miserere, mĭz-ē-rē′rē.
mischievous, mĭs′chē-vŭs, *not* mĭs-chē′vŭs.
misconstrue, mĭs-kŏn′strŭ, *not* mĭs-kŏn-strŭ′.
mistletoe, miz′l-tō, *not* mĭs′l-tō.
mobile, mō′bĭl; mō-bēl′ *or* mō͝b′ĭl (Wor.).
modiste, mō-dēst′.
moire antique, mwär ăn-tēk′, *not* mō′rē ăn-tēk′.
musicale, mŭ-zē-kȧl′.
nature, nāt′yur.
nausea, nô′shē-ȧ *or* nô′shȧ, *not* nô′sē-ȧ.
necessarily, nĕs′ĕs-sĕr-ĭl-ĭ, *not* nĕs-ĕs-ser′ĭl-ĭ.
née, nā.
négligé, nā-glē-zhā′.
nephritis, nē-frī′tĭs.
nervine, nĕr′vĭn, *not* nĕr′vēn.
neuralgia, nŭ-răl′jĭ-ȧ, *not* nŭ-răl′jȧ.
nicety, nī′sē-tĭ, *not* nīs′tĭ.
nom de plume, nôN dŭ plüm.
nominative, nŏm′ĭn-ȧ-tĭv, *not* nō͝m′nȧ-tĭv.
nonchalant, nôN-shȧ-läN′.
nonpareil, nŏn-pȧ-rĕl′, *not* nŏn-pȧ-rēl′.
nouveau-riche, nōō-vō-rēsh′.
noxious, nŏk′shŭs, *not* nŏk′shĭ-ŭs.
nuptial, nŭp′shăl, *not* nŭp′chăl.
oaths, ōthz; *not* ōths.
obeisance, ō-bē′sȧns *or* ō-bā′sȧns.
obesity, ō-bĕs′ĭt-ĭ, *not* ō-bēs′ĭt-ĭ.
obligato, ŏb-lē-gä′tō.
obligatory, ŏb′lĭ-gā-tō-rĭ.
oboe, ō′boi *or* ō′bō-ā.
ocelot, ō′sē-lŏt.
often, of′n, *not* of′tĕn.
olden, ōld′n, *not* ōld′ĕn.
on dit, ôN-dē′.
ordeal, ôr′dē-ăl, *not* ôr-dē′ăl.
oust, owst, *not* ōōst.
overalls, ō′vĕr-ôlz, *not* ō′vĕr-hôlz.
oxide, ŏks′īd *or* ŏks′īd.
pæony, pē′ō-nĭ.
pajama, pȧ-jȧ′mȧ.
palmistry, päl′mĭs-trĭ, *not* pä′mĭs-trĭ.
papa, pȧ-pä′ *or* pä′pȧ.
papier-mâché, pap-yā′ mä-shā′.
papyrus, pȧ-pī′rŭs, *not* păp′ĭr-ŭs.
pariah, pä′rĭ-ȧ *or* pā′rĭ-ȧ.
participle, pär′tĭ-sĭp-l, *not* pärt′sĭp-l.
partridge, pär′trĭj, *not* pät′rĭj.
passé, pä-sā′.
pâté de foie gras, pä-tā′ dŭ fwä grä.
patriot, pā′trĭ-ŏt.
patron, pā′trŭn, *not* păt′rŭn.
penchant, päN-shäN′.
perhaps, pĕr-hăps′, *not* prăps.
peritonitis, pĕr-ĭ-tō-nī′tĭs, *not* pĕr-ĭ-tō-nē′tĭs.
persist, pĕr-sĭst′, *not* pĕr-zĭst′.
petite, pē-tēt′.
pharyngitis, făr-ĭn-jī′tĭs.
phial, fī′ăl.
photographer, fō-tŏg′rȧ-fĕr.
photogravure, fō-tō-grä-vür′.
physicist, fĭz′ĭs-ĭst.
piano, pē-ä′nō.
plait, plāt.
pneumatics, nu-măt′ĭks.
poem, pō′ĕm, *not* pō′ŭm.
poignant, poin′ȧnt, *not* poin′yant.
polygamy, pō-lĭg′ȧ-mĭ, *not* pŏl′ĭg-ā-mĭ.
portemonnaie, pōrt′mŭn-nā.
potato, pō-tā′tō, *not* pō-tā′tŭ.
portière, pôr-tĭ-ār′; Fr. pron., pôrt-yâr′.
precedence, prē-sē′dĕns, *not* prĕs′ē-dĕns.
preferable, prĕf′ĕr-ȧ-bl, *not* prē-fĕr′ȧ-bl.
prelate, prĕl′āt, *not* prē′lāt.
pretense, prē-tĕns′, *not* prē′tĕns.
prettily, prĭt′ĭl-ĭ, *not* prĕt′ĭl-ĭ.
prima donna, prē′mȧ dŏn′nȧ.
program, prō′grăm, *not* prō′grŭm.
propinquity, prō-pĭng′kwĭt-ĭ.
protégé, prō-tā-zhā′.
pseudonym, su′dō-nĭm.
psychic, sī′kĭk.
publicist, pŭb′lĭs-ĭst.
puisne, pu′nĭ.
puissant, pu′ĭs-ănt *or* pu-ĭs′ănt. *not* pwē′sănt.
pumpkin, pŭmp′kĭn, *not* pŭng′kĭn.
pursuivant, pûr′swē-vănt.
pyrites, pĭr-ī′tēz.
quash, kwŏsh, *not* kwăsh.
queue, kyu.
qui vive, kē-vēv′, *not* kwē-vēv′.
quoit, kwoit *or* koit.
quorum, kwō′rŭm, *not* kwôr′ŭm.
raceme, rȧ-sēm′.
radish, răd′ĭsh, *not* rĕd′ĭsh.
raison d'être, rāzôN′ dātr.
rancor, răng′kĕr, *not* răn′kĕr.
ransack, răn′săk, *not* răm′săk.
réchauffé, rā-shō-fā′.
recherché, rŭ-shâr-shā′.
recipe, rĕs′ĭp-ē.
reconnoiter, rĕk-ŏn-oi′tĕr, *not* rē-kŏn-oi′tĕr.
referable, rĕf′ĕr-ȧ-bl, *not* rē-fĕr′ȧ-bl
regalia, rē-gā′lĭ-ȧ.
régime, rā-zhēm′.
renaissance, rē-nā′săns; Fr. pron., rŭ-nā-säNs′.
rendezvous, rĕn′dē-vōō; Fr. pron., räN′dā-vōō.
reparable, rĕp′ȧ-rȧ-bl, *not* rē-pâr′ȧ-bl.
répertoire, rĕp′ĕr-twär; Fr. pron., rā-pâr-twär′.

replica, rĕp′lĭk-ȧ.
repoussé, rŭ-pōō-sā′.
reputable, rĕp′yu-tȧ-bl.
requiem, rē′kwĭ-ĕm.
research, rē-sĕrch′, *not* rē′sĕrch.
resource, rē-sōrs′, *not* rē′sōrs.
restaurant, rĕs′tō-rȧnt *or* rĕs′tō-rȧng.
résumé, rā-zōō-mā′; Fr. pron., rā-zü-mā′.
reveillé, rĕ-vāl′yā.
reverend, rĕv′ĕr-ĕnd, *not* rĕv′ĕr-ĕnt.
revocable, rĕv′ō-kȧ-bl, *not* rē-vō′kȧ-bl.
rheumatism, ru′mȧ-tĭzm, *not* rōōm′ȧ-tĭzm.
rinse, rĭns, *not* rĕns.
robust, rō-bŭst′, *not* rō′bŭst.
roil, roil, *not* rīl.
roof, rōōf, *not* rŏŏf.
root, rōōt, *not* rŏŏt.
rostrum, rŏs′trŭm, *not* rō′strŭm.
roué, rōō-ā′.
route, rōōt; rowt is perhaps the more common pronunciation in the United States.
rutabaga, ru-tȧ-bā′gȧ.
sachem, sā′chĕm, *not* săch′ĕm.
sacrament, săk′rȧ-mĕnt, *not* sā′krȧ-mĕnt.
sacrilegious, săk-rĭl-ē′jŭs, *not* săk-rĭl-ĭj′ŭs.
saengerfest, sâng′ĕr-fĕst.
sagacious, sȧ-gā′shŭs, *not* sȧ-găsh′ŭs.
said, sĕd.
salmon, săm′ŭn.
salve (ointment), säv.
satin, săt′ĭn, *not* săt′n.
savage, săv′āj, *not* săv′ĭj.
says, sĕz, *not* sāz.
scalene, skȧ-lēn′, *not* skā′lēn.
scared, skârd, *not* skârt.
scherzo, skĕrt′sō.
séance, sē′ăns; Fr. pron., sā-äns′.
seckel (pear), sĕk′l, *not* sīk′l.
secretary, sĕk′rē-tā-rĭ, *not* sĕk′ē-tā-rĭ.
separable, sĕp′ȧ-rȧ-bl.
sequin, sē′kwĭn, *not* sĕk′wĭn.
sesame, sĕs′ȧ-mē.
several, sĕv′ĕr-ăl, *not* sĕv-răl.
shriek, shrēk, *not* srēk.
signora, sēn-yō′rȧ.
sleek, slēk, *not* slĭk.
slept, slĕpt, *not* slĕp.
slough (cast-off skin), slŭf.
slough (ditch), slow.
snout, snowt, *not* snōōt.
solace, sŏl′ās, *not* sō′lās.
solecism, sŏl′ē-sĭzm, *not* sō′lē-sĭzm.
sonata, sō-nä′tȧ.
soprano, sō-prä′nō, *not* sō-prăn′ō.
sough, sŭf.
souvenir, sōō-vŭ-nēr′, *not* sōōv′nēr.
spoon, spōōn, *not* spŏŏn.
squalor, skwā′lôr (Web. and Wor.); skwŏl′ĕr or skwā′lĕr (Stor.).
steady, stĕd′ĭ, *not* stĭd′ĭ.
stoicism, stō′ĭs-ĭzm, *not* stō′ĭk-ĭzm.
stomach, stŭm′ak, *not* stŭm′ĭck.
suede, swād.
suite, swēt, *not* sut.
supple, sŭp′l, *not* sōō′pl.
surprise, sûr-prīz′, *not* sŭp-prīz′.
surveillance, sûr-vāl′yăns *or* vā′lăns.
syringe, sĭr′ĭnj, *not* sĭr-ĭnj′.
syrup, sĭr′ŭp.

table-d'hôte, tä′bl-dōt.
tapis, tăp′ĭs, tā′pĭs, or tȧ-pē′.
technique, tĕk-nēk′.
telegraphy, tē-lĕg′rȧ-fĭ.
tenet, tĕn′ĕt, *not* tē′nĕt.
tepid, tĕp′ĭd, *not* tē′pĭd.
tête à tête, tāt-ȧ-tāt′.
theater, thē′ȧ-tĕr, *not* thē-ā′tĕr.
three-legged, thrē′lĕgd, *not* thrē′lĕg-ĕd.
tic-douloureux, tĭk dōō-lōō-rōō′.
tonsilitis, tŏn-sĭl-ī′tĭs, *not* tŏn-sĭl-ē′tĭs.
tortious, tôr′shŭs.
tour, tōōr.
tout-ensemble, tōōt ăn-săn′bl.
trichina, trĭk-ī′nȧ.
tricycle, trī′sĭk-l, *not* trĭ′sī-kl.
trilobite, trī′lō-bīt, *not* trĭl′ō-bīt.
trousseau, trōō′sō′.
turnip, tûr′nĭp, *not* tûr′nŭp.
ultimatum, ŭl-tĭm-ā′tŭm, *not* ŭl-tĭm-ä′tŭm.
umbrella, ŭm-brĕl′ȧ, *not* ŭm-bēr-ĕl′ȧ.
uncivil, ŭn-sĭv′ĭl, *not* ŭn-sĭv′ŭl.
unctuous, ŭngkt′yu-ŭs.
undersigned, ŭn-dĕr-sīnd′, *not* ŭn-dĕr-zīnd′.
uninterested, ŭn-ĭn′tĕr-ĕst-ĕd.
unlearned (adj.), ŭn-lĕr′nĕd, *not* ŭn-lĕrnd′.
unlearned (part.), ŭn-lĕrnd′, *not* ŭn-lĕr′nĕd.
unprecedented, ŭn-prĕs′ē-dĕnt-ĕd.
untoward, ŭn-tō′ĕrd, *not* ŭn-tō-wôrd′.
used, uzd, *not* ust.
usually, yu′zhu-ăl-ĭ, *not* yu′zhăl-ĭ.
usurp, yu-zûrp′, *not* yu-sûrp′.
vagary, vȧ-gā′rĭ, *not* vā′gȧ-rĭ.
vagrant, vā′grănt, *not* văg′rănt.
vanquish, văng′kwĭsh, *not* văn′kwĭsh.
vase, vās *or* väz.
vaudeville, vōd′vĭl; Fr. pron., vōd-vēl′.
vehement, vē′hē-mĕnt.
veinous, vā′nŭs, *not* vē′nŭs.
venous, vē′nŭs, *not* vā′nŭs.
verbatim, vĕr-bā′tĭm, *not* vĕr-băt′ĭm.
version, vĕr′shŭn, *not* vĕr′zhŭn.
vessel, vĕs′sĕl, *not* vĕs′l.
veterinary, vĕt′ĕr-ĭn-ā-rĭ, *not* vĕt′rĭn-ā-rĭ.
vice versa, vī′sē vĕr′sȧ, *not* vīs′vĕr-sȧ.
victim, vĭk′tĭm, *not* vĭk′tŭm.
vis-a-vis, vēz-ȧ-vē′.
vitriol, vĭt′rĭ-ŭl, *not* vĭt′rŭl.
volatile, vŏl′ȧ-tĭl, *not* vŏl′ȧ-tēl, nor vŏl′ȧ-tīl.
volume, vŏl′yum.
voluntarily, vŏl′ŭn-tā-rĭl-ĭ, *not* vŏl-ŭn-tā′rĭl-ĭ.
was, wŏz, *not* wŭz.
water, wô′tĕr, *not* wŏt′ĕr.
which, hwĭch, *not* wĭch.
whisk, hwĭsk, *not* wĭsk.
whole, hol, *not* hōl.
whooping (cough), hōōp′ĭng, *not* hŏŏp′ĭng.
widow, wĭd′ō, *not* wĭd′ŭ.
window, wĭn′dō, *not* wĭn′dŭ.
wistaria, wĭs-tā′rĭ-ȧ, *not* wĭs-tē′rĭ-ȧ.
women, wĭm′ĕn, *not* wĭm′ĭn.
wondering, wŭn′dĕr-ĭng, *not* wŭn′drĭng.
wrath, răth, *not* răth.
wrestler, rĕs′lĕr, *not* rĕst′lĕr.
yacht, yŏt.
yellow, yĕl′lō, *not* yĕl′lŭ.
yew, yu.
yolk, yōlk *or* yōk.
zodiacal, zō-dī′ăk-ăl, *not* zō′dĭ-ăk-ŭl.

2. DIVISION OF PROPER NAMES.

Aachen, ä′kĕn.
Abbassides, ăb-băs′sĭdz.
Abélard, ăb′ē-lärd; Fr. pron., ä-bā-lär′.
Abomey, ăb-ō-mā′.
Aboukir, ä-bōō-kēr′.
About (Edmond), ĕd-môn′ ä-bōō′.
Abraham, ā′brȧ-hăm, *not* ā′brăm, unless spelled *Abram*.
Acapulco, ä-kä-pōōl′kō.
Achaia, ā-kā′yȧ *or* ä-kī′yä.
Acheron, ăk′ē-rŏn, *not* ăch′ē-rŏn.
Achitophel, ȧ-kĭt′ō-fĕl.
Aconcagua, ä-kŏn-kä′gwä.
Adige, ăd′ĭj-ē; It. pron., ä′dē-jā.
Adonais, ăd-ō-nā′ĭs.
Adonijah, ăd-ō-nī′jȧ.
Adoniram, ăd-ō-nī′răm.
Ægean, ē-jē′ăn.
Æolus, ē′ō-lŭs, *not* ē-ō′lŭs.
Afghanistan, ăf-găn-ĭs-tän′, *not* ăf-găn-ĭs′tăn; ăf-găn-ĭs-tän′ (Gaz.).
Agape, ăg′ȧ-pē.
Agassiz, ăg′ăs-ē *or* ăg-ăs′ĭz; Fr. pron., ä-gä-sē′.
Agincourt, ăzh-ăn-kōōr′.
Aguilar (Grace), ä-gē-lär′.
Agulhas, ä-gōōl′yäs.
Ahasuerus (King), ȧ-hăs-ū-ē′rŭs.
Ahasuerus (The Wandering Jew), ȧ-hăzh-ōō-ē′-rŭs.
Aïda, ä-ē′dä.
Aix-la-Chapelle, āks-lä-shä-pĕl′, *not* ā-lä-shä-pĕl′.
Akron (Ohio), ăk′rŏn, *not* ā′krŏn.
Alcæus, ăl-sē′ŭs.
Alcantara, ăl-kăn′tä-rä.
Alcibiades, ăl-sĭ-bī′ȧ-dēz.
Alcides, ăl-sī′dēz.
Alcuin, ăl′kwĭn.
Alcyone, ăl-sī′ō-nē.
Aldebaran, ăl-dĕb′ȧ-răn.
Aleutian (Islands), ā-lū′shĭ-ăn, *not* ā-lū′-shăn.
Alexander, ăl-ĕgz-ăn′dēr, *not* ăl-ĕks-ăn′dēr.
Alfieri, äl-fē-ā′rē.
Algonquin, ăl-gŏn′kwĭn.
Alighieri, ä-lē-gē-ā′rē.
Alleghany, ăl-lē-gā′nĭ.
Alleyn, ăl′ĕn.
Alma-Tadema, äl′mä tä′dä-mä, *not* äl′mä tä-dä′-mä.
Almagest, ăl′mȧ-jĕst.
Alnwick, ăn′nĭk.
Amiens, ăm′ē-ĕnz; Fr. pron., ä-mĭ-ăN′.
Amoskeag, ăm-ŏs-kĕg′.
Ampere, ăN-pâr′.
Amphion, ăm-fī′ŏn, *not* ăm′fĭ-ŏn.
Amphitrite, ăm-fĭ-trī′-tē, *not* ăm′fĭ-trīt.
Amphitryon, ăm-fĭt′rĭ-ŏn.
Amurath, ä-mōō-rät′.
Anaximenes, ăn-ăks-ĭm′ē-nēz.
Anchises, ăn-kī′sēz.
Andalusia, ăn-dȧ-lōō-shĭ′ȧ; ăn-dȧ-lū′shĭ-ȧ (Gaz.).
Andorra, ăn-dō′rä.
Androcles, ăn′drō-klēz.
Andromache, ăn-drŏm′ȧ-kē.
Andromeda, ăn-drŏm′ē-dȧ.
Andronicus, ăn-drō-nī′kŭs.
Angostura, ăn-gŏs-tōō′rä.
Angoulême d', dăN-gōō-lăm′.
Antietam, ăn-tē′tăm.
Antigone, ăn-tĭg′ō-nē.
Antinous, ăn-tĭn′ō-ŭs, *not* ăn-tĭn′ōōs.
Antiochus, ăn-tī′ō-kŭs, *not* ăn-tī-ŏk′ŭs.
Antiope, ăn-tī′ō-pē.
Apache, ä-pä′chā.
Apelles, ȧ-pĕl′ēz.
Aphrodite, ăf-rō-dī′tē, *not* ăf′rō-dīt.
Apollyon, ȧ-pŏl′ĭ-ŏn *or* ȧ-pōl′yŭn.
Appalachian, ăp-pȧ-lā′chĭ-ăn, *not* ăp-pā-lă′chĭ-ăn.
Appomattox, ăp-pō-măt′ŏks.
Aquinas (Thomas), ȧ-kwī′năs.
Arab, ăr′ăb; Wor., ā′răb as secondary pron.
Aram (Eugene), ā′răm, *not* ăr′ăm.
Arapahoe, ăr-ăp′ă-hō.
Arbela (Assyria), är-bē′lä.
Arbela (Sicily), är′bē-lä.
Archias, är′kĭ-ăs, *not* är′chĭ-ăs.
Archimedes, är-kĭm-ē′dēz, *not* är-kĭm′ē-dēz.
Archytas, är-kī′tăs.
Arcite, är′sīt or är-sīt′.
Arequipa, ä-rā-kē′pä.
Aries, ā′rĭ-ēz.
Arion, ā-rī′ŏn.
Aristides, ăr-ĭs-tī′dēz.
Aristobulus, ā-rĭs-tō-bū′lŭs *or* ăr-ĭs-tō-bū′lŭs.
Arkansas, är′kăn-sô.
Arles, ärlz; Fr. pron., ärl.
Aroostook, ȧ-rōō′stōōk.
Artaxerxes, är-tăks-ĕrk′sēz; Bib. är-tăg-zĕrk′zēz.
Artemis, är′tē-mĭs.
Artemisia, är-tē-mĭsh′ĭ-ȧ.
Artois, är-twä′.
Arundelian, ăr-ŭn-dēl′yăn; ăr-ŭn-dē′lĭ-ăn (Wor.).
Aryan (Indo-European), är′yăn *or* ăr′ĭ-ăn; ā′rĭ-an *or* ăr′ĭ-ăn (Stor.).
Ascham (Roger), ăs′kăm.
Asiatic, ā-shĭ-ăt′ĭk, *not* ā-zhĭ-ăt′ĭk.
Asmodeus, ăz-mō-dē′ŭs.
Asturias, ăs-tōō′rē-ăs.
Astyanax, ăs′tĭ-ăn-ăks.
Atahualpa, ä-tä-hwäl′pä.
Ate (goddess of revenge), ā′tē, *not* āt.
Athos (Mount), ăth′ŏs, *not* ā′thŏs.
Atilla, ȧ-tĭl′ȧ.
Auber, ō-bâr′, *not* ô′bĕr.
Aubert, ō-bâr′.
Aubigné d', dō-bēn-yā′.
Audubon, ô′dū-bŏn; Fr. pron., ō-dü-bôN′.
Auerstadt, ow′ēr-stĕt.
Augean, ô-jē′ăn, *not* ô′jē-ăn.
Augereau, ōzh-rō′.
Aurungzebe, ō-rŭng-zāb′.
Ausable, ô-sä′bl.
Austerlitz, ôs′tĕr-lĭts; Ger. pron., ows′tĕr-lĭts.
Auvergne, ō-vărn′yŭ.
Auxerre, ō-sār′.
Averroës, ä-vĕr′ō-ēz.
Avignon, ä-vēn-yôN′.
Avon, ā′vŏn, *not* ăv′ŏn.
Aytoun, ā′tōōn.
Badajos, bä-dä-hōs′.
Bagehot, băj′ŏt.
Bahia, bä-ē′ä.
Baireuth, bī′rŭth; Ger. pron., bī′roit.
Bajazet, băj-ȧ-zĕt′, *not* bā-jāz′ĕt.
Balboa de, dā bäl-bō′ä.
Balearic (Islands), băl-ē-ăr′ĭk, *not* băl-ē′rĭk.
Balthaser, băl′tä-zär.
Balzac de (Honoré), ō-nō-rā′ dŭ bäl-zäk′; anglicized, băl′zăk.
Banquo, băng′kwō; băn′kwō (Biog.).
Barberini (palace), bär-bä-rē′nē.
Barras de, dŭ bä-räs′ *or* dŭ bä-rä′.

Barthélemy, bär-tāl-mē′.
Bartholdi, bär-tōl-dē′, *not* bär-thōl′dē.
Baruch, bā′rŭk.
Bathsheba, băth-shē′bà *or* băth′shē-bà.
Baton Rouge, băt′ŭn rōōzh; Fr. pron., bà-tôN′ rōōzh.
Bayard de, dŭ bā′ärd; Fr. pron., dŭ bä-yär′.
Bayard (Thomas F.), bī′ärd, *not* bā′ärd.
Bayreuth, bī′rŭth; Ger. pron., bī′roit.
Beatrice Cenci, bā-ä-trē′chā chĕn′chē.
Beauchamp (Fr.), bō-shäN′.
Beauchamp (Eng.), bē′chăm.
Beauharnais de, dŭ bō-är-nā′.
Beethoven van, vän bā′tō-vĕn.
Bellerophon, bĕl-ĕr′ō-fŏn.
Bellini, bĕl-lē′nē.
Ben-Cruachan, bĕn-krōō′кăn.
Benguela, bĕn-gā′lä.
Bentivoglio, bĕn-tē-vōl′yō.
Béranger de, dŭ bā-rän-zhā′.
Berenice, bĕr-ē-nī′sē.
Bering (strait), bē′rĭng; Danish pron., bā′rĭng.
Bermoothes, bĕr-mōō′thēz.
Bernice, bĕr-nī′sē.
Bertuccio, bär-tōō′chō.
Besançon, bŭz-äN′sôN.
Betelguese, bĕt′ĕl-gēz.
Beust von, fŏn boist.
Bewick, bu′ik, *not* bē′wīk.
Beyroot, bā′rōōt, *not* bā-rōōt′; Turkish pron., bī′rōōt.
Bierstadt, bēr′stät, *not* bēr′stăd.
Biot, bē-ō′ *or* byō; bē-ō′ *or* bē-ōt′ (Biog.).
Bizet, bē-zā′.
Björnson (Björnstjerne), bē-örn-stē-ĕr′nĕ bē-yörn′son.
Blenheim, blĕn′ĭm, *not* blĕn′hīm.
Blois, blwä.
Blücher von, fŏn blōō′kĕr; Ger. pron., fŏn blü′kĕr.
Boadicea (Queen), bō-ăd-ĭs-ē′à.
Boanerges, bō-ăn-ēr′jēz.
Bode, bō′dĕ, *not* bōd.
Boerhaave, bōr′hăv; Dutch pron., bōōr′hä-vĕ.
Boethius, bō-ē′thī-ŭs.
Boïeldieu, bō-yĕl-dē-ö′; bwäl-dyö′ (Biog.).
Boileau, bwä-lō′.
Bokhara, bŏk-ä′rä.
Boleyn (Anne), bōōl′ĭn.
Bologna, bō-lōn′yä, *not* bō-lō′nä.
Bonheur (Rosa), bō-nör′, *not* bŏn′ŭr.
Bonnivard de, dŭ bō-nē-vär′.
Boötes, bō-ō′tēz.
Borghese, bōr-gā′zā.
Borromean (islands), bŏr-rō-mē′ăn.
Borromeo, bŏr-rō-mā′ō, *not* bŏr-rō′mē-ō.
Bossuet, bō-sü-ā′, *almost* bō-swā′.
Boucher de Perthes, bōō-shā′ dŭ pārt.
Boucicault, bōō-sē-kō′, *not* bōō′sē-kôlt.
Bouguereau, bōō-gēr-ō′, *not* bōō-zhēr-ō′.
Bouillon de (Godfrey), dŭ bōō-yôN′.
Bowditch, bŏw′dĭch, *not* bō′dĭch.
Bowdoin (college), bō′dn.
Bozzaris, bŏt′sür-ĭs.
Brahe (Tycho), tī′kō brā *or* brä; Danish pron., brä′ē.
Bremer (Fredrika), frĕd-rē′kà brē′mĕr; Swedish pron., brĭm′ĕr.
Breton (Jules), zhül brā-tôn′.
Briareus, brī-ā′rē-ŭs or brī′ā-rŭs, *not* brī-ā-rē′ŭs.
Brockhaus, brŏk′hows.
Broglie de, dŭ brō′ĭ; dŭ brōg-lē′ (Biog.).
Brougham, brōō′ăm *or* brōōm.
Brown-Séquard (Dr.), brown-sā-kär′.
Brüges, brŭ′jĕz; Fr. pron., brüzh.
Brugsch Bei, brōōsh bā.
Brunehilde, brōō-nē-hĭl′dĕ.
Brunelleschi, brōō-nĕl-lĕs′kē.
Buccleugh, bŭk-klu′.
Bucharest, bu-kā-rĕst′.
Buda Pesth, bu′dà-pĕst; Hungarian pron., bōō′-dō-pesht.
Buddha, bōōd′à.
Buddhism, bōōd′ĭzm,
Buddhist, bōōd′ĭst,
Buena Vista, bwā′nä vēs-tä *or* bō′nà vĭs-tà.
Buenos Aires, bō′nŭs ā′rĭz *or* âr; Sp. pron., bwā′nōs ī′rēs.
Buffon de, dŭ bŭf′ŭn; Fr. pron., dŭ bü-fôN′.
Bülow von, fŏn bü′lō.
Buonaparte, bōō-ō-nä-pär′tā.
Buonarroti, bōō-ō-när-rŏt′ē.
Burgoyne, bûr-ɢoin′.
Bysshe, bĭsh.
Byzantine, bī-zăn′tĭn *or* bĭz′ăn-tīn.
Byzantium, bĭz-ăn′shĭ-ŭm, *not* bīz-ăn′tĭ-ŭm.
Caceres, kä′thā-rēs.
Caedmon, kĕd′mŏn *or* kăd′mŏn.
Caesarea, sĕs-ā-rē′à, *not* sĕz-ā-rē′à.
Caiaphas, kā′yā-făs; kī′ăf-ăs (Stor.).
Caius (college at Cambridge), kēs *or* kēz.
Calais, kä-lā′.
Calaveras, kä-lä-vā′räs.
Callao, käl-lä′ō *or* käl-yä′ō.
Callimachus, kăl-lĭm′à-kŭs.
Callisthenes, kăl-lĭs′thē-nēz.
Cambacérès de, dŭ käN-bä-sā-rĕs′.
Cambyses, kăm-bī′sēz.
Canandaigua, kăn-ăn-dā′gwà, *not* kăn-ăn-dā′-ɢu-à.
Candace, kăn′dà-sē.
Canes Venatici, kā′nēz vē-năt′ĭs-ī.
Cannes, kän.
Canute, kā-nut′.
Capella, kà-pĕl′là.
Capitoline, kăp′ĭt-ōl-īn, *not* kăp′ĭt-ōl-ēn.
Capri, kä′prē.
Caracci, kä-rä′chē.
Cardan, kär′dăn; Fr. pron., kär-dăN′.
Caribbean (Sea), kăr-ĭb-ē′ăn, *not* kăr-ĭb′ē-ăn.
Carnot, kär-nō′.
Carolinian, kăr-ō-lĭn′ĭ-ăn, *not* kăr-ō-lī′nĭ-ăn.
Carracci, kär-rä′chē.
Cartagena, kär-tà-jē′nà; Sp. pron., kär-tä-hā′nä.
Carthaginian, kär-thà-jĭn′ĭ-ăn, *not* kär-thà-jē′-nĭ-ăn.
Cartier (Jaques), zhäk kärt-yā′.
Casaubon, kà-sô′bŏn; Fr. pron., kä-zō-bôN′.
Cassiopeia, kăs-sĭ-ō-pē′yà.
Castiglione, käs-tēl-yō′nā.
Castlereagh, käs-l-rā′.
Castruccio, käs-trōō′chō.
Cattaraugus, kăt-à-rô′gŭs.
Caucasus, kô′kà-sŭs, *not* kô-kā′sŭs.
Cavour di, dē kä-vōōr′.
Cayenne, kā-ĕn′ *or* kī-ĕn′.
Cayuga, kā-yōō′ɢà.
Cecrops, sē′krŏps.
Cedric, sĕd′rĭk *or* kĕd′rĭk.
Cedron, sē′drŏn.
Cellini (Benvenuto), bĕn-vā-nōō′tō chĕl-lē′nē.
Cerberus, sĕr′bē-rŭs.
Ceres, sē′rēz.
Cesnola di, dē chĕs-nō′là.
Cévennes, sā-vĕn′.

Chaeronea, kĕr-o-nē′ȧ.
Chagres, chä′grēs, *not* shä′grēs.
Cham, käm.
Chamonix, shä-mō-nē′.
Chamouni, shä-mōō-nē′.
Champollion, shăm-pŏl′ē-ŏn; Fr. pron., shäN-pōl-yŏN′.
Champs-Elysées, shäN-zā-lē-zā′.
Chapultepec, chä-pōōl-tā-pĕk′.
Charon, kā′rŏn, *not* chā′rŏn.
Charybdis, kȧ-rĭb′dĭs.
Châteaubriand de, dŭ shä-tō-brē-äN′.
Chaudière (Falls), shō-dē-âr′.
Chautauqua, shȧ-tô′kwä, *not* chȧ-tô′kwä.
Chedorlaomer, kĕd-ôr-lā′ō-mĕr *or* ō′mĕr.
Cheops, kē′ŏps, *not* chē′ŏps.
Cherbuliez, shĕr-bü-lē-ā′.
Chersonesus, kĕr-sō-nē′sŭs.
Cherubini, kā-rōō-bē′nē.
Cheyenne, shī-ĕn′; shē-ĕn′ (Gaz.).
Chihuahua, chē-wä′wä.
Chillicothe, chĭl-ĭ-kŏth′ē, *not* chĭl-ĭ-kō′thē.
Chimborazo, chĭm-bō-rä′zō; Sp. pron., chēm-bō-rä′thō.
Cholmondeley, chŭm′lĭ.
Chryseis, krī-sē′ĭs.
Chuquisaca, chōō-kē-sä′kä.
Cimabue, chē-mä-bōō′ȧ.
Cimon, sī′mŏn.
Cincinnati, sĭn-sĭn-nä′tĭ, *not* sĭn-sĭn-năt′ŭ.
Cinque-ports, sĭngk′pōrts.
Circe, sĕr′sē.
Cirencester, sĭs′ĕt-ĕr *or* sĭs′ĭs-ĕr.
Civita Vecchia, chē′vē-tä vĕk′kē-ä.
Cleobulus, klē-ō-bu′lŭs, not klē-ŏb′yu-lŭs.
Cleomenes, klē-ŏm′ē-nēz.
Clough (Arthur Hugh), klŭf.
Cnidus, nī′dŭs.
Cockburn (Lord), kō′bûrn, *not* kŏk′bŭrn.
Codrus, kō′drŭs.
Cohoes, kō-hōz′, *not* kō-hōōz′.
Colbert, kōl-bâr′.
Coligny de, dŭ kō-lēn-yē′ *or* dŭ kō-lēn′yē.
Colman, kōl′măn, *not* kŏl′măn.
Cologne, kō-lōn′; Fr. pron., ko-lon′yŭ.
Colquhoun, kō-hōōn′.
Comanche, kō-măn′chē; kō-măn′chā (Gaz.).
Combe, kōōm *or* kōm.
Comte, kôNt.
Condé de, dŭ kôn-dā′.
Condillac de, dŭ kôn-dē-yäk′.
Condorcet de, dŭ kôn-dōr-sā′.
Cophetua, kō-fĕt′yu-ȧ.
Coquelin, kok-lăN′.
Corot, kō-rō′.
Correggio da, dä kŏr-rā′jō.
Corydon, kŏr′ĭ-dŏn.
Cotopaxi, kō-tō-păk′sē; Sp. pron., kō-tō-pä′hē.
Courbet, kōōr-bā′.
Cousin, kōō-zăN′.
Coxsackie, kŏŏk-sō′kē.
Cracow, krā′kō.
Cruikshank, krŏŏk′shăngk.
Cumæan, ku-mē′ăn.
Cuvier, kü-vē-ā′.
Cuyahoga, kī-ȧ-hō′gȧ.
Cuyp, koip.
Cuzco, kōōs′kō.
Cyaxares, sī-ăks′ȧ-rēz.
Cybele, sĭb′ē-lē *or* sĭb-ē′lē.
Cyprian, sĭp′rĭ-ăn, *not* sī′prĭ-ăn.
Czajkowski, chī-kŏvs′ké.
Czerny, chĕr′nē.
Daguerre, dä-gâr′.
Dahlgren, dăl′grĕn.
Damiens, dā′mĭ-ĕnz; Fr. pron., dä-mē-ăN′.
Damon, dā′mŏn.
Dandolo, dän′dō-lō.
Dannecker von, fŏn dän′ĕk-ĕr.
Darius, dā-rī′ŭs.
Daubigny, dō-bēn-yē′.
Daudet (Alphonse), äl-fôNs′ dō-dā′.
Davoust, dä-vōō′.
De Amicis, dā ä-mē′chēs, *not* dē ä-mē′sis.
Deborah, dĕb′ō-rȧ, *not* dē-bō′rȧ.
Delaroche, dŭ-lä-rosh′.
Delft, dĕlft.
Demetrius, dē-mē′trĭ-ŭs, *not* dē-mĕt′rĭ-ŭs.
Deneb, dē′nĕb.
Deptford, dĕt′fŭrd; dĕd′fŭrd (Gaz.).
Descartes, dā-kärt′.
Des Moines, dē moin′.
Desmoulins, dā-mōō-lăN′.
Détaille, dā-tä′yŭ.
Dhaulagiri, dow-lä-gē′rē.
Diderot, dē-drō′.
Didot, dē-dō′.
Dieppe, dē-ĕp′.
Dies Iræ, dī′ēz ī′rē.
Dijon, dē-zhôN′.
Dionysus, dī-ō-nī′sŭs.
Discobolus, dĭs-kŏb′ō-lŭs.
Disraeli, dĭz-rā′lē *or* dĭz-rē′lē; dĭz-rā′ĕl-ē (Biog.).
Dnieper, nē′pĕr; Russian pron., dnyĕp′ĕr.
Dniester, nēs′tĕr; Russian pron., dnyĕs′tĕr.
Dolce (Carlo), dōl′chā.
Dolci (Carlo), dōl′chē.
Domenichino, dō-mĕn-ē-kō′nō.
Doña, dōn′yȧ.
Donegal, dŏn-ē-gôl′, *not* dŏn′ē-găl.
Don Quixote, dŏn kwĭks′ōt; Sp. pron., dōn kē-hō′tā.
Dovrefield, dō-vrŭ-fī-ĕld′.
Drachenfels, drä′kĕn-fĕls.
Drogheda, drŏ′hĕd-ȧ.
Du Chaillu, dü shä-yü′.
Duchesne, dü shān′.
Dudevant (Mme.), düd-väN′.
Dumas, dü-mä′ *or* dü-mäs′.
Duplessis, dü-plā-sē′.
Duquesne, dü-kān′.
Dürer (Albert), dü′rĕr.
Duyckinck, dī′kĭngk.
Ebers (Georg), gā-ōrk′ ā′bĕrs.
Ecbatana, ĕk-băt′ȧ-nȧ.
Edam, ā-däm′, *not* ē′dăm.
Eleanor, ĕl′ē-ȧ-nôr.
Eleazar, ē-lē-ā′zär *or* ē-lē′ā-zär.
Elgin, ĕl′gĭn, not ĕl′jĭn.
Eliphalet, ē-lĭf′ȧ-lĕt.
Elssler (Fanny), ĕls′lĕr, *not* ĕs′lĕr.
Emmaus, ĕm-mā′ŭs *or* ĕm′mā-ŭs.
Encke, ĕng′kĕ.
Enghien d', dän-găN′; dän-gē-ăN′.
Epaminondas, ē-păm-ĭn-ŏn′dȧs.
Erasmus, ē-răz′mŭs, *not* ē-răs′mŭs.
Erato, ĕr′ȧ-tō, *not* ē-rā′tō, *nor* ĕr-ä′tō.
Eratosthenes, ĕr-ȧ-tŏs′thē-nēz.
Erectheum, ĕr-ĕk-thē′ŭm, *not* ē-rĕk′thē-ŭm.
Erigena, ē-rĭj′ē-nȧ *or* ĕr-ĭj-ē′nȧ.
Erostratus, ē-rŏs′trā-tŭs.
Escurial, ĕs-ku′rĭ-ăl; Sp. pron., ĕs-kōō-rē-äl′.
Estaing d', dĕs-tăN′.
Eugène, ö-zhân′.

Eugénie de Montijo, ö-zhā-nē′ dŭ môn-tē-zhō′.
Euler, yōō′lĕr; Ger. pron., oi′lĕr.
Eunice, yu′nĭs; Bib. yu-nī′sē *or* yu′nĭs.
Euphrosyne, yu-frŏs′ĭn-ē.
Euripides, yu-rĭp′ĭd-ēz.
Eurydice, yu-rĭd′ĭs-ē.
Fahrenheit, fä′rĕn-hīt.
Faneuil (Hall), făn′il, *commonly* fŭn′ĕl.
Farquhar, fär′kwär *or* fär′kēr.
Fatima, făt′ē-mä.
Faust, fowst *or* fôst.
Fechter, fĕsh′tĕr.
Fénelon, fā-nē-lôn′ *or* făn-lôn′.
Fesole, fĕs′ō-lā.
Feuerbach, foi′ĕr-bäk.
Feuillet (Octave), ōk-täv′ fö-yā′.
Fichte, fĭk′tĕ.
Fiesole, fyĕs′ō-lā.
Figaro, fē-gä-rō′, *not* fē-gā′rō.
Flotow von, fōn flō′tō.
Fomalhaut, fō′măl-hôt.
Fontainebleau, fôn-tān-blō′.
Fontenoy, fŏn-tē-noi′; Fr. pron., fôNt-nwä′.
Fortuny, fōr-tōō′nē.
Fouché, fōō-shā′.
Fourier, fōō′rē-ĕr; Fr. pron., fōō-rē-ā′.
Fra Diavolo, frä dē-ä′vō-lō.
Fraunhofer von, fōn frown′hō-fĕr.
Freischütz, Der, dĕr frī′shüts.
Frelinghuysen, frē′lĭng-hī-zĕn.
Fresnel, frā-nĕl′.
Freycinet de, dŭ frā-sē-nā′.
Friesic, frē′sĭk.
Froebel, frö′bĕl.
Froissart, frois′ärt; Fr. pron., frwä-sär′.
Froude, frōōd.
Galen, gā′lĕn.
Gallatin (Albert), găl′ä-tĭn; Fr. pron., gä-lä-tăN′.
Galle (Dr.), gä′lĕ.
Galvani, gäl-vä′nē.
Galway, gôl′wā, *not* găl′wā.
Garibaldi, găr-ĭb-ăl′dĭ, *not* găr-ĭb-ôl′dē.
Gauss, gows.
Gautier (Théophile), tā-ō-fēl′ gō-tē-ā′.
Gay-Lussac, gā-lü-säk′.
Geikie (James), gē′kē, *not* gī′kē.
Genghis Khan, jĕn′gĭs kän.
Genseric, jĕn′sĕr-ĭk.
Geoffrey, jĕf′rĭ.
Geoffroy, zhō-frwä′.
Geraldine, jĕr′ăl-dĭn.
Gérôme, zhā-rōm′.
Gesenius, gē-sē′nĭ-ŭs; Ger. pron., gā-zā′nē-ŏŏs.
Ghent, gĕnt, *not* jĕnt.
Ghiberti, gē-bĕr′tē.
Ghirlandajo, gēr-län-dä′yō.
Gizeh, gē′zĕ.
Gila, hē′lä.
Gil Blas, zhēl bläs; Sp. pron., hēl bläs.
Gioja, jō′yä.
Giordano Bruno, jōr-dä′nō brōō′nō.
Giorgione, jōr-jō′nā.
Giotto, jŏt′tō.
Giovanni, jō-vän′nē.
Gironde, jē-rōnd′; Fr. pron., zhē-rôNd′.
Giuseppe, jōō-sĕp′pā.
Gladstone, glăd′stūn, *not* glăd-stōn.
Glück, glük.
Glyptothek, glĭp-tō-tāk′.
Gobelin, gŏb′ē-lĭn; Fr. pron., gō-blăN′.
Godavery, gō-dä′vĕr-ĭ.
Godiva (Lady), gŏ-dī′vä.
Goethe von, fōn gö′tĕ.
Golgotha, gŏl′gō-thä, *not* gŏl-gō′thä.
Gortschakoff, gôrt-chä-kŏf′.
Gotham, gō′thăm.
Gottschalk, gŏt′shälk, *not* gŏt′shôk.
Gough, gŏf.
Gounod, gōō-nō′.
Gower, gow′ĕr *or* gōr.
Granicus, grȧ-nī′kŭs.
Greenough, grē′nō.
Greuze, gröz.
Grévy, grā-vē′.
Grosvenor, grōv′nĕr.
Grote, grōt.
Grotius, grō′shĭ-ŭs.
Grouchy de, dŭ grōō-shē′, *not* dŭ grōō′chē.
Gruyère, grü-yâr′.
Guelph, gwĕlf.
Guericke von, fōn gĕr′ĭk-ĕ *or* fōn gā′rĭk-ĕ.
Guido Reni, gwē′dō rā′nē *or* gōō-ē′dō rā′nē, *not* gē′dō rā′nē.
Guildhall, gĭld′hôl.
Guillotin, gē-yō-tăN′.
Guinevere, gwĭn′ē-vēr.
Guise de, dŭ gwēz; dŭ gwēz, dŭ gü-ēz′, *or* dŭ gēz (Biog.).
Guizot, gē-zō′ *or* gwē-zō.
Günther, gün′tĕr.
Gustavus, gŭs-tā′vŭs, *not* gŭs-tä′vŭs.
Gutenberg, gōō′tĕn-bĕrg, *not* gŭt′ĕn-bĕrg.
Guyot, gē-ō′.
Gwendolen, gwĕn′dō-lĕn.
Gyges, jī′jēz.
Habakkuk, hăb-ăk′ŭk *or* hăb′ăk-ŭk.
Haeckel, hĕk′l; Ger. pron., hâ′kĕl.
Haggai, hăg′ā-ī *or* hăg′ā.
Hague, hāg.
Halcyone, hăl-sī′ō-nē.
Halévy, ä-lā-vē′.
Halle, hä′lĕ.
Haller von, fōn häl′lĕr.
Hamilcar Barca, hȧ-mĭl′kär bär′kä.
Handel, hăn′dĕl; Ger. pron., hĕn′dĕl.
Hardicanute, här-dĭ-kā-nut′.
Harun-al-Raschid, hä-rōōn′äl-räsh′ĭd *or* hä-rōōn′-äl-rä-shēd′.
Havre de Grace, hä′vĕr *or* ä′vĕr dŭ gräs.
Hawaii, hä-wī′ē.
Haydn, hā′dn; Ger. pron., hī′dn.
Hayti, hā′tĭ; Fr. pron., ä-ē-tē′.
Hazlitt, hăz′lĭt.
Heine (Heinrich), hīn′rĭk hī′nĕ.
Heligoland, hĕl′ĭ-gō-länd.
Héloise, ā-lō-ēz′.
Helvétius, hĕl-vē′shĭ-ŭs; Fr. pron., ĕl-vā-sē-üs′.
Hemans (Mrs.), hĕm′ănz, *not* hē′mănz.
Hengist, hĕng′gĭst.
Hephæstion, hē-fĕs′tĭ-ŏn.
Heraclitus, hĕr-ȧ-klī′tŭs, *not* hē-răk′lĭt-ŭs.
Herat, hĕr-ät′.
Herculaneum, hĕr-ku-lā′nē-ŭm.
Herodotus, hē-rŏd′ō-tŭs.
Hesiod, hē′sĭ-ŏd; hē′shĭ-ŏd (Biog.).
Hesse, hĕs, *not* hĕs′sē.
Heyne, hī′nĕ.
Himalaya, hĭm-ä′lā-yȧ; often pronounced hĭm-ā-lā′yä.
Hippocrates, hĭp-pŏk′rā-tēz.
Hoang-Ho, hō-äng-hō′.
Hobbes, hŏbz.
Hoboken, hō′bō-kĕn.
Hohenlohe, hō′ĕn-lō-ĕ.

Hohenzollern, hō′ĕn-tsŏl-ĕrn.
Holbein, hōl′bīn.
Holstein, hōl′stīn.
Holyhead, hōl′ĭ-hĕd.
Holyoke (Mount), hōl′yōk, *not* hō′lĭ-ōk.
Hortense, ôr-tăNs′.
Hôtel de Ville, o-tĕl′ dŭ vēl.
Houdon, ōō-dôN′.
Houston (Sam), hŭs′tŏn, *not* hows′tŏn.
Hudibras, hŭ′dĭ-brăs, *not* hŭ′dĭ-brā.
Hughes (Thomas), hūz.
Huguenot, hŭ′gē-nŏt.
Huron (Lake), hū′rŏn.
Huygens, hī′gĕnz; Dutch pron., hoi′hĕnz.
Hyacinthe (Père), pâr ē-ä-săNt′.
Hyksos, hĭk′sŏs.
Hypatia, hī-pā′shĭ-ȧ.
Hyperion, hī-pē′rĭ-ŏn.
Iamblichus, ī-ăm′blĭk-ŭs.
Icarus, ĭk′ȧ-rŭs, *not* ī-kā′rŭs.
Ichabod, ĭk′ȧ-bŏd.
Ich dien, ĭk dēn.
Ictinus, ĭk-tī′nŭs.
Imogen, ĭm′ō-jĕn.
Ines, ē-nĕs′.
Ingelow (Jean), jēn ĭn′jē-lō.
Inkerman, ĭng-kĕr-măn′.
Invalides (Hôtel des), o-tĕl′ dāz ăN-văl-ēd′.
Iowa, ī′ō-wȧ, *not* ī-ō′wȧ.
Iphigenia, ĭf-ĭ-jē-nī′ȧ, *not* ĭf-ĭ-jē′nĭ-ȧ.
Irenaeus, ĭr-ē-nē′ŭs, *not* ī-rē′nē-ŭs.
Irene, ī-rē′nē.
Ischia, ĭs′kē-ȧ.
Isham, ī′shăm.
Isis, ī′sĭs.
Ismaïl, ĭs-mä-ēl′.
Isocrates, ī-sŏk′rā-tēz.
Isola, ē′sō-lä.
Isolde, ē-sōl′dā *or* ĭ-sōld′.
Israel, ĭz′rā-ĕl, *not* ĭs′rā-ĕl.
Isthmian, ĭs′mĭ-ăn *or* ĭst′mĭ-ăn.
Ithuriel, ĭ-thū′rĭ-ĕl.
Ivan, ē-vän′.
Ixion, ĭks-ī′ŏn, *not* ĭks′ĭ-ŏn.
Iztaccihuatl, ēs-täk-sē-hwät′l.
Jacobi, yä-kō′bē.
Jacquard, zhä-kär′.
Jacques, zhäk.
Jakutsk, yä-kōōtsk′.
Janauschek, yä′now-shĕk.
Japanese, jăp-ăn-ēz′ *or* ēs′.
Japheth, jā′fĕth, *not* jā′fĕt.
Java, jä′vȧ *or* jȧ′vȧ, *not* jăv′ȧ.
Jean Valjean, zhăN văl-zhăN′.
Jeanne d'Arc, zhän därk′.
Jeddo, yĕd′dō.
Jena, jĕn′ȧ; Ger. pron., yā′nä.
Jephthah, jĕf′thȧ, *not* jĕp′thȧ.
Jerusalem, jē-rū′sā-lĕm.
Jesuit, jĕz′yū-ĭt, *not* jĕzh′yū-ĭt.
Jevons, jĕv′ŏnz, *not* jē′vŏnz.
Joachim, jō′ȧ-kĭm; Ger. pron., yō′ȧ-kĭm.
Joan of Arc, jōn′ ŏv ärk *or* jō-ăn′ŏv ärk.
Joinville de, dŭ join′vĭl; Fr. pron., dŭ zhwăN-vēl′.
Jordaens, yōr′däns.
Joseffy, yō-sĕf′ĭ.
Joubert, zhōō-bâr′.
Jowett, jŏw′ĕt, *not* jō′ĕt.
Juarez, jōō-ä′rĕz; Sp. pron., hōō-ä′rĕth.
Jubilate, jū-bĭl-ā′tē *or* ā′tē.
Judaic, jū-dā′ĭk.
Juggernaut, jŭg′ĕr-nôt.
Juliet, jū′lĭ-ĕt.
Jungfrau, yōōng′frow.
Juniata, jū-nĭ-āt′ȧ.
Junot, zhü-nō′.
Jussieu de, dŭ jŭs-sū′; Fr. pron., dŭ zhü-sē-ö′.
Kansas, kăn′sās, *not* kăn′zās.
Kant, känt.
Katahdin (Mount), kä-tä′dĭn.
Kearney, kär′nĭ, *not* kēr′nĭ.
Kearsarge (Mount), kēr′särj.
Keble (John), kē′bl, *not* kēb′l.
Kenelm, kĕn′ĕlm, *not* kĕn-ĕlm′.
Kennebec, kĕn-ē-bĕk′, *not* kĕn′ē-bĕk.
Keokuk, kē′ō-kŭk, *not* kē-ō′kŭk.
Khiva, kē′vä.
Kief, kē-ĕf′.
Kiel, kēl.
Kiev, kē-ĕf′.
Kilauea, kē-low-ā′ä.
Kléber, klē′bĕr *or* klā′bâr; Fr. pron., klā-bâr′.
Knollys, nōlz.
Köln, köln.
Königsberg, kĕn′ĭgz-bĕrg; Ger. pron., kö′nĭgs-bĕrg.
Kosciusko, kŏs-sĭ-ŭs′kō.
Kossuth, kŏsh′ōōt.
Kotzebue von, fōn kŏt′sē-bōō.
Krause, krow′zĕ.
Krupp, krōōp.
Kurile (Islands), kōō′rĭl.
La Bruyère de, dŭ lä brü-ē-yâr′ *or* dŭ lä brü-yâr′.
Lachesis, lăk′ē-sĭs, *not* lăk-ē′sĭs.
Lachine (rapids), lä-shēn′.
Ladrones (Islands), lä-drōnz′; Sp. pron., lä-drō′nĕs.
Laertes, lā-ēr′tēz.
Laffitte, lä-fēt′.
Lafontaine de, dŭ lä-fŏn-tān′; Fr. pron., dŭ lä-fôN-tān′.
La Fourche, lä fōōrsh′.
La Guayra, lä gwī′rä.
Lalla Rookh, lä′lȧ-rōōk, *not* lä-lȧ-rŏŏk′.
Languedoc, läN′gŭ-dok.
Lannes, lăn or län.
Laocoön, lā-ŏk′ō-ŏn, *not* lā-ō-kōōn′.
Laplace de, dŭ lä-pläs′.
Laputa, lȧ-pū′tȧ.
Lares, lā′rēz.
La Rochefoucauld de, dŭ lä rŏsh-fōō-kō′.
Latin, lăt′ĭn.
Lausanne, lō-zän′.
Lavoisier, lä-vwä-zē-ā′.
Layard, lā′ĕrd.
Lebrun, lŭ-brŭN′.
Le Clerc, lŭ klâr′, *not* lŭ klârk′.
Ledru-Rollin, lŭ-drü′-rō-lăN′.
Legaré, lŭ-grē′.
Leibnitz von, fŏn līp′nĭts.
Leicester, lĕs′tĕr.
Leigh (Aurora), lē, *not* lā.
Leila, lē′lȧ, *not* lī′lȧ.
Leipsic, līp′sĭk.
Leipzig, līp′tsĭg.
Lely (Sir Peter), lē′lĭ.
Lenape, lĕn′ă-pē.
L'Enclos de (Ninon), nē-nôN′ dŭ läN-klō′.
Leominster, lĕm′ĭn-stĕr, *not* lē′ō-mĭn-stĕr.
Le Sage, lŭ säzh′.
Lesseps de, dŭ lā-sĕps′; dŭ lā-sĕp′ (Biog.).
Le Sueur, lŭ sü-ör′.
Leutze, loit′sē.
Lever (Charles), lē′vĕr, *not* lĕv′ĕr.

Leverrier, lŭ-vĕr′ĭ-ĕr; Fr. pron., lŭ-vā-rē-ā′.
Lewes (George Henry), lu′ĭs, *not* luz.
Leyden, lī′dĕn.
Lieber, lē′bĕr.
Liebig von, fŏn lē′bĭg.
Liége, lēj; Fr. pon., lē-ăzh′.
Lima (Peru), lē′mä.
Lima (U. S.), lī′mä.
Limoges, lē-mōzh′.
Lincoln, lĭng′kŭn, *not* lĭn′kŭn.
Linné von, fŏn lĭn′ā.
Liszt (Franz), fränts lĭst.
Lodi, lō′dē.
Lopé de Vega, lō′pā dā vā′gä.
Lopez, lō′pĕs; Sp. pron., lō′pĕth.
Los Angeles, lōs ăn′jĕl-ēz; Sp. pron., lōs äng′-hĕl-ĕs.
Lucrezia Borgia, lōō-krāt′sē-ä bōr′jä.
Luigi, lōō-ē′jē.
Luther, lu′thĕr; Gr. pron., lōō′tĕr.
Lycidas, lĭs′ĭ-dăs.
Lyell (Sir Charles), lī′ĕl.
Lyly (John), lĭl′ĭ.
Lyonnaise, lī-ŏn-āz′; Fr. pron., lē-on-āz′.
Macbeth, măk-bĕth′, *not* măk′bĕth.
Machiavelli de, dā mäk-ē-ä-vĕl′ē.
Mackay (Charles), măk-ī′ *or* măk-ā′.
Macleod, măk-lowd′.
Macready, măk-rē′dĭ, *not* măk-rā′dĭ.
Maggiore (Lake), mäd-jō′rā.
Magyar, măg′yär; Hung. pron., mŏd-yŏr′; măd′-yär (Stor.).
Mahabharata mä-hä-bä′rä-tä.
Maintenon de, dŭ măn-tŭ-nôn′.
Mainz, mīnts.
Malcolm, măl′kŭm.
Malebranche, mäl-brän^Nsh′.
Malesherbes de, dŭ mäl-zârb′.
Malibran, mä-lē-brän^N′; anglicized, măl′ĭ-brăn.
Malpighi, mäl-pē′gē.
Malthus, măl′thŭs.
Manetho, măn′ē-thō.
Mansard, män^N-sär′; anglicized măn′särd.
Maori, mä′ō-rē.
Maracaybo, mä-rä-kī′bō.
Marat, mä-rä′, *not* măr-ăt′.
Mardigras, mär-dē-grä′.
Maria Theresa, mā-rī′à tē-rē′să.
Marie Antoinette, mä-rē′ ăn-twä-nĕt′.
Marion, măr′ē-ŏn.
Marius, mā′rĭ-ŭs, *not* măr′ĭ-ŭs.
Marjoribanks, märch′bängks.
Marlborough (Duke) môl′brō; môl′bŭr-ŭ (Biog.).
Marochetti, mä-rō-kĕt′ē.
Marseillaise (hymn), mär-sā-yāz′.
Marseilles (Fr.), măr-sālz′.
Masaniello, mä-sä-nē-ĕl′lō.
Massasoit, măs′sā-soit.
Massillon, măs′ĭl-ŏn; Fr. pron., mä-sē-yôn′.
Mather (Cotton), măth′ĕr.
Mauch Chunk, môk chŭngk′.
Mauna Loa, mow′nä lō′ä.
Maupertius de, dŭ mō-pâr-twē′.
Maximilian (Emperor), măks-ĭ-mĭl′yăn.
Mayence, mä-yä^Ns′.
Mazarin, măz-ăr-ĕn′; Fr. pron., mä-zä-rä^N′.
Mazzini, mät-sē′nē.
Medici de', dā mĕd′ē-chē *or* dā mā′dē-chē.
Mefistofele, mā-fēs-tō′fā-lā, *not* mĕf-ĭs-tŏf′ē-lē.
Mehemet Ali, mā′hĕm-ĕt ä′lē.
Méhul, mā-ül′.
Meissonier, mā-sō-nē-ā′.
Melanchthon, mē-lăngk′thŏn; Ger. pron., mē-länk′tōn.
Menai (Straits), mĕn′ī, *not* mē′nī.
Mencius, mĕn′shĭ-ŭs.
Mendelssohn Bartholdy, mĕn′dĕl-sōn bär-tōl′dē.
Metternich von, fŏn mĕt′ĕr-nĭk.
Meyerbeer, mī′ĕr-bār.
Miami, mī-ä′mī.
Michael, mī′kā-ĕl; coll., mī′kĕl.
Michael Angelo, mī′kā-ĕl ăn′jā-lō.
Michel-Ange (Fr.), mē-kĕl′-ä^Nzh.
Michelangelo (It.), mē-kĕl-ăn′jā-lō.
Millais, mĭl-lā′.
Millet, mē-yā′.
Mirabeau de, dŭ mē-rä-bō′; anglicized, mĭr′ă-bō.
Missouri, mĭs-sōō′rĭ, *not* mĭz-sōō′rĭ.
Mivart (St. George), mĭv′ärt.
Mnemosyne, nē-mŏs′ĭn-ē.
Mœris (Lake), mē′rĭs.
Mohammed, mō-hăm′ĕd.
Molière, mō-lē-âr′; Fr. pron., mol-yâr′.
Moltke von, fŏn mōlt′kĕ.
Montaigne de, dŭ mŏn-tān′; Fr. pron., dŭ mô^N-tân′yŭ.
Mont Blanc, mô^N-blä^N′; often anglicized, mŏnt-blăngk′.
Montcalm de, dŭ mŏnt-käm′; Fr. pron., dŭ môn-kälm′.
Mont Cenis, mô^N sŭ-nē′.
Montesquieu de, dŭ mŏn-tĕs-ku′; Fr. pron., dŭ mô^N-tĕs-kyö′.
Monticello (Italy), mŏn-tē-chĕl′lō.
Moore (Thomas), mōr *or* mōōr.
Moscheles, mŏsh′ĕl-ĕs.
Moses, mō′zĕz.
Moultrie, mōō′trĭ *or* mōōl′trĭ.
Mozart, mō-zärt′; Ger. pron., mōt′särt.
Müller (Max), mül′ĕr.
Munchausen, mŭn-chō′sĕn.
München, mün′kĕn.
Münchhausen von, fŏn münk′how-zĕn.
Munkacsy de, dŭ mōōn′käch-ē.
Murat, mu-rät′; Fr. pron., mü-rä′.
Murillo, mu-rĭl′lō; Sp. pron., mōō-rēl′yō.
Musset de, dŭ mü-sā′.
Nantes, năntz; Fr. pron., nä^Nt.
Napier, nā′pē-ĕr.
Natchitoches, năk-ē-tŏsh′ *or* năch-ĭ-tŏch′ĕs.
Nebuchadnezzar, nĕb-yu-kăd-nĕz′är.
Nepos (Cornelius), nē′pŏs.
Nesselrode von, fŏn nĕs′ĕl-rō-dē.
Neuchâtel, nö-shä-tĕl′.
Neumann, noi′măn, *not* nu′măn.
Nevada, nē-vä′dà.
Newfoundland, nu′fŭnd-lănd.
New Orleans, nu ôr′lē-ănz, *not* nu ôr-lēnz′.
Nibelungen-Lied, nē′bĕl-ŏŏng-ĕn-lēd.
Nice, nēs.
Niebuhr, nē′bōōr.
Nijni-Novgorod, nĭzh′nē-nŏv-go′rŏd; nizh′nē-nŏv-gō-rŏd′ (Gaz.).
Nismes, nēm.
Notre Dame, nō-tr däm′.
Novalis, nō-vä′lĭs.
Ober Ammergau, ō′bĕr ăm′mĕr-gow.
Odoacer, ō-dō-ā′sĕr, *not* ō-dō′ā-sĕr.
Odysseus, ō-dĭs′ē-ŭs *or* ō-dĭs′sus.
Oedipus Tyrannus, ĕd′ĭp-ŭs tĭr-ăn′ŭs.
Oehlenschläger, ö′lĕn-shlā-gĕr.
Oersted, ör′stĕd.
Ole Bull, ō′lē bōōl.
Opie, ō′pĭ.

Origen, ŏr′ĭ-jĕn.
Oude, owd, *not* ōōd.
Oudinot, ōō-dē-nō′.
Ouida, wē′dä.
Ovid, ŏv′ĭd, *not* ō′vĭd.
Paganini, pä-gä-nē′nē.
Paget, paj′ĕt.
Palfrey, pôl′frĭ.
Palgrave, pôl′grāv.
Palissy, păl′ĭs-ĭ; Fr. pron., pä-lē-sē′.
Pall-Mall (street in London), pĕl-mĕl′, *not* păl-măl′ *nor* pôl-môl′.
Palmerston, päm′ĕr-stŭn, *not* păl′mĕr-stŭn.
Paoli di, dē pä′ō-lē, *almost* pow′lē.
Parnell, pär′nĕl, *not* pär-nĕl′.
Parrhasius, păr-rā′shĭ-ŭs, *almost* păr-rā′shŭs.
Pascal, päs′kăl; Fr. pron., päs-käl′.
Pasteur, päs-tör′.
Perugino, pā-rōō-jē′nō.
Pestalozzi, pĕs-tä-lōt′sē.
Pesth, pĕst; Hungarian pron., pĕsht.
Petrarch, pē′trärk.
Petruccio, pā-trōō′chō.
Phaedrus, fē′drŭs.
Philippi, fĭl-ĭp′ī, *not* fĭl′ĭp-ī.
Phocion, fō′shĭ-ŏn, *not* fō′shŏn.
Piccolomini, pĭk-ō-lō′mē-nē.
Pisa, pē′zä *or* pē′sä.
Pisistratus, pī-sĭs′trā-tŭs, *not* pĭs-ĭs-trā′tŭs.
Pizarro, pē-zär′ō; Sp. pron., pē-thär′o.
Pleiades, plē′yà-dēz.
Pleiads, plē′yădz.
Pliny, plĭn′ĭ.
Plotinus, plō-tī′nŭs.
Pnyx, nĭks.
Poitiers, pwà-tĭ-ā′; sometimes anglicized poi-tērz′.
Pompeii, pŏm-pā′yē, *not* pŏm′pē-ī.
Ponce de Leon, pōn′thā dā lā-ōn′; anglicized pŏns dē lē′ŏn.
Pontius, pŏn′shĭ-ŭs, *not* pŏn′shŭs.
Popocatapetl, pō-pō′kät-ä-pā-tl; pō-pō-kä-tä-pĕt′l.
Port au Prince, pōrt′ō-prĭns; Fr. pron., pōrt-ō-prĂNs′.
Poughkeepsie, pō-kĭp′sĭ, *not* pō-kēp′sĭ.
Pouschkin, pōōsh′kĭn *or* pōōsh′kēn.
Powhatan, pow-hăt′ăn′, *not* pow-hăt′ăn.
Pozzuoli, pŏt′sōō-ō′lē.
Praxiteles, prăks-ĭt′ē-lēz.
Provençal, prō-vĕn′săl; Fr. pron., prō-vän-sàl′.
Psyche, sī′kē.
Ptolemy, tŏl′ē-mĭ.
Puebla, pwĕb′lä.
Pythagoras, pĭth-ăG′ō-răs, *not* pī-thăG′ō-răs.
Quatre Bras, kä′tr brä.
Rabelais, räb-lā′; rä-bĕl-ā′ *or* rä-blā′ (Biog.).
Rachel (actress), rā-shĕl′.
Racine, rä-sēn′.
Raleigh (Sir Walter), rô′lĭ.
Rameses, răm′ē-sēz; rä-mē′sēz (Stor.).
Ramillies, răm′ĭl-ēz; Fr. pron., rä-mēl-yē′ *or* rä-mē-yē′.
Raphael, răf′à-ĕl; rā′fà-ĕl *or* rä′fä-ĕl (Biog.).
Réaumur de, dŭ rā-ō-mür′.
Récamier, rā-kä-mē-ā′.
Reichsrath, rīks′rät.
Reichstadt, rīks′stät.
Reichstag, rīk′stäg.
Rembrandt, rĕm′bränt; Dutch pron., rĕm′bränt.
Rémusat de, dŭ rā-mü-zä′.
Renan, rū-nĂN′; anglicized, rē′năn *or* rē-năn′.
Rensselaer, rĕn′sē-lēr.
Rheims, rēmz; Fr. pron., rĂNs.
Rhodes, rōdz.
Ricardo, rē-kär′dō.
Ricci, rē′chē.
Richelieu de, dŭ rĭsh-ĕl-ōō′; Fr. pron., dŭ rēsh-lē-ö′.
Richter, rĭk′tĕr.
Robespierre de, dŭ rō′bĕs-pēr; Fr. pron., dŭ rob-ĕs-pyâr′.
Rochambeau de, dŭ rō-shäN-bō′.
Roland, rō′lănd; Fr. pron., rō-läN′.
Rollin, rŏl′ĭn; Fr. pron., rō-lăN′.
Rollo, rŏl′ō.
Romanof, rō-mä′nŏf.
Romola, rŏm′ō-lå.
Rossetti, rŏs-sĕt′ē.
Rossini, rŏs-sē′nē.
Ruy Blas, rōō′ē-bläs.
Ruysdael, rois′däl.
Ruyter de, dŭ rī′tĕr; Dutch pron., dŭ roi′tĕr.
Ryswick, rīz′wĭk; Dutch pron., rīs′vĭk.
St. Cloud, sānt klowd′; Fr. pron., săn klōō′.
St. Croix, sānt kroi′; Fr. pron., săn krwä′.
St. Cyr, săn sēr′.
St. Denis, sānt dĕn′ĭs; Fr. pron., săN dĕn-ē′.
St. Simon de, dŭ sānt sī′mŏn; Fr. pron., dŭ săN sē-môN′.
Sainte-Beuve, săNt-böv′.
Sala (George Augustus), sā′lä, *not* sä-lä′.
Saladin, săl′ăd-ĭn.
Salome, sà-lō′mē.
Samoa, sä-mō′ä.
San Joaquin, săn hō-ä-kēn′, *almost* wä-kēn′.
San José, săn hō-sā′.
San Juan, săn hōō-än′.
San Luis Potosi, săn lōō-ēs′ pō-tō-sē′.
Sardanapalus, sär-dà-nà-pā′lŭs, *not* sär-dăn-ăp′-ā-lŭs.
Sault, sō *or* sōō.
Scheele, shēl; Swedish pron., shā′lā.
Scheherezade, shā-hā-rā-zä′dā.
Schelling von, fŏn shĕl′lĭng.
Schenectady, skĕn-ĕk′tà-dĭ.
Schiedam, skē-dăm′, *not* shē-dăm′.
Schiller von, fŏn shĭl′lĕr.
Schleiermacher, shlī′ĕr-mäk-ĕr.
Schleswig-Holstein, shlēs′vĭG-hōl′stīn.
Schoharie, skō-hār′ĭ, *not* skō-hā′rĭ.
Schopenhauer, shō′pĕn-how-ĕr.
Schubert, shōō′bĕrt.
Schumann, shōō′män.
Schurz (Carl) shōōrts.
Sebastopol, Sĕb′ăs-tō′pŏl *or* Sē-băs′tō-pŏl; Rus. Sē-văs′tō-pŏl.
Sedan, sē-dăn′; Fr. pron., sŭ-dăN′.
Semiramide, sā-mē-rä-mē′dā. *not* sĕm-ĭr-ăm′ĭd-ē.
Semiramis, sē-mĭr′à-mĭs.
Sennacherib, sĕn-ăk′ĕr-ĭb *or* sĕn-à-kē′rĭb.
Sesostris, sē-sŏs′trĭs.
Severus, sē-vē′rŭs.
Sévigné de, dŭ sā-vēn-yā′.
Sèvres, sāvr; sĕvr *or* sāvr (Gaz.).
Seychelles, sā-shĕl′.
Sheboygan, shē-boi′găn.
Sheol, shē′ōl.
Sieyès, sē-yās′; sē-ĕs′ *or* sē-ā-yĕs′ (Biog.).
Sigismund (Emperor), sĭj′ĭs-mŭnd; Ger. pron., zē′GĭS-mōōnt.
Sikhs, sēks.
Simplon, sĭm′plŏn; Fr. pron., săN-plôN′.
Sioux, sōō.
Skaneateles (Lake), skăn-ē-āt′lēz.
Sluys, slois.

Sontag, sŏn′tăg *or* zōn′tăg.
Soult, sōōlt.
Southey, sow′thī *or* sŭth′ī.
Spinoza, spē-nō′zä.
Spurzheim, spŏŏrts′hīm.
Stabat Mater, stā′bät mā′tĕr.
Staël de, dŭ stäl′; Fr. pron., dŭ stä-ĕl′.
Steuben, stʊ′bĕn; Ger. pron., stoi′bĕn.
Strabo, strā′bō.
Strauss, strows.
Sully, sŭl′ī; Fr. pron., sü-lē′.
Swedenborg, swē′dĕn-bôrg; Swedish pron., svĭd′-ĕn-bōrg.
Sweyn, swān.
Taj Mahal, täzh mä-häl′.
Taliaferro, tŏl′ĭv-ēr.
Talma, tăl′mä; Fr. pron., täl-mä′.
Taney, tô′nĭ.
Tannhäuser, tän′hoi-zĕr.
Tauchnitz, towk′nĭts.
Teniers (David), tĕn′yĕrz; tĕn′ē-ĕrz (Biog.); Fr. pron., tā-nē-âr′.
Teufelsdröckh (Herr), hĕr toi′fĕls-drök.
Thalberg, täl′bĕrg.
Thales, thā′lēz.
Thermopylae, thĕr-mŏp′ĭl-ē.
Thierry, tyā-rē′.
Thiers, tē-âr′.
Thisbe, thĭz′bē.
Thomas (Ambroise), äN-brwäz′ tō-mä′.
Thoreau, thō′rō.
Thorwaldsen, tôr′wôld-sĕn *or* tôr′väl-zĕn.
Tighe (Mary), tī.
Tintoretto Il, ēl tĭn-tō-rĕt′ō; ēl tēn-tō-rĕt′ō (Biog.).
Tischendorf von, fōn tĭsh′ĕn-dôrf.
Tissot, tē-sō′.
Titian, tĭsh′ăn; tĭsh′ē-ăn (Biog.).
Tivoli (New York), tĭv′ō-lī; tĭv-ō′lē (Gaz.).
Tocqueville de, dŭ tok′vĭl; Fr. pron., dŭ tok-vēl′.
Tolstoi, tōl′stoi.
Torricelli, tŏr-rē-chĕl′lē.
Toussaint L'Ouverture, tōō-săN′ lōō-vĕr-tür′.
Tremont, trē-mŏnt′.
Trieste, trē-ĕst′; It. pron., trē-ĕs′tà.
Trondhjem, trŏnd′yĕm.
Trovatore Il, ēl trō-vä-tō′rā.
Truxillo, trōō-hēl′yō.
Tschaikowsky, chī-kŭvs′kĭ.
Tuesday, tʊz′dā, *not* tōōz′dĭ *nor* tyʊs′dĭ.
Tuileries, twēl-rē′, *not* twĭl′ēr-ēz.
Turenne de, dŭ tʊ-rĕn′; Fr. pron., dŭ tü-rĕn′.
Turgeneff, tōōr-gĕn′ĕf.
Tyndale, tĭn′dăl, *not* tĭn′dāl.
Tyrol, tĭr′ōl; Ger. pron., tē-rōl′.
Tyrwhitt, tĕr′ĭt.
Uhland, ōō′länt.
Ulrici, ōōl-rē′sē.
Utrecht, yʊ-trĕkt′; Dutch pron., ü′trĕkt.
Valenciennes, vä-lĕn-sĭ-ĕnz′; Fr. pron., vä-läN-sē-ĕn′.
Valhalla, văl-hăl′ä.
Vandyck, văn-dīk′.
Van Eyck, vän īk′.
Vauban de, dŭ vō-băN′.
Vaucluse, vō-klüz′.
Vaud (Pays de), pā-ē′ dŭ vō′.
Vaughan, vôn *or* vô′ăn.
Velasquez, vā-läs′kĕth.
Verboeckhoven, vĕr-bōōk′hō-vĕn.
Vercingetorix, vĕr-sĭn-jĕt′ō-rĭks.
Verdi, vâr′dē.
Verestchagin, vā-rĕs-tchä′gĭn.
Vernet, vĕr-nā′.
Veronese (Paul), vā-rō-nā′zā.
Versailles, vĕr-sālz′; Fr. pron., vĕr-sä′yŭ.
Vespasian, vĕs-pā′zhĭ-ăn.
Vespucci (Amerigo), ä-mā-rē′gō vĕs-pōōt′chē.
Vibert, vē-bâr′.
Vichy, vē-shē′.
Vienna, vī-ĕn′ä, *not* vī-ĕn′å.
Villiers, vĭl′yĕrz.
Vincennes, vĭn-sĕnz′; Fr. pron., văN-sĕn′.
Vinci da, dä vĭn′chē.
Viollet-le-Duc, vē-ō-lā′ lŭ-dük′.
Virchow, vĕr′chow; Ger. pron., fĭr′kō.
Vladimir, vlăd′ē-mĕr; Russian and Polish pron., vlä-dē′mĭr.
Volapük, vō-lä-pük′.
Vosges, vōzh.
Wagner, wăg′nĕr; Ger. pron., väg′nĕr.
Wagram, vä′gräm.
Walhalla, wŏl-hăl′ä.
Wallenstein von, fōn wŏl′ĕn-stīn; Ger. pron., fōn väl′ĕn-stīn.
Waller, wŏl′ĕr.
Warwick (Eng.), wôr′ĭk.
Waterloo, wô-tĕr-lōō′; Dutch pron., vä-tĕr-lō′.
Watervliet, wô-tĕr-vlēt′.
Watteau, vä-tō′; commonly wä-tō′.
Waukegan, wô-kē′găn.
Weber von, fōn vā′bĕr.
Wednesday, wĕnz′dā, *not* wĕd′nĕs-dā.
Wellesley (Islands), wĕls′lĭ.
Wellesley (College), wĕlz′lĭ.
Wemyss (Castle), wĕms.
Werther, wĕr′tĕr; Ger. pron., vār′tār.
Wesley, wĕs′lĭ.
Whitefield, hwīt′fēld, *not* hwīt′fēld.
Wieland, wē′länd; Ger. pron., vē′länt.
Wilhelm, vĭl′hĕlm.
Wilkesbarre, wĭlks′băr-ĭ.
Winnepesaukee (Lake), wĭn-ē-pē-sô′kē.
Wolf, wōōlf; Ger. pron., vōlf.
Wolseley (Sir Garnet), wōōlz′lĭ, *not* wōōl′zĭ.
Wolsey (Cardinal), wōōl′zĭ, *not* wōōl′sĭ.
Woolwich, wōōl′ĭj.
Worcester, wōōs′tĕr.
Worcestershire, wōōs′tĕr-shĭr.
Wörth (Ger.), vört.
Württemberg, vür′tĕm-bĕrg.
Wyandotte, wī-ăn-dōt′.
Wyckliffe, wĭk′lĭf.
Ximenes (Cardinal), zĭm-ē′nēz; Sp. pron., hē-mā′nĕs.
Yang-tse-kiang, yăng-tsē-kī-äng′.
Yenikale (Strait), yĕn-ē-kä′lā.
Yenesei, yĕn-ē-sā′ē.
Ygdrasyl, ĭg′drå-sĭl.
Yonge (Charlotte), yŭng.
Yosemite (Valley), yō-sĕm′ĭt-ē.
Youghiogheny, yō-hō-gā′nĭ.
Ypres, ē′pĕr.
Yvetot, ĕv-tō′.
Zeus, zʊs, *not* zē′ŭs.
Zeuxis, zʊk′sĭs.
Zipporah, zĭp-ō′rå.
Zollverein, tsōl′fē-rīn; zŏl′fĕr-īn (Stor.).
Zoroaster, zō-rō-ăs′tĕr, *not* zō′rō-ăs-tĕr.
Zorrilla y Moral, thŏr-ēl′yä ē mō-räl′.
Zutphen, zŭt′fĕn.
Zuyder Zee, zī′dĕr zē; Dutch pron., zoi′dĕr zā.
Zwingle, zwĭng′gl.
Zwingli, zwĭng′glē; Ger. pron., tsving′lē.

DICTIONARY OF ABBREVIATIONS.

A., a. Adjective.
A. Alto; Argon.
A., ans. Answer.
a., @ (Lat. *ad*), To; At.
a, aa. The like quantity of each.
A. A. Associate of Arts.
A. A. G. Assistant Adjutant General.
A. A. A. S. American Association for the Advancement of Science.
A. A. S. (Lat. *Academiae Americanae Socius*), Fellow of the American Academy.
A. A. S. S. (Lat. *Academiae Antiquarinae Societatis Socius*), Member of the American Antiquarian Society.
A. B. (Lat. *artium baccalaureus*), Bachelor of Arts.
Abbr., Abbrev. Abbreviated, Abbreviation.
Abl., ablat. Ablative.
Abp. Archbishop.
A. B. S. American Bible Society.
A. C. (Lat. *ante Christum*), Before Christ; Analytical Chemist.
Acad. Academy.
A. C. A. American Congregational Association.
Acc., Accus. Accusative.
Acc., Acct. Account.
A. D. (Lat. *anno Domini*), In the year of our Lord.
A. D. C. Aide-de-camp.
Ad., advt. Advertisement.
Adj. Adjective.
Adjt. Adjutant.
Adjt. Gen. Adjutant General.
Ad lib., Ad libit. (Lat. *ad libitum*), At pleasure.
Adm. Admiral.
Admr. Administrator.
Admx. Administratrix.
Adv. Adverb.
Ae., Aet. (Lat. *aetatis*), Of Age, Aged.
A. F. A. Associate of the Faculty of Actuaries.
A. G., Adjt. Gen. Adjutant General.
Ag. (Lat. *argentum*), Silver.
Agl. Dept. Agricultural Department.
Agr., Agric. Agriculture, Agricultural.
Agt. Agent.
A. H. (Lat. *anno Hegirae*), In the year of the Hegira, or flight of Mohammed.
A. H. S. (Lat. *anno humanae salutis*), In the year of human salvation.
A. I. A. Associate of the Institute of Actuaries; American Institute of Architecture.
A. I. C. E. Associate of the Institute of Civil Engineers.
A. L. of H. American Legion of Honor.
Ala. Alabama.
Alas. Alaska.
Ald. Alderman.
Alex. Alexander.
Alf. Alfred.
Alg. Algebra.
Al. Aluminium; aluminum.
A. M. (Lat. *anno mundi*), In the year of the world.
A. M. (Lat. *ante meridiem*), Before noon.
A. M. (Lat. *artium magister*), Master of Arts.
Am., Amer. America, American.
Amer. Phil. Soc. American Philosophical Society.
Amt. Amount.
A. N. Anglo-Norman.
an. (Lat. *anno*), In the year.
Anal. Analysis.
Anat. Anatomy, Anatomical.
Anc. Ancient.
Anon. Anonymous.
Ans. Answer.
A. N. S. S. Associate of the Normal School of Science.
Ant., Antiq. Antiquities, Antiquarian.
Anthrop. Anthropology, Anthropological.
A. O. U. American Ornithologists' Union.
A. O. U. W. Ancient Order of United Workmen.
Ap. Apostle.
Apoc. Apocalypse, Apocrypha.
Apog. Apogee.
App. Appendix; Apostles.
approx. Approximate, -ly.
Apr. April.
A. P. S. Associate of the Pharmaceutical Society.
Aq. (Lat. *aqua*), Water.
A. P. A. American Protestant Association; American Protective Association.
A. Q. M. Assistant Quartermaster.
A. Q. M. G. Assistant Quartermaster General.
A. R. (Lat. *anno regni*), In the year of the reign.
Ar., Arab. Arabic, Arabian.
Ar., Arr. Arrive, Arrives, Arrived, Arrival.
A. R. A. Associate of the Royal Academy.
Arab. Arabic, Arabian.
Aram. Aramaic.
Arch. Architecture.
Archaeol. Archaeology.
Archd. Archdeacon.
A. R. H. A. Associate of the Royal Hibernian Academy.
Arith. Arithmetic, Arithmetical.
Ariz. Arizona.
Ark. Arkansas.
Arm. Armenian; Armoric.
Arr. Arrive, Arrives, Arrived, Arrival.
A. R. R. (Lat. *anno regni regis* or *reginae*), In the year of the king's (or queen's) reign.
A. R. S. A. Associate of the Royal Scottish Academy.
A. R. S. L. Associate of the Royal Society of Literature.
A. R. S. M. Associate of the Royal School of Mines.
Art. Article.
A. S., A.-S. Anglo-Saxon.
As. Arsenic.
Asst. Assistant.
A. S. S. U. American Sunday School Union.
Assyr. Assyrian.
Astrol. Astrology.
Astron. Astronomy, Astronomical.
A. T. S. American Tract Society.
Atty. Attorney.
Atty. Gen. Attorney General.
Au. (Lat. *aurum*), Gold.
A. U. A. American Unitarian Association.
A. U. C. (Lat. *anno urbis conditae*), In the year from the building of the city—Rome.
Aug. Augmentative.
Aug. Augustus; August.
Auxil. Auxiliary.
A. V. Authorized Version.
A. V. Artillery Volunteers.
Avoir. Avoirdupois.

B. Bass (*Music*); Book; Boron.
B., Brit. British.
b. Born.
B. A. Bachelor of Arts. [*A. B.*]
Ba. Barium.
Bal. Balance.
Balt., Balto. Baltimore.
Bank. Banking.
Bap., Bapt. Baptist.
Bar. Barrel; Barometer.
Bart., Bt. Baronet.
Bat., Batt. Battalion.
bbl., bbls. Barrel, Barrels.
B. C. Before Christ.
B. Ch. (Lat. *baccalaureus chirurgiae*), Bachelor of Surgery.
B. C. L. (Lat. *baccalaureus civilis legis*), Bachelor of Civil Law.
B. D. (Lat. *baccalaureus divinitatis*), Bachelor of Divinity.
Bd. Bound.
Bdls. Bundles.
Bds. Bound in boards.
B. E. Bachelor of the Elements.
Beds. Bedfordshire.
Belg. Belgic, Belgian.
Ben., Benj. Benjamin.
Berks. Berkshire.
Bi. Bismuth.
Bib. Bible, Biblical.
Biog. Biography, Biographical.
Biol. Biology, Biological.
B. L., B. LL. (Lat. *baccalaureus legum*), Bachelor of Laws.
B. L. S. Bachelor of the Library of Science.
bls. Bales.
B. M. (Lat. *baccalaureus medicinae*), Bachelor of Medicine.
B. M., B. Mus. (Lat. *baccalaureus musicae*), Bachelor of Music.
B. O. Branch Office.
B. O. Bachelor of Oratory.
Bohem. Bohemian.
Bot. Botany, Botanical.
B. O. U. British Ornithologists' Union.
Bp. Bishop.
Br., Bro. Brother.
Bret. Bas-Breton, or Celtic of Brittany.
Brig. Brigade.
Brig. Gen. Brigadier General.
Brit. Britain, Britannia, British.
Bro. Bromine.
B. S. Bachelor of Surgery; Bachelor of Science.
B. Sc. (Lat. *baccalaureus scientiae*), Bachelor of Science.
B. S. L. Botanical Society, London.
Bt. Baronet.
bush. Bushel.
B. V. Blessed Virgin.
B. V. M. Blessed Virgin Mary.
bx., bxs. Box, Boxes.

C. Cent, Cents; Centigrade; Consul; Centime, Centimes; a hundred; Carbon.
C., Cap. (Lat. *caput*), Chapter.
Ca. Calcium.
C. A. Chartered Accountant.
Cal. California; Calendar.
Cam., Camb. Cambridge.
Cant. Canticle; Canterbury.
Cantab. (Lat. *Cantabrigiensis*), Of Cambridge.
Cantuar., Cant. (Mid. Lat. *Cantuaria*), Canterbury.
Cap. (Lat. *caput*), Capital; Chapter.
Caps. Capitals.
Capt. Captain.
Card. Cardinal.
Cath. Catholic.
Cb. Columbium (Niobium).
C. B. Companion of the Bath.
C. C. Catholic Clergyman, Catholic Curate.
c. c. Cubic centimeter.
Cd. Cadmium.
C. D. V. Carte-de-Visite.
Ce. Cerium.
C. E. Civil Engineer.
Cel. Celsius.
Celt. Celtic.
Cent. (*centum*), A hundred; Centigrade.
Cert., Certif. Certify; Certificate.
Cf. (Lat. *confer*), Compare.
C. ft. Cubic feet.
C. G. Coast Guard; Commissaty General; Consul General.
C. G. S. Centimeter-Gramme-Second.
C. H. Court House.
Ch. Church; Chapter.
Chal. Chaldron.
Chal., Chald. Chaldee, Chaldean, Chaldaic.
Chan. Chancellor.
Chap. Chapter.

Chas. Charles.
Chem. Chemistry, Chemical.
Ch. Hist. Church History.
Chin. Chinese.
Chr. Christ; Christian; Christopher.
Chron. Chronology, Chronological.
C. I. [Order of the] Crown of India.
Cic. Cicero.
C. I. E. Companion of the Order of the Indian Empire.
Cin. Cincinnati.
Cit. Citation; Citizen.
Civ. Civil.
C. J. Chief Justice.
cl. Centiliter.
Cl. Clergyman; Chlorin.
Class. Classical.
Clk. Clerk.
cm. Centimeter; *cm.*2 Square centimeter; *cm.*3 Cubic centimeter.
c. m. Cubic meter.
C. M. Certificated Master; Common meter.
C. M. (Lat. *chirurgiae magister*), Master in Surgery.
C. M. G. Companion of the Order of St. Michael and St. George.
Cml. Commercial.
c. mm. Cubic millimeter.
C. M. Z. S. Corresponding Member of the Zoölogical Society.
Co. Company; County; Cobalt.
C. O. D. Cash on delivery; Collect (payment) on delivery.
Cogn. Cognate.
Col. Colonel; Colonial; Colossians; Column.
Coll. College; Collector; Collection.
Colloq. Colloquial, Colloquialism, Colloquially.
Colo. Colorado.
Com. Commander; Commerce; Commissioner; Committee; Commodore; Common.
Comm. Commentary; Commerce.
Comp. Compare; Comparative; Compound, Compounded.
Compar. Comparative.
Compos. Composition.
Com. ver. Common Version.
Con. (Lat. *contra*), Against.
Conch., Conchol. Conchology.
Con. Cr. Contra Credit.
Cong. Congregation, Congregational, Congregationalist; Congress.
Conj. Conjunction; Conjugation.
Conn. Connecticut.
Con. Sect. Conic Section.
Contr. Contracted, Contraction.
Cop., Copt. Coptic.
Cor. Corinthians.
Cor. Mem. Corresponding Member.
Corn. Cornwall; Cornish.
Corrup. Corruption, Corrupted.
Cor. Sec. Corresponding Secretary.
Cos. Cosine.
C. P. Clerk of the Peace; Common Pleas.
C. P. A. Certified Public Accountant.
C. P. C. Clerk of the Privy Council.
C. P. S. (Lat. *custos privati sigilli*), Keeper of the Privy Seal.
Cr. Credit, Creditor; Chromium.
C. R. (Lat. *Civis Romanus*), Roman Citizen.
C. R. (Lat. *custos rotulorum*), Keeper of the Rolls.
Cres. Crescendo.
Crim. con. Criminal conversation, or adultery.
Crystall., Crystallog. Crystallography.
Cs. Caesium.
C. S. A. Confederate States of America.
C. S. Court of Sessions; Clerk to the Signet; Civil Service.
C. S. I. Companion of the Star of India.
Csk. Cask.
Ct. (Lat. *centum*), A hundred
Ct. Court
Ct. Conn. Connecticut.
C. T. Certified Teacher.
C. T. A. U. Catholic Total Abstinence Union.
Cu. (Lat. *cuprum*), Copper.
Cub., Cu. ft. Cubic, Cubic foot.
cu. cm. Cubic centimeter.
cu. dm. Cubic decimeter.
cum d. (Lat. *cum dividendo*), With dividend.
Cur., Curt. Current—this month.
Cwt. A hundredweight; Hundredweights.
Cyc. Cyclopaedia.

D. Deputy.
d. (Lat. *denarius, denarii*), A penny, Pence.
d. Died.
Dan. Daniel; Danish.
Dat. Dative.
Dav. David.
D. C. (Ital. *da capo*), From the beginning.
D. C., Dist. Col. District of Columbia.
D. C. L. Doctor of Civil (or Canon) Law.
D. D. (Lat. *divinitatis doctor*), Doctor of Divinity.
D. D. D. (Lat. *dat, dicat, dedicat*), He gives, devotes, and consecrates; the formula by which gifts were consecrated to the gods of Rome. Also (Lat. *dono dedit dedicavit*), He gave and consecrated as a gift.
D. D. S. Doctor of Dental Surgery.
D. E. Dynamic Engineer.
D. Eng. Doctor of Engineering.
Dec. December.
decim. Decimeter.
Def. Definition.
Deft. Defendant.
Deg. Degree, Degrees.
Del. Delaware.
del. (Lat. *delineavit*), He (or she) drew.
Dep., Dept. Department.
Dep. Deputy.
Der. Derived, Derivation.
Deut. Deuteronomy.
D. F. Dean of the Faculty; Defender of the Faith.
dg. Decigram.
Dg. Dekagram.
D. G. (Lat. *Dei gratia*), By the grace of God.
Dict. Dictionary.
Dim., Dimin. Diminutive.
Dis., Disct. Discount.
Dist. District.
Dist. Atty. District Attorney.
Div. Divide; Dividend; Division; Divisor.
dl. Deciliter.
Dl. Dekaliter.
D. Lit., D. Litt. Doctor of Literature.
D. L. O. Dead Letter Office.
dm. Decimeter; *dm.*2 Square decimeter; *dm.*3 Cubic decimeter.
Dm. Dekameter; *Dm.*2 Square dekameter; *Dm.*3 Cubic dekameter.
D. M., D. Mus. Doctor of Music.
D. M. D. Doctor of Dental Medicine.
D. O. Doctor of Osteopathy.
Do. (Ital. *ditto*), The same.
Doc. Document.
Dols. Dollars.
Dom. Econ. Domestic Economy.
Doz. Dozen.
Dpt. Deponent.
Dr. Debtor; Doctor; Dram, Drams.
Dram. Dramatic, Dramatically.
D. S. (Ital. *dal segno*), From the sign.
D. Sc. Doctor of Science.
dst. Decister.
Dst. Dekaster.
D. T. (Lat. *doctor theologiae*), Doctor of Theology.
Du., Dut. Dutch.
Dub. Dublin.
Duo. 12*mo.* Duodecimo (twelve folds)
D. V. (Lat. *Deo volente*), God willing
D. V. M. Doctor of Veterinary Medicine.
D. V. S. Doctor of Veterinary Surgery.
Dwt. (Lat. *denarius*, and English *weight*), Pennyweight, Pennyweights.
Dynam. Dynamics.

E. East, Eastern; English; Edinburgh; Erbium.
Ea. Each.
E. Aram. East Aramaean, generally called Chaldee.
Eben. Ebenezer.
E. C. Eastern Central; Established Church.
Eccl., Eccles. Ecclesiastical.
Eccles., Ecclesiol. Ecclesiology.
Econ. Economy.
Ed. Editor; Edition; Edinburgh.
Ed., Edm. Edmund.
Edin. Edinburgh.
E. D. S. English Dialect Society.
Edw. Edward.
E. E. Errors excepted.
E. E. Electrical Engineer.
e. g. (Lat. *exempli gratia*), For example.
E. I. East Indies, East Indian.
E. I. C., E. I. Co. East India Company.
E. I. C. S. East India Company's Service.
Elec., Elect. Electric, Electricity.
Eliz. Elizabeth, Elizabethan.
Emp. Emperor, Empress.
Ency., Encyclo. Encyclopaedia.
E. N. E. East-north-east.
Eng. England, English.
Eng., Engin. Engineer, Engineering.
Eng. Dept. Department of Engineers.
Ent., Entom. Entomology, Entomological.
Env., Ext. Envoy Extraordinary.
Eph. Ephesians; Ephraim.
Epiph. Epiphany.
Epis. Episcopal.
Epist. Epistle, Epistolary.
Eq. Equal, Equivalent.
Equiv. Equivalent.
Esd. Esdras.
E. S. E. East-south-east.
Esp., Espec. Especial, Especially.
Esq., Esqr. Esquire.
et al. (Lat. *et alibi*), And elsewhere.
et al. (Lat. *et alii, aliae,* or *alia*), And others.
etc., &c. (Lat. *et caeteri, caeterae,* or *caetera*), And others, and so forth.
Eth. Ethiopia, Ethiopian.
Ethnol. Ethnology, Ethnological.
et seq. (Lat. *et sequentes,* or *sequentia*), And the following.
Etym. Etymology.
Ex. Example; Examined; Exception; Exodus.
Exc. Excellency; Except, Excepted.
Exch. Exchange; Exchequer.
Exd. Examined.
Ex. Doc. Executive Document.
Exec. Executor.
Execx. Executrix.
Ex. Gr. (Lat. *exempli gratia*), For example.
Exod. Exodus.
Exon. (Lat. *Exonia*), Exeter.
Exr. Executor.
Ez. Ezra.
Ezek. Ezekiel.
E. & O. E. Errors and omissions excepted.

F. Fellow; Folio; Fahrenheit; Fluorin.
f. Farthing, Farthings.
f., fem. Feminine.
f. Franc, Francs.
ft. Foot, Feet.
Fahr. Fahrenheit.
F. A. S. Fellow of the Society of Arts
F. & A. M. Free and Accepted Masons.

F. A. S. E. Fellow of the Antiquarian Society, Edinburgh.
F. B. S. E. Fellow of the Botanical Society of Edinburgh.
Fe. (Lat. *ferrum*), Iron.
F. C. Free Church [of Scotland].
Fcp. Foolscap.
F. C. P. S. Fellow of the Philosophical Society, Cambridge.
F. C. S. Fellow of the Chemical Society.
F. D., Fid. Def. (Lat. *Fidei Defensor*), Defender of the Faith.
Feb. February.
Fec. (Lat. *fecit*), He or she did it.
F. E. I. S. Fellow of the Educational Institute of Scotland.
Fem. Feminine.
F. E. S. Fellow of the Entomological Society; Fellow of the Ethnological Society.
Feud. Feudal.
F. F. V. First Families of Virginia.
F. G. S. Fellow of the Geological Society.
F. I. A. Fellow of the Institute of Actuaries.
F. I. C. Fellow of the Chemical Institute.
fi. fa. Fieri facias.
Fig. Figure, Figures, Figurative, Figuratively.
Finn. Finnish.
F. K. Q. C. P. I. Fellow of the King's and Queen's College of Physicians, Ireland.
Fl. Flemish; Florin, Florins; Flourished.
Fla. Florida.
Flem. Flemish.
F. L. S. Fellow of the Linnaean Society.
F. M. Field Marshal.
Fo., Fol. Folio.
F. O. Foreign Office; Field Officer.
F. O. B. Free on board.
For. Foreign.
Fort. Fortification.
F. P. Fire Plug.
F. P. S. Fellow of the Philological Society.
Fr. France; French; Francis; Francs.
fr. From.
F. R. A. S. Fellow of the Royal Astronomical Society.
F. R. C. P. Fellow of the Royal College of Physicians.
F. R. C. P. E. Fellow of the Royal College of Physicians, Edinburgh.
F. R. C. S. Fellow of the Royal College of Surgeons.
F. R. C. S. E. Fellow of the Royal College of Surgeons, Edinburgh.
F. R. C. S. I. Fellow of the Royal College of Surgeons, Ireland.
Fred. Frederick.
Freq. Frequentative.
F. R. G. S. Fellow of the Royal Geographical Society.
F. R. H. S. Fellow of the Royal Horticultural Society.
F. R. Hist. S. Fellow of the Royal Historical Society.
Fri. Friday.
Fries. Friesland.
Fris. Frisian.
F. R. Met. S. Fellow of the Royal Meteorological Society.
F. R. M. S. Fellow of the Royal Microscopical Society.
F. R. S. Fellow of the Royal Society.
F. R. S. E. Fellow of the Royal Society, Edinburgh.
F. R. S. L. Fellow of the Royal Society of Literature.
F. R. S. S. Fellow of the Royal Statistical Society.
F. S. A. Fellow of the Society of Arts, or of Antiquaries.
F. S. A. Scot. Fellow of the Society of Antiquaries of Scotland.
Ft. Foot, Feet; Fort.
Fth. Fathom
Fur Furlong.
Fut. Future.

F. Z. S. Fellow of the Zoölogical Society.

G. Genitive; Guinea, Guineas; Gulf.
g., gm. Gram.
Ga. Georgia; Gallium.
G. A. General Assembly.
Gad. Gadhelic.
Gael. Gaelic.
Gal. Galatians.
Gal., Gall. Gallon, Gallons.
Galv. Galvanism, Galvanic.
G. A. R. Grand Army of the Republic.
G. B. Great Britain.
G. B. & I. Great Britain and Ireland.
Gd. Gadolinum.
Ge. Germanium.
G. C. B. Grand Cross of the Bath.
G. C. H. Grand Cross of the Guelphs of Hanover.
G. C. L. H. Grand Cross of the Legion of Honor.
G. C. M. G. Grand Cross of St. Michael and St. George.
G. C. S. I. Grand Commander of the Star of India.
G. D. Grand Duke, Grand Duchess.
Gen. General; Genesis; Genitive.
Gend. Gender.
Genit. Genitive.
Gent., Gentn. Gentleman, Gentlemen.
Geo. George.
Geog. Geography, Geographical.
Geol. Geology, Geological.
Geom. Geometry, Geometrical.
Ger., Germ. German, Germany.
Gi. Gill, Gills.
G. L. Grand Lodge.
Gl. Glucinum (Beryllium).
Gm. Gram.
G. M. Grand Master.
Go., Goth. Gothic.
G. O. M. Grand old man (applied to Gladstone).
Gov. Governor.
Gov. Gen. Governor General.
Govt. Government.
G. P. O. General Post Office.
Gr. Grain, Grains; Great; Greek; Gram; Gross.
Gram. Grammar, Grammatical.
Gro. Gross.
G. T. Good Templars; Grand Tyler.
Gtt. (Lat. *gutta, guttae*), Drop, Drops.
Gun. Gunnery.

H. Hour, Hours; Hydrogen.
Ha. Hektar.
Hab. Habakkuk.
Hag. Haggai.
Hants. Hampshire.
H. B. C. Hudson Bay Company.
H. B. M. His (or Her) Britannic Majesty.
H. C. Heralds' College; House of Commons.
H. C. M. His (or Her) Catholic Majesty.
He. Helium.
h. e. (Lat. *hoc est, hic est*), This or that is, here is.
Heb., Hebr. Hebrew, Hebrews.
Her. Heraldry, Heraldic.
Hf.-bd. Half-bound.
H. G. Horse Guards.
Hg. (Lat. *hydrargyrum*), Mercury; Hektogram.
H. H. His (or Her) Highness; His Holiness (the Pope).
Hhd. Hogshead, Hogsheads.
H. I. H. His (or Her) Imperial Highness.
Hind. Hindu, Hindustan, Hindustani.
Hist. History, Historical.
H. J., H. J. S. (Lat. *hic jacet, hic jacet sepultus*), Here lies, Here lies buried.
Hl. Hektoliter.
Hm. Hektometer; *Hm.²* Square hektometer
H. M. His (or Her) Majesty.
H. M. P. (Lat. *hoc monumentum posuit*), Erected this monument.
H. M. S. His (or Her) Majesty's Service, Ship, or Steamer.
Hon., Honble. Honorable.
Hond. Honored; Honduras.
Hor., Horol. Horology, Horological.
Hort., Hortic. Horticulture, Horticultural.
Hos. Hosea.
H. P. Half Pay; High Priest; Horse Power.
H. R. House of Representatives.
H. R. E. Holy Roman Empire, or Emperor.
H. R. H. His (or Her) Royal Highness.
H. R. I. P. (Lat. *hic requiescit in pace*), Here rests in peace.
H. S. (Lat. *hic situs*), Here lies.
H. S. H. His (or Her) Serene Highness.
H. T. Hawaii Territory.
Hum., Humb. Humble.
Hun., Hung. Hungary, Hungarian.
Hund. Hundred.
Hyd., Hydros. Hydrostatics.
Hydraul. Hydraulics.
Hydros. [Hyd.]
Hypoth. Hypothesis, Hypothetical.

I. Island; Iodine.
Ia. Iowa.
Ib., Ibid. (Lat. *ibidem*), In the same place.
Icel. Iceland, Icelandic.
Ich., Ichthy. Ichthyology.
Id. (Lat. *idem*), The same.
Ida. Idaho.
I. e. (Lat. *id est*), That is.
I. H. S. (Lat. *Iesus* [*Jesus*] *Hominum Salvator*), Jesus, the Saviour of Men.
Ill. Illinois.
Imp. (Lat. *imperator*), Emperor; Imperial; Impersonal.
Imp., Impf. Imperfect.
Imper. Imperative.
In. Inch, Inches.
Incog. (Ital. *incognito, incognita*), Unknown.
Ind. India, Indian; Indiana; Indium.
Indic. Indicative.
Ind. Ter. Indian Territory.
Inf., Infin. Infinitive.
In lim. (Lat. *in limine*), At the outset.
In loc. (Lat. *in loco*), In its place.
I. N. R. I. (Lat. *Iesus* [*Jesus*] *Nazarenus Rex Iudaeorum*), Jesus of Nazareth, King of the Jews.
Ins. Insurance.
Ins. Gen. Inspector General.
Inst. Instant, the present month; Institute, Institution.
Int. Interest.
Int. Dept. Department of the Interior.
Intens. Intensive; Intensative.
Interj. Interjection.
Intrans. Intransitive.
In trans. (Lat. *in transitu*), On the passage.
Int. Rev. Internal Revenue.
Introd. Introduction.
Io. Iowa.
I. O. F. Independent Order of Foresters.
I. O. G. T. Independent Order of Good Templars.
I. O. O. F. Independent Order of Odd Fellows.
I. O. R. M. Improved Order of Red Men.
I. O. S. M. Independent Order of Sons of Malta.
I. O. U. I owe you.
i. q. (Lat. *idem quod*), The same as.
Ir. Ireland, Irish; Iridium.
Irreg. Irregular.
Is., Isa. Isaiah.
I. S. Irish Society.
Isl. Island
I. S. M. Jesus Salvator Mundi
It., Ital Italy; Italic; Italian.
Itin. Itinerary.

J. Judge; Justice.
J. A. Judge Advocate.
Jac. Jacob, Jacobus (= James).
J. A. G. Judge Advocate General.
Jan. January.
Jap. Japan, Japanese.
Jas. James.
Jav. Javanese.
J. C. Jesus Christ.
J. C. D. (Lat. *juris civilis doctor*), Doctor of Civil Law.
J. D. (Lat. *jurum doctor*), Doctor of Laws.
Jer. Jeremiah.
J. G. W. Junior Grand Warden.
J. H. S. [*I. H. S.*].
Jno. John.
Jour. Journey.
Jon., Jona. Jonathan.
Jos. Joseph.
Josh. Joshua.
Jour. Journal.
J. P. Justice of the Peace.
Jr. Juror; Junior.
J. U. D. (Lat. *Juris utriusque doctor*), Doctor of both laws (*i. e.*, of civil and canon law).
Jud. Judith.
Judg. Judges.
Jul. July; Julius; Julian.
Jul. Per. Julian Period.
Jun. June.
Jun., Junr. Junior.
Juris. Jurisprudence.

K. King; Knight; (Lat. *kalium*), Potassium.
Kan., Kas., Ks. Kansas.
K. B. Knight of the Bath.
K. B. King's Bench.
K. C. King's Counsel.
K. C. B. Knight Commander of the Bath.
K. C. H. Knight Commander of the Order of Hanover.
K. C. M. G. Knight Commander of St. Michael and St. George.
K. C. S. I. Knight Commander of the Star of India.
K. E. Knight of the Eagle.
Ken., Ky. Kentucky.
Kg. Kilogram.
K. G. Knight of the Garter.
K. G. C. Knight of the Grand Cross.
K. G. C. B. Knight of the Grand Cross of the Bath.
K. G. E. Knight of the Golden Eagle.
K. G. F. Knight of the Golden Fleece.
K. G. H. Knight of the Guelphs of Hanover.
Ki. Kings.
Kilog. Kilogram.
Kilom., Kilo. Kilometer.
Kingd. Kingdom.
kl. Kiloliter.
K. L. B. Knight of Leopold of Belgium.
K. L. H. Knight of the Legion of Honor.
Km. Kilometer; *Km.*2 Square kilometer; *Km.*3 Cubic kilometer.
K. M. Knight of Malta.
Knick. Knickerbocker.
Knt. Knight.
K. of H. Knights of Honor.
K. of L. Knights of Labor.
K. of P. Knights of Pythias.
K. P. Knight of St. Patrick.
Kr. Krypton.
K. R. N. S. Knight of the Royal North Star (Sweden).
Ks. Kansas.
K. S. Knight of the Sword (Sweden).
Kt. Knight.
K. T. Knight of the Thistle; Knight Templar.
K. T. S. Knight of Tower and Sword (Portugal).
Ky. Kentucky.

L. Latin; Lake; Lord; Lady.
l. Liter.
L., l., £. (Lat. *libra*), Pound, Pounds (sterling).
L., lb., lb. (Lat. *libra*), Pound, Pounds (weight).
La. Louisiana; Lanthanum.
L. A. Law Agent; Literate in Arts.
Lam. Lamentations.
Lat. Latin; Latitude.
lb. Pound, Pounds (weight).
L. c. Lower case (in printing).
L. c., loc. cit. (Lat. *loco citato*), In the place cited.
L. C. Lord Chamberlain; Lord Chancellor.
L. C. J. Lord Chief Justice.
L. C. P. Licentiate of the College of Preceptors.
Ld. Lord.
Ldp. Lordship.
L. D. S. Licentiate of Dental Surgery.
Leg., Legis. Legislature, Legislative.
Leip. Leipzig.
Lev. Leviticus.
Lex. Lexicon.
Lexicog. Lexicography, Lexicographer, Lexicographical.
L. G. Life Guards.
L. Ger. Low German or Platt-Deutsch.
L. H. D. Doctor of Humanities.
Li. Lithium.
L. I. Light Infantry; Long Island.
Lib. (Lat. *liber*), Book.
Lib. Library, Librarian.
Lieut., Lt. Lieutenant.
Lieut. Col. Lieutenant Colonel.
Lieut. Gen. Lieutenant General.
Lieut. Gov. Lieutenant Governor.
lin. Lineal, or right-line measures; *e. g.*, lin. yd.; lin. ft., etc.
Linn. Linnaeus, Linné, Linnaean.
Liq. Liquor, Liquid.
Lit. Literally, Literature, Literary.
Lit. D., Litt. D. (Lat. *literarum doctor*), Doctor of Literature.
Lith. Lithography.
Liv. Livre.
LL. B. (Lat. *legum baccalaureus*), Bachelor of Laws.
LL. D. (Lat. *legum doctor*), Doctor of Laws.
LL. I. Lord Lieutenant of Ireland.
LL. M. Master of Laws.
L. M. Long Meter.
Lon., Lond. London.
Lon., Long. Longitude.
Loq. (Lat. *loquitur*), He (or she) speaks.
Lou. Louisiana.
Lp. Lordship.
L. P. Lord Provost.
L. S. (Lat. *locus sigilli*), Place of seal.
L. s. d. (Lat. *librae, solidi, denarii*), Pounds, shillings, pence.
Lt. Lieutenant.
Lt. Inf. Light Infantry.
Luth. Lutheran.

m. Meter; *m.*2 Square meter; *m.*3 Cubic meter.
m. Married; Masculine; Mile, Miles; Minute, Minutes.
M. Marquis; Middle; Monday; Morning; Monsieur.
M. (Lat. *mille*), Thousand.
M. (Lat. *meridies*), Meridian; Noon.
M. A. (Master of Arts.) [*A. M.*]
Mac., Macc. Maccabees.
Mach., Machin. Machine, Machinery.
Mad., Madm. Madam.
Mag. Magyar; Magazine.
Maj. Major.
Maj. Gen. Major General.
Mal. Malachi; Malay, Malayan.
Manuf. Manufactures, Manufacturing.
Mar. March; Maritime.
Marq. Marquis.
Mas., Masc. Masculine.
Mass. Massachusetts.
M. Ast. S. Member of the Astronomical Society.
Math. Mathematics, Mathematician, Mathematical.
Matt. Matthew.
M. B. (Lat. *medicinae baccalaureus*), Bachelor of Medicine.
M. B. (Lat. *musicae baccalaureus*), Bachelor of Music.
M. C. Member of Congress; Master of Ceremonies.
Mch. March.
M. C. P. Member of the College of Preceptors.
M. D. (Lat. *medicinae doctor*), Doctor of Medicine.
Md. Maryland.
Mdlle. (Fr. *mademoiselle*), Miss.
Mdse. Merchandise.
M. E. Most Excellent; Military Engineer; Mining Engineer; Mechanical Engineer.
M. E. Methodist Episcopal.
Me. Maine.
Meas. Measure.
Mech. Mechanics, Mechanical.
Med. Medicine, Medical; Mediaeval.
Med. Lat., Mediaev. Lat. Mediaeval Latin.
Mem. Memorandum, Memoranda.
Mess. & Docs. Messages and Documents.
Messrs. (Fr. *messieurs*), Gentlemen.
Met. Metaphysics, Metaphysical.
Metal. Metallurgy.
Metaph. Metaphysics; Metaphorically.
Meteor. Meteorology, Meteorological.
Meth. Methodist.
Meton. Metonymy.
Mex. Mexico.
Mfd., Mfs. Manufactured, Manufactures.
Mfg. Manufacturing.
M. F. H. Master of Foxhounds.
mg. Milligram.
Mg. Magnesium; Myriagram.
M. H. Most Honorable.
M. H. Ger. Middle High German.
Mic. Micah.
M. I. C. E. Member of the Institute of Civil Engineers.
Mich. Michigan; Michaelmas.
Mid. Middle; Midshipman.
Mid. Lat. Latin of the Middle Ages.
Mil., Milit. Military.
M. I. M. E. Member of the Institute of Mining Engineers.
Min. Mineralogy, Mineralogical; Minute, Minutes.
Minn. Minnesota.
Min. Plen. Minister Plenipotentiary.
Miss. Mississippi.
ml. Milliliter.
Ml. Myrialiter.
Mlle. (Fr. *mademoiselle*), Miss.
M. L. S. B. Member of the London School Board.
mm. Millimeter; *mm.*2 Square millimeter; *mm.*3 Cubic millimeter.
Mm. Myriameter.
MM. Their Majesties.
MM. (Fr. *messieurs*), Gentlemen.
Mme. (Fr. *madame*), Madam.
Mn. Manganese.
M. N. A. S. Member of the National Academy of Sciences.
M. N. S. Member of the Numismatical Society.
Mo. Missouri; Month; Molybdenum.
Mod. Modern.
Mod. (Ital. *moderato*), Moderately.
Mon. Monday.
Mons. (Fr. *monsieur*), Sir, Mister.
Mont. Montana.
M. P. Member of Parliament.
M. P. P. Member of Provincial Parliament.
M. P. S. Member of the Pharmaceutical Society; Member of the Philological Society.
Mr. Master, Mister.
M. R. A. S. Member of the Royal Asiatic Society.
M. R. C. P. Member of the Royal College of Physicians.
M. R. C. S. Member of the Royal College of Surgeons.
M. R. C. V. S. Member of the Royal College of Veterinary Surgeons.
M. R. G. S. Member of the Royal Geographical Society.

M. R. I. Member of the Royal Institution.
M. R. I. A. Member of the Royal Irish Academy.
Mrs. Mistress.
M. R. S. L. Member of the Royal Society of Literature.
M. S. Master of Surgery.
M. S. Master of Science.
M. S. (Lat. *memoriae sacrum*), Sacred to the memory of.
MS. Manuscript.
MSS. Manuscripts.
mo., mth. Month.
Mt., Mts. Mount, Mountains.
Mus. Museum; Music, Musical.
Mus. B. (Lat. *musicae baccalaureus*), Bachelor of Music.
Mus. D., Mus. Doc., Mus. Doct. (Lat. *musicae doctor*), Doctor of Music.
M. W. G. M. Most Worthy Grand Master.
Myth. Mythology, Mythological.

N. Noon; North; Noun; Number; New; Neuter; Nitrogen.
Na. (Lat. *natrium*), Sodium.
N. A. North America, North American.
Nah. Nahum.
Nap. Napoleon.
Nat. Natural; National.
Nat. Hist. Natural History.
Nat. Ord. Natural Order.
Nat. Phil. Natural Philosophy.
Naut. Nautical.
N. B. New Brunswick; North Britain (=Scotland).
N. B. (Lat. *nota bene*), Note well, take notice.
N. C. North Carolina.
Nd. Neodymium.
N. D., N. Dak. North Dakota.
Ne. Neon.
N. E. New England; Northeast.
Neb. Nebraska.
Neg. Negative, Negatively.
Neh. Nehemiah.
Nem. con. (Lat. *nemine contradicente*), No one contradicting; unanimously.
Nem. diss. (Lat. *nemine dissentiente*), No one dissenting; unanimously.
Neth. Netherlands.
Neut. Neuter.
Nev. Nevada.
New Test., N. T. New Testament.
N. F. Newfoundland.
N. H. New Hampshire.
N. H. Ger. New High German.
Ni. Nickel.
N. J. New Jersey.
N. L., N. Lat. North Latitude.
N. M. New Mexico.
N. N. E. North-north-east.
N. N. W. North-north-west.
N. O. New Orleans.
No. (Lat. *numero*), Number.
nol. pros. (Lat. *nolle prosequi*), Unwilling to prosecute.
Nom., Nomin. Nominative.
Non con. Non-content, dissentient. (The formula by which Members of the House of Lords vote negatively.)
Non obst. (Lat. *non obstante*), Notwithstanding.
Non pros. (Lat. *non prosequitur*), He does not prosecute.
Non seq. (Lat. *non sequitur*), It does not follow (as a consequence).
n. o. p. Not otherwise provided for.
Nor., Norm. Norman.
Nor. Fr., Norm. Fr. Norman French.
Norm. [NOR.].
Norw. Norway, Norwegian, Norse.
Nos. Numbers.
Nov. November.
N. P. Notary Public.
N. S. New style; Nova Scotia.
n. s. Not specified.
N. S. J. C. (Fr. *Notre Seigneur Jesus Christ*), Our Lord Jesus Christ.
N. T. [NEW TEST.]
Num., Numb. Numbers.
Numis. Numismatic, Numismatology.
N. V. M. Nativity of the Virgin Mary.
N. W. Northwest.
N. W. T. Northwest Territory.
N. Y. New York.
N. Z. New Zealand.

O. Ohio; Old; Oxygen.
ob. (Lat. *obiit*), He (or she) died.
Obad. Obadiah.
Obdt., Obt. Obedient.
Obj. Objective.
Obs. Obsolete.
Oct. October.
Oct., 8vo. Octavo.
O. F. Odd Fellows.
O. H. G. Old High German.
O. H. M. S. On Her Majesty's Service.
O. K. "All correct."
Okl. Oklahoma.
Old. Test., O. T. Old Testament.
Olym. Olympiad.
O. M. Old Measurement.
O. M. I. Oblate of Mary Immaculate.
Op. Opposite, Opposition.
Opt. Optative; Optics, Optical.
Or. Oregon; Oriental.
Ordn. Ordnance.
Orig. Original, Originally.
Ornith. Ornithology, Ornithological.
Os. Osmium.
O. S. Old Style; Old Saxon.
O. S. A. Order of St. Augustine.
O. S. B. Order of St. Benedict.
O. S. F. Order of St. Francis.
O. T. [OLD TEST.].
O. U. A. M. Order of United American Mechanics.
Oxf. Oxford.
Oxon. (Lat. *Oxonia, Oxoniensis*), Oxford; Of Oxford.
Oxonien. (Lat. *Oxoniensis*), Of Oxford.
Oz. Ounce. [The *z* in this contraction and in *viz.* represents an old symbol (ȝ), used to mark a terminal contraction.]

P. Page; Participle; Past; Pole; Port; Phosphorus.
Pa. Pennsylvania.
P. a. Participial adjective.
Paint. Painting.
Pal., Palaeont. Palaeontology, Palaeontological.
Palaeobo. Palaeobotany.
Pa. part. Past participle.
Par. Paragraph; Participle.
Parl. Parliament, Parliamentary.
Part. Participle.
Part. adj. Participial adjective.
Particip. Participial.
Pass. Passive.
Pat. Patrick.
Pathol. Pathological.
Payt. Payment.
Pb. (Lat. *plumbum*), Lead.
P. C. (Lat. *patres conscripti*), Conscript Fathers.
P. C. Police Constable; Privy Council; Privy Councilor.
P. C. S. Principal Clerk of Session.
Pd. Paid; Palladium.
Pd. D. Doctor of Pedagogy.
P. E. Protestant Episcopal.
P. E. I. Prince Edward Island.
Penn. Pennsylvania.
Pent. Pentecost.
Per., Pers. Persian; Person, Personal.
Per an. (Lat. *per annum*), Yearly.
Per cent., Per ct. (Lat. *per centum*), By the hundred.
Perf. Perfect.
Peri. Perigee.
Pers., Persp. Perspective.
Peruv. Peruvian.
Pet. Peter.
P. G. M. Past Grand Master.
Phar., Pharm. Pharmacy.
Ph. B. (Lat. *philosophiae baccalaureus*), Bachelor of Philosophy.
Ph. D. (Lat. *philosophiae doctor*), Doctor of Philosophy.
Phil. Philip; Philippians; Philosophy, Philosophical.
Phil., Phila. Philadelphia.
Philem. Philemon.
Philol. Philology, Philologist, Philological.
Philom. (*Philomathes*). Lover of learning.
Philomath. (*Philomathematicus*). Lover of mathematics.
Philos. Philosophy, Philosophical.
Phil. Soc., Ph. S. Philological Society.
Phil. Trans. Transactions of the Philosophical Society.
Ph. M. Master of Philosophy.
Phen., Phenic. Phenician.
Photog. Photography, Photographic, Photographer.
Phren., Phrenol. Phrenology, Phrenological.
Phys. Physics, Physical; Physiology, Physiological.
Physiol. Physiology, Physiological.
Pinx., Pxt. (Lat. *pinxit*), He (or she) painted it.
Pk. Peck.
Pl. Place; Plate; Plural.
P. L. Poet Laureate.
Plff., Pltff. Plaintiff.
Plu. Plural.
Plup. Pluperfect.
Plur. Plural.
P. M. (Lat. *post meridiem*), Afternoon.
P. M. Past Master; Peculiar Meter; Postmaster.
P. M. G. Postmaster General.
P. O. Post Office.
P. & O. Co. Peninsular and Oriental Steam Navigation Company.
Poet. Poetry, Poetical.
Pol. Polish.
Polit. Econ. Political Economy.
P. O. O. Post Office Order.
Pop. Population.
Port. Portugal, Portuguese.
Poss. Possessive.
Pp. Pages.
P. p. Past participle.
P. P. (Lat. *pater patriae*), Father of his country.
P. P. Parish Priest.
P. P. C. (Fr. *pour prendre congé*), To take leave. [T. T. L.]
Pph. Pamphlet.
P. pr. Present participle.
Pr. Present; Priest; Prince; Praseodymium.
P. R. (Lat. *Populus Romanus*), The Roman people.
P. R. Prize Ring.
P. R. A. President of the Royal Academy.
P. R. C. (Lat. *post Romam conditam*), After the building of Rome. [A. U. C.]
Preb. Prebend.
Pref. Prefix; Preface.
Prep. Preposition.
Pres. President; Present.
Pret. Preterite.
Prim. Primary.
Prin. Principal.
Print. Printing.
Priv. Privative.
Prob. Problem; Probable, Probably.
Prof. Professor.
Pron., Pro. Pronoun; Pronounced; Pronunciation.
Pron. a. Pronominal adjective.
Prop. Proposition.
Pros. Prosody.
Pro tem. (Lat. *pro tempore*), For the time being.
Prov. Proverbs, Proverbial, Proverbially; Provincial, Provincially; Provost.
Provinc. Provincial.
Prox. (Lat. *proximo*), Next; or of next month.
Prs. Pairs.
P. R. S. President of the Royal Society.

P. R. S. A. President of the Royal Scottish Academy.
Prus. Prussia, Prussian.
P. S. (Lat. *post scriptum*), Post script.
P. S. Privy Seal.
Ps., Psa. Psalm, Psalms.
Psychol. Psychology.
Pt. Part; Payment; Point; Port; Platinum.
P. T. Post Town; Pupil Teacher.
Pub. Public; Published, Publisher
Pub. Doc. Public Documents.
P. V. Post Village.
Pwt. Pennyweight.
Pxt. [PINX.]
Pyro., Pyrotech. Pyrotechnics.

Q., Qu. Query; Question.
Q. C. Queen's College.
Q. d. (Lat. *quasi dicat*), As if he should say.
Q. e. (Lat. *quod est*), Which is.
Q. E. D. (Lat. *quod erat demonstrandum*), Which was to be proved.
Q. E. F. (Lat. *quod erat faciendum*), Which was to be done.
Q. E. I. (Lat. *quod erat inveniendum*), Which was to be found out.
Q. l. (Lat. *quantum libet*), As much as you please.
Q. M. Quartermaster.
Q. M. G. Quartermaster General.
Qr. Quarterly; Quire.
Q. S. Quarter Sessions.
Q. s. (Lat. *quantum sufficit*), A sufficient quantity.
Qt. Quart.
Qu. Queen; Query; Question.
Quar., Quart. Quarterly.
Quar., 4to. Quarto.
Ques. Question.
Q. v. (Lat. *quod vide*), Which see.
Qy. Query.

R. Railway; Réaumur; River.
R. (Lat. *rex*), King; (Lat. *regina*), Queen.
R. (Lat. *recipe*), Take.
Ra. Radium.
R. A. Royal Academy, Royal Academician; Rear Admiral; Royal Arch; Royal Artillery.
Rabb. Rabbinical.
Rad. (Lat. *radix*), Root.
R. A. M. Royal Academy of Music.
R. A. S. Royal Agricultural Society
Rb. Rubidium.
R. C. Roman Catholic.
R. D. Rural Dean.
R. E. Royal Engineers; Royal Exchange.
R. E. Reformed Episcopal.
Réaum. Réaumur.
Rec. Recipe.
Recd. Received.
Recpt. Receipt.
Ref. Reference.
Ref. Ch. Reformed Church.
Ref. Pres. Reformed Presbyterian.
Reg. Regular.
Reg., Regr. Registrar.
Reg., Regt. Regiment, Regimental.
Rel. Religion, Religious.
Rel. Pron. Relative Pronoun.
Rem. Remark, Remarks.
Rep. Report; Representative.
Rep., Repub. Republic, Republican.
Res. Resolution.
Retd. Returned.
Rev. Revelation; Revenues; Reverend; Review; Revise.
Revd. Reverend.
Revs. Reverends.
Rev. Stat. Revised Statutes.
Rh. Rhodium.
R. H. A. Royal Horse Artillery.
Rhet. Rhetoric, Rhetorical
R. H. S. Royal Humane Society.
R. I. Rhode Island
R. I. P. (Lat. *requiescat in pace*) May he (or she) rest in peace
Riv. River.
R. M. Royal Mail; Royal Marines.
R. M. A. Royal Marine Artillery; Royal Military Asylum.
R. M. L. I. Royal Marine Light Infantry.
R. M. S. Royal Mail Steamer; Royal Mail Service.
R. N. Royal Navy.
R. N. R. Royal Naval Reserve.
R. O. Receiving Office.
Robt. Robert.
Rom. Roman, Romans.
Rom. Cath. Roman Catholic.
R. P. Regius Professor.
R. R. Right Reverend.
R. R. Railroad.
R. S. A. Royal Scottish Academy.
R. S. E. Royal Society of Edinburgh.
R. S. L. Royal Society of London.
R. S. P. C. A. Royal Society for the Prevention of Cruelty to Animals.
R. S. V. P. (Fr. *Répondez s'il vous plait*), Please reply.
Rt. Right.
Rt. Hon. Right Honorable.
Rt. Rev. Right Reverend.
R. T. S. Religious Tract Society.
Rt. Wpful. Right Worshipful.
Ru. Ruthenium.
Russ. Russia, Russian.
R. V. Revised Version; Rifle Volunteers.
R. W. Right Worshipful; Right Worthy.
R. W. D. G. M. Right Worshipful Deputy Grand Master.
R. W. G. M. Right Worshipful Grand Master.
R. W. G. R. Right Worthy Grand Representative.
R. W. G. S. Right Worthy Grand Secretary.
R. W. G. T. Right Worthy Grand Treasurer; Right Worthy Grand Templar.
R. W. G. W. Right Worshipful Grand Warden.
R. W. J. G. W. Right Worshipful Junior Grand Warden.
R. W. S. G. W. Right Worshipful Senior Grand Warden.
Ry. Railway.

S. Saint; Saturday; Section; Shilling; Sign; Signor; Solo; Soprano; South; Sun; Sunday; Sabbath; Sulphur.
s. Second, Seconds; See; Singular; Son; Succeeded.
S. A. South Africa; South America.
s. a. (Lat. *secundem artem*), According to the rules of art; (Lat. *sine anno*), Without date.
Sab. Sabbath.
Sam., Saml. Samuel.
Sam., Samar. Samaritan.
Sans., Sansc., Sansk. Sanscrit, Sanskrit.
S. A. S. (Lat. *Societatis Antiquariorum Socius*), Fellow of the Society of Antiquaries.
Sat. Saturday.
Sax. Saxon, Saxony.
Sb. (Lat. *stibium*), Antimony.
S. B. South Britain (England and Wales). [N. B.]
S. C. South Carolina.
S. C. (Lat. *senatus consultum*), A decree of the senate.
Sc. [SCIL., SCULP.]; Scandium.
Scan. mag. (Lat. *scandalum magnatum*), Defamatory expressions to the injury of persons of high office or dignity.
S. caps. or *s. c.* Small capitals. (In printing.)
Sc. B. (Lat. *scientiae baccalaureus*), Bachelor of Science.
Sc. D. (Lat. *scientiae doctor*), Doctor of Science.
Sch. (Lat. *scholium*), A note; Schooner.
Sci. Science
Sci. fa. *Scire facias.*
Scil. Sc. (Lat. *scilicet*), Namely; to wit.
S. C. L. Student in Civil Law.
Sclav. Sclavonic.
Scot. Scotland, Scotch, Scottish.
Scr. Scruple, Scruples.
Scrip., Script. Scripture, Scriptural.
Sculp. Sculpture.
Sculp., Sculpt., Sc. (Lat. *sculpsit*), He (or she) engraved it.
s. d. (*sine dividendo*). Without dividend.
S. D. Doctor of Science.
S. D., S. Dak. South Dakota.
S. D. U. K. Society for the Diffusion of Useful Knowledge.
Se. Selenium.
S. E. Southeast.
Sec. Second.
Sec., Sect. Section.
Sec., Secy. Secretary.
Sec. Leg. Secretary of Legation.
Sen. Senate, Senator.
Sen. Doc. Senate Document.
Sep., Sept. September.
Seq. (Lat. *sequentes, sequentia*), The following or the next.
Serg., Sergt. Sergeant.
Serg. Maj. Sergeant Major.
Serj., Serjt. Serjeant.
Serv. Servian.
Sess. Session.
S. G. Solicitor General.
s. g. [SP. GR.]
Sh. Shilling, Shillings.
Si. Silicon.
Sing. Singular.
S. J. Society of Jesus.
S. J. C. Supreme Judicial Court.
Skr. Sanskrit.
Slav. Slavonic.
Sld. Sailed.
Sm. Samarium.
S. M. Sergeant Major.
S. M. Lond. Soc. (Lat. *Societatis Medicae Londiniensis Socius*), Member of the London Medical Society.
Sn. (Lat. *stannum*), Tin.
S. N. (Lat. *secundum naturam*), According to nature, naturally.
Soc., Socy. Society.
S. of Sol. Song of Solomon.
Sol. Gen. Solicitor General.
Sp. Spain, Spanish; Spirit.
s. p. (Lat. *sine prole*), Without issue.
S. P. C. A. Society for the Prevention of Cruelty to Animals.
S. P. C. C. Society for the Prevention of Cruelty to Children.
S. P. C. K. Society for the Promotion of Christian Knowledge.
Spec. Special, Specially.
S. P. G. Society for the Propagation of the Gospel.
sp. gr., s. g. Specific gravity.
S. P. Q. R. (Lat. *Senatus Populusque Romanus*), The Senate and the People of Rome.
s. p. s. (Lat. *sine prole superstite*), Without surviving issue.
sq., Square; *sq. ft.*, Square foot, feet; *sq. in.*, Square inch, inches; *sq. m.*, Square mile, miles; *sq. yd.*, Square yard; *sq. rd.*, Square rod; *sq. cm.*, Square centimeter; *sq. dm.*, Square decimeter; *sq. Dm.*, Square dekameter; *sq. Hm.*, Square hektometer; *sq. Km.*, Square kilometer.
Sr. Senior; Sir; Strontium.
S. R. I. (Lat. *Sacrum Romanum Imperium*), The Holy Roman Empire.
S. R. S. (Lat. *Societatis Regiae Socius*), Fellow of the Royal Society.
SS. Saints.
S. S. Sunday School.
S. S. C. Solicitor before the Supreme Court.
S. S. E. South-south east.
S. S. W. South-south-west.
St. Saint; Stone; Strait; Street.
st. Ster (metric).
st. (Lat. *stet*), Let it stand (in printing).

Stat. Statute, Statutes; Statuary.
S. T. Sons of Temperance.
S. T. B. Bachelor of Sacred Theology.
S. T. D. (Lat. *sacrae theologiae doctor*), Doctor of Divinity.
ster., stg. Sterling.
St. L. St. Louis.
S. T. P. (Lat. *sacrae theologiae professor*), Professor of Theology.
Str. Steamer.
Subj. Subjunctive.
Subst. Substantive; Substitute.
Suff. Suffix.
Sun., Sund. Sunday.
Sup. Superior; Superlative; Supplement; Supine.
Supp. Supplement.
Supt. Superintendent.
Surg. Surgeon, Surgery.
Surg. Gen. Surgeon General.
Surv. Surveying, Surveyor.
Surv. Gen. Surveyor General.
S. v. (Lat. *sub verbo* or *voce*), Under the word or title.
S. W. Senior Warden; Southwest.
Sw. Sweden, Swedish.
Switz. Switzerland.
Syn. Synonym, Synonymous.
Synop. Synopsis.
Syr. Syria, Syriac; Syrup.

T. Tonneau or ton (metric).
T. Tenor; Ton; Tun; Tuesday.
Ta. Tantalum.
T. A. B. Total Abstinence Brotherhood.
Tab. Table; Tabular statement.
Tan. Tangent.
Tart. Tartaric.
Tb. Terbium.
Te. Tellurium.
Tech. Technical, Technically.
Tenn. Tennessee.
Ter. Territory.
Term. Termination.
Teut. Teutonic.
Tex. Texas.
Text. rec. (Lat. *textus receptus*), The received text.
Th. Thomas; Thursday; Thorium.
Theo. Theodore.
Theol. Theology.
Theor. Theorem.
Thess. Thessalonians.
Tho., Thos. Thomas.
Thu., Thur., Thurs. Thursday.
Ti. Titanium.
Tier. Tierce.
Tim. Timothy.
Tit. Title; Titus.
Tl. Thallium.
Tm. Thulium.
T. O. Turn Over.
Tob. Tobit.
Tom. Tome, volume.
Tonn. Tonnage.
Topog. Topography, Topographical.
Tp. Township.
Tr. Translation, Translator, Translated; Transpose; Treasurer; Trustee.
Trans. Transaction; Translation, Translator, Translated.
Trav. Travels.
Treas. Treasurer.
Trig., Trigon. Trigonometry, Trigonometrical.
Trin. Trinity.
T. T. L. To Take Leave. [F. P. C.]
Tu., Tues. Tuesday.
Turk. Turkey, Turkish.
Typ. Typographer.
Typog. Typography, Typographical.

U. Uranium.
U. C. (Lat. *urbis conditae*), From the building of the city—Rome [A. U. C.]; Upper Canada.
U. J. D. [J. U. D.]
U. K. United Kingdom.
U. K. A. Ulster King at Arms; United Kingdom Alliance.
Ult. (Lat. *ultimo*), Last, of the last month.
um. Unmarried.
Unit. Unitarian.
Univ. University.
Up. Upper.
U. P. United Presbyterian.
U. S. United States.
u. s. (Lat. *ut supra*), As above.
U. S. A. United States of America; United States Army.
U. S. L. United States Legation.
U. S. M. United States Mail; United States Marine.
U. S. M. A. United States Military Academy.
U. S. N. United States Navy.
U. S. N. A. United States Naval Academy.
U. S. S. United States Senate; United States Ship or Steamer.
U. S. S. Ct. United States Supreme Court.
Usu. Usual, Usually.
U. S. V. United States Volunteers.
Ut. Utah.

V. Verb; Verse; Victoria; Violin; Vanadium.
V. (Lat. *versus*), Against.
V. (Lat. *vide*), See.
V. A. Vicar Apostolic; Vice Admiral.
Va. Virginia.
Val. Valve; Value.
Var. Variety.
Vat. Vatican.
v. aux. Verb auxiliary.
V. C. Vice Chancellor; Victoria Cross.
v. def. Verb defective.
V. D. M. (Lat. *Verbum Dei Minister*), Minister of the Word of God.
Ven. Venerable.
V. G. Vicar General.
v. g. (Lat. *verbi gratia*), For example.
v. i. Verb intransitive.
Vice-pres. Vice-president.
vid. (Lat. *vide*), See.
v. imp. Verb impersonal.
v. irr. Verb irregular.
Vis., Visc. Viscount.
viz. (Lat. *videlicet*), Namely, to wit.
v. n. Verb neuter.
Voc. Vocative.
Vol. Volume.
Vols. Volumes.
V. P. Vice-president.
v. r. Verb reflexive.
V. Rev. Very Reverend.
vs. (Lat. *versus*), Against.
V. S. Veterinary Surgeon.
v. t. Verb transitive.
Vt. Vermont.
Vul., Vulg. Vulgate.
Vulg. Vulgar, Vulgarly.
vv. ll. (Lat. *variae lectiones*), Various readings.

W. Wednesday; Week; Welsh; West, Western; (Lat. *wolframium*), Tungsten.
Wall., Wallach. Wallachian.
Wash. Washington.
W. C. Western Central (Postal District, London).
W. C. A. Women's Christian Association.
W. C. T. U. Women's Christian Temperance Union.
Wed. Wednesday.
Wel. Welsh.
w. f. Wrong font (in printing).
Whf. Wharf.
W. I. West Indies; West Indian.
Wis., Wisc. Wisconsin.
Wk. Week.
W. Long. West Longitude.
Wm. William.
W. M. Worshipful Master.
W. N. W. West-north-west.
Wp. Worship.
Wpful. Worshipful.
W. S. Writer to the Signet; West Saxon.
W. S. W. West-south-west.
Wt. Weight.
W. Va. West Virginia.
Wyo. Wyoming.

X. Christ; Xavier.
Xe. Xenon.
Xm., Xmas. Christmas.
Xn. Christian.
Xnty. Christianity.
Xper., Xr. Christopher.
Xt. Christ.
Xtian. Christian.

Y. Year.
Yb. Ytterbium.
Yd. Yard.
Yds. Yards.
Ye. The; Thee.
Y. M. C. A. Young Men's Christian Association.
Y. M. Cath. A. Young Men's Catholic Association.
Y. M. H. A. Young Men's Hebrew Association.
Y. P. S. C. E. Young People's Society of Christian Endeavor.
Yr. Year; Younger; Your.
Ys. Years; Yours.
Yt. Yttrium.
Y. W. C. A. Young Women's Christian Association.

Zach. Zachary.
Zech. Zechariah.
Zeph. Zephaniah.
Z. G., Zoo. Zoölogical Gardens.
Zn. Zinc.
Zoochem. Zoöchemistry, Zoöchemical.
Zoogeog. Zoögeography, Zoögeographical.
Zool. Zoölogy, Zoölogical.
Zr. Zirconium.

COMMON WORDS AND PHRASES.

FROM THE LATIN AND THE GREEK.

ab extra, From without.
ab hoc et ab hac, From this and from that; confusedly.
ab inconvenienti, From the inconvenience.
ab incunabulis, From the cradle.
ab initio, From the beginning.
ab intra, From within.
ab origine, From the origin or beginning.
ab ovo, From the egg.
ab ovo usque ad mala, From egg to apples, i. e., from the beginning to the end of the menu of a Roman banquet; hence, from first to last, from beginning to end.
absit invidia, Let there be no ill-will.
absque argento omnia vana, Without money all is vain.
absque hoc, Without this.
absque ulla conditione, Unconditionally.
absque ulla fraude, Without any fraud.
abundat dulcibus vitiis, He abounds with pleasant faults.
ab uno disce omnes (From one learn all), From a single example judge the whole.
ab urbe condita, From the building of the city, i. e., Rome. [A. U. C.]
abusus non tollit usum, Abuse is not an argument against proper use.
a capite ad calcem, From head to heel.
accepta, The receipts in accounts.
accessit, He came near; applied to a testimonial for one second in merit.
accusare nemo se debet, nisi coram Deo, No one is bound to accuse himself, except before God.
acerrima proximorum odia, The hatred of the nearest relatives is most intense.
acervatim, By heaps.
acribus initiis, incurioso fine, With eager beginnings, but negligent ending.
a cruce salus, Salvation by the cross.
acti labores jucundi, Finished labors are pleasant.
actum est de republica, It is all over with the commonwealth.
a cuspide corona, A crown from the spear; glory from military exploits.
ad absurdum, To show the absurdity.
ad arbitrium, At will, at pleasure.
a dato, From date or from this time.
ad Calendas Graecas, At the Greek calends, i. e., never, since the Greeks had no calends.
ad captandum, To attract or please.
ad captandum vulgus, To catch the rabble.
addendum; (pl.) *addenda*, A thing to be added; an appendix.
a Deo et rege, From God and the king.
ad eundem (sc. *gradum*), To the same degree.
ad extremum, To the extreme.
ad finem, To the end.
ad gustum, To taste.
ad hominem, Personal; to the individual.
adhuc sub judice lis est, The affair is not yet decided.
a die, From that day.
ad infinitum, To infinity.
ad inquirendum, For inquiry.
ad instar, After the manner of.
ad interim, In the meanwhile.
ad internecionem, To extermination.
ad libitum, At pleasure.
ad modum, In the manner of.
ad multos annos, For many years.
ad nauseam, So as to nauseate.
ad patres, Gathered to his fathers; dead.
ad quod damnum, To what damage.
ad referendum, To be further considered.
ad rem, To the purpose; to the point.
adscriptus glebae, Attached to the soil.
adsum, I am present; I am here.
ad summum, To the highest point or amount.
ad unguem, To a nicety.
ad unum omnes, To a man.
ad utrumque paratus, Prepared for either event.
ad valorem, According to the value.
adversus, Against.
ad vivum, To the life.
aegrescit medendo, It becomes worse from the remedies employed.
aequam servare mentem, To preserve an equable mind.
aequanimiter, With equanimity.
aequo animo, With an equable mind.
aere perennius, More lasting than brass; enduring forever.
aetatis suae, Of his or her age.
afflatus, Inspiration.
agenda, Things to be done.
Agnus Dei, The Lamb of God.
αἱ δ' ἐλπίδες εἰσὶν ἐγρηγορότων ἐνύπνια, Hopes are but the dreams of those who wake.
ἀκόλαστα πάντα γίγνεται δούλων τέκνα, Unbridled ever are the sons of slaves.
alere flammam, To feed the flame.
alias, Elsewhere; otherwise.
aliena optimum frui insania, It is well to profit by the madness of others.
alieni appetens, sui profusus, Lavish of his own property while coveting that of others.
alieni temporis flores, Flowers of past time.
alitur vitium vivitque tegendo, Vice thrives and lives by concealment.
aliud corde premunt, aliud ore promunt, One thing they keep back in the heart, they express another with the mouth.
ἄλλος ἐγώ, A second self. (Definition of a friend.)
alma mater, Fostering mother.
alter ego, Another self.
alter idem, Another precisely similar.
alter ipse amicus, A friend is another self.
alterum alterius auxilio eget, The one needs the assistance of the other.
alterum tantum, As much more.
amantium irae amoris integratio, Lovers' quarrels are a renewal of love.
a maximis ad minima, From the greatest to the least.
ambiguas in vulgum spargere voces, To spread doubtful reports among the people.
amicus humani generis, A friend of the human race.
amicus usque ad aras, A friend even to the altars (of sacrifice); to self-immolation.
amo, I love.
amor nummi, Love of money.
amor patriae, Love of country; patriotism.
ἂν ἔτι μίαν μάχην Ῥωμαίους νικήσωμεν, ἀπολούμεθα παντελῶς, One more such victory over the Romans, and we are utterly undone. (Hence the phrase, "A Pyrrhic Victory.")
anguis in herba, A snake in the grass; a false friend; a lurking danger.
animal disputans, A disputatious creature.
animal implume bipes, An animal without feathers and having two legs. Plato's definition of man.
animus furandi, The intention of stealing.
animus imponentis, The intention of the author or composer.
anno aetatis suae, In the year of his or her age.
anno Christi, In the year of Christ. [A. C.]
anno Domini, In the year of our Lord.
anno humanae salutis, In the year of man's redemption. [A. H. S.]
anno mundi, In the year of the world.
anno salutis, In the year of salvation. [A. S.]
anno urbis conditae, In the year since the city—i. e., Rome—was built.
annus mirabilis, A year of wonders. (A term often applied to 1666 in English History, in which the chief events were: War with the Dutch, the Great Plague, and the Great Fire of London. The title of a poem by Dryden.)
ante, Before.
ante bellum, Before the war.
ante lucem, Before daybreak.
ante meridiem, Before noon.
ante tubam trepidat, He trembles even before the trumpet sounds (for the charge).
ἄνθρωπον ζητῶ, I am seeking a man.
anti, Against.
antiqua homo virtute et fide, A man of old-time virtue and fidelity.
a parte ante, From the part gone before; past.
aperto vivere voto, To live with desires freely expressed.
ἁπλοῦς ἐπ' ἐχθροῖς μῦθος ὀπλίζειν χέρα, An armed right hand is our sole reply to foes.
a posse ad esse, From possibility to reality.
a posteriori, From the effect to cause.
apparatus belli, Materials for war.
apparent rari nantes in gurgite vasto, A few appear swimming here and there in the vast whirlpool.
a priori, From the cause to the effect.
aptat se pugnae, He prepares for the contest.
aqua vitae, Brandy; spirit; alcohol.
arbiter elegantiarum, An authority in matters of taste; master of ceremonies.
arcana caelestia, Celestial secrets.
arcana imperii, State secrets.
arcanum, A secret.

argumentum baculinum, The argument of the club; an appeal to force.
argumentum ad crumenam, An argument to the purse.
argumentum ad hominem, An argument to the man.
argumentum ad invidiam, An argument to envy; an appeal to low passions.
argumentum ad judicium, An argument to the judgment.
ἄριστον μέτρον, The golden mean.
ἄριστον μὲν ὕδωρ, Water is the chief element, *i. e.*, the origin of all things.
arrectis auribus, With attentive ears.
ars est celare artem, True art is to conceal art.
artium magister, Master of arts.
a teneris annis, From tender years.
at spes non fracta, Yet hope is not crushed.
audi alteram partem, Hear the other side.
audit vocatus Apollo, Apollo hears when invoked.
aurea mediocritas, The golden mean.
auri sacra fames, The accursed thirst for gold.
auspicium melioris aevi, An omen of better times.
auxilium ab alto, Help from on high.
Ave, Maria, Hail, Mary.
a verbis ad verbera, From words to blows.
a vinculo matrimonii, From the tie of marriage.

beatae memoriae, Of blessed memory.
bella! horrida bella! Wars! horrid wars!
bella matribus detestata, Wars, so detested by mothers.
βέλτιον γὰρ ὀψιμαθῆ καλεῖσθαι, ἢ ἀμαθῆ, It is better to be called late-learned than unlearned.
beneplacito, At pleasure.
benigno numine, By the favor of Providence.
biennium, A period of two years.
bis pueri senes, Old men are twice boys.
bona fide, In good faith.
bona fides, Good faith.
brevi manu, With a short hand, offhand, immediately, summarily.
brevis esse laboro obscurus fio, If I labor to be brief, I become obscure.
brutum fulmen, A harmless thunderbolt.

cacoethes carpendi, A mania for finding fault.
cacoethes loquendi, A rage for speaking.
cacoethes scribendi, A passion for scribbling.
cadit quaestio, The question drops; there is no further discussion.
caetera desunt, The rest is wanting.
caeteris paribus, Other things being equal.
candida Pax, White-robed Peace.
cantate Domino, Sing unto the Lord. (The opening words in the Latin of many Psalms.)
caput, Head; chapter.
caput mortuum, The worthless remains.
caret initio et fine, It wants beginning and end.
casus belli, A cause justifying war; a ground of war.
casus conscientiae, A case of conscience.
casus foederis, The end of the league.
casus fortuitus, A fortuitous occurrence.
causa sine qua non, An indispensable condition.
caveat actor, Let the doer beware.
caveat emptor, Let the buyer beware.
cave canem, Beware of the dog.
cedant arma togae, Let arms yield to the gown; let military authority give place to law.
cede Deo, Submit to Providence.
Christo et Ecclesiae, For Christ and the Church.
χρυσὸς δ' ἄνοιγει πάντας καίδου πύλας, Gold opens every gate, even that of hell.
circuitus verborum, A circumlocution.
circulus in probando, A circle in the proof; the fallacy of using the conclusion as one of the premises.
cis, This side of.
cito, Quickly.
coena Domini, The Lord's Supper.
cogito, ergo sum, I think, therefore I am.
comitas inter gentes, Comity between nations.
commune bonum, A common good.
communia proprie dicere, To say common things appropriately.
communibus annis, On the annual average; one year with another.
communi consensu, By common consent.
compos mentis, Of a sound mind.
con commodo, At a convenient rate.
concordia discors, Discordant harmony.
conditio sine qua non, An indispensable condition.
conjunctis viribus, With united powers.
conquiescat in pace, May he rest in peace.
consensus facit legem, Consent makes the law.
consuetudo pro lege servatur, Custom is held as law.
contra bonos mores, Contrary to good manners.
copia verborum, An abundant supply of words; fluency of speech.
coram nobis, In our presence.
coram non judice, Before a person who is not a judge; not before the proper tribunal.
corpus Christi, Body of Christ.
corrigenda, Corrections to be made.
corruptio optimi pessima, The corruption of the best becomes the worst.
cor unum, via una, One heart, one way.
cos ingeniorum, A whetstone for the wits.
crescit eundo, It increases as it goes.
crux criticorum, The puzzle of critics.
crux mathematicorum, The puzzle of mathematicians.
crux medicorum, The puzzle of physicians.
cui bono? What is the good of it?
culpam poena premit comes, Punishment follows close on crime.
cum grano salis, With a grain of salt; with some allowance.
cum privilegio, With privilege.
currente calamo, With a running pen; offhand.
custos morum, The guardian of morality.
custos rotulorum, Keeper of the rolls.

dabit Deus his quoque finem, God will put an end to these also.
damnant quod non intelligunt, They condemn what they do not understand.
damnum absque injuria, A loss without an injury.
data et accepta, Expenses and receipts.
datum, pl. data, A fact or principle granted.
deceptio visus, An optical illusion.
decies repetita placebit, Though ten times repeated it will please.
decrevi, I have decreed.
de die in diem, From day to day.
de gustibus non est disputandum, There is no disputing about tastes.
Dei gratia, By the grace of God.
de jure, By the law; by right.
dele, Blot out, erase.
delectando pariterque monendo, By pleasing while admonishing.
delenda est Carthago, Carthage must be destroyed. (The phrase by which Cato the Elder urged the Roman people to destroy Carthage, the hated rival of Rome, and by which he is said to have concluded every speech which he made in the Roman Senate, even when an irrelevant subject was under discussion.
Δελφικὴ μάχαιρα, A Delphic sword. (A two-edged sword, in reference to the ambiguities of the Delphic oracle.)
de minimis non curat lex, The law does not concern itself with trifles.
de mortuis nil nisi bonum, Let nothing be said of the dead but what is good.
de nihilo nihil, in nihilum nil posse reverti, From nothing nothing, into nothing nothing can return. (The doctrine of the indestructibility of matter.)
de novo, Anew.
Deo date, Give to God.
Deo gratias, Thanks be to God. [D. G.]
de omnibus rebus, et quibusdam aliis, Concerning all things, and certain other things beside. (Said of the literary work of an immature author treating of many subjects.)
Deo monente, God giving warning.
Deo, non fortuna, From God, not from chance.
Deo vo'ente, God willing.
de profundis, Out of the depths. (The first words of the Latin version of Ps. cxxx.)
desideratum, A thing desired.
desuetudo, Disuse.
desunt caetera, The remainder is wanting.
Deus nobis haec otia fecit, God has given us this ease.
Deus vobiscum, God be with you.
dextro tempore, At a favorable time
dictum, A saying; a decision.
dictum de dicto, Report upon hearsay.
dies faustus, A lucky day.
dies infaustus, An unlucky day.
dies irae, Day of wrath; the title of a celebrated Latin hymn.
dii majorum gentium, The gods of the superior houses; the twelve superior gods.
dii penates, Household gods.
disjecta membra, Scattered remains.
docendo discimus, We learn by teaching.
doli incapax, Incapable of mischief.
dominus, Lord.
Dominus vobiscum, The Lord be with you. (The words by which the priest blesses the people in the Roman Church.)
δός μοι ποῦ στῶ καὶ κινῶ τὴν γῆν, Give me a standpoint, and I can move the earth.
do ut des, I give that you may give; the principle of reciprocity.

dramatis personae, The characters of the play.
dulce et decorum est pro patria mori, It is sweet and glorious to die for one's country.
durante vita, During life.

ecce homo, Behold the man! (Applied specifically to a picture of Christ wearing a crown of thorns, when delivered to the people by Pilate.)
e contrario, On the contrary.
editio princeps, The first edition.
ἐγὼ γάρ εἰμι τῶν ἐμῶν ἐμὸς μόνος, Of all my kin I am my only friend.
eheu! fugaces labuntur anni, Alas! our fleeting years slip away.
emeritus, One retired from active official duties.
ἕνα . . . ἀλλὰ λέοντα, One, but a lion.
ἐν νύκτε βουλή, In the night there is counsel; sleep on it.
eo nomine, By that name.
equanimiter, With equanimity.
e regione, In a straight line; exactly opposite.
e re nata, According to the exigency.
errare est humanum, To err is human.
erratum (pl. errata), An error.
ἦσω γὰρ καὶ ἐγὼ, τὰ δέ κεν Διὶ πάντα μελήσει, I hurl the spear, but Jove directs the blow.
esse, To be; existence.
est modus in rebus, There is a middle course in all things.
esto perpetua, Let it endure forever.
et caetera, And the rest.
et cum spiritu tuo, And with thy spirit.
et sequentes, et sequentia, And those that follow; and what follows.
et tu, Brute! And thou also, Brutus. (The dying exclamation of Caesar, when he saw Brutus among his assassins.)
εὕρηκα, εὕρηκα, I have found it! I have found it!
e vestigio, Instantly.
ex abrupto, Abruptly; suddenly.
ex abundantia, Out of the abundance.
ex adverso, From the opposite side.
ex aequo et bono, According to what is right and good.
ex capite, From the head, from memory.
ex cathedra, From the chair or pulpit; spoken with authority; by virtue of office.
exceptio probat regulam, The exception proves the rule.
exceptis excipiendis, Due exceptions (or allowances) having been made.
excerpta, Extracts.
excudit, He made it.
ex curia, Out of court.
ex delicto, From the crime.
ex dono, By the gift.
exegi monumentum aere perennius, I have reared a monument more lasting than bronze. (Said by Horace in regard to his poems.)
exempli gratia, By way of example. [e. g.]
exeunt, They go out.
exeunt omnes, All go out.
exit, He (or she) goes out.
exitus acta probat, The result justifies the deed.
ex more, According to custom.
ex necessitate rei, From the urgency of the case.
ex nihilo nihil fit, From nothing nothing comes.
ex officio, By virtue of office.
ex opere operato, By outward acts.
ex parte, On one part or side.
experto crede, Believe one who has tried it, or who speaks from experience.
ex post facto, After the deed is done; retrospective.
ex propriis, From one's own resources.
ex tempore, Off hand; without preparation.
extra muros, Outside the walls.
extra ordinem, Extraordinarily.
ex usu, From, or by, use.

facetiae, Jokes.
facile princeps, The acknowledged chief; one who stands undoubtedly first.
facsimile, An exact imitation.
factotum, A man of all work.
fare, fac, Say, do.
fata obstant, The Fates oppose.
fata viam invenient, The Fates will find out a way.
favete linguis, Be silent.
fax mentis incendium gloriae, The passion for glory is a torch to the mind.
fecit, He made it.
feliciter, Happily; successfully.
felo de se, Self-felony; a suicide.
ferae naturae, Of a wild nature; applied to wild beasts.
fiat, Let it be done.
fiat justitia ruat caelum, Let justice be done though the heavens should fall.
fiat lux, Let there be light.
fidei defensor, Defender of the faith.
fides Punica, Punic faith; treachery. (Among the Romans the bad faith of the Poeni or Carthaginians was notorious.)
fidus Achates, Faithful Achates, the companion of Aeneas; a trusty friend.
filius populi, A son of the people.
filius terrae, A son of the earth; one of low origin.
finis, The end.
flagrante delicto, In the commission of the crime; in the very act.
fruges consumere nati, Born to consume the fruits of the earth; born only to eat.
fugit hora, The hour flies.
fuit Ilium, Troy has been; Troy was, but is no more.
functus officio, Having discharged his duties; hence, out of office.
furor arma ministrat, Rage provides arms.
furor loquendi, A rage for speaking.
furor poeticus, Poetical fire.
furor scribendi, A rage for writing.

gallice, In French.
genius loci. The genius or presiding spirit of the place.
germanice, In German.
gloria in excelsis Deo, Glory to God in the highest.
gloria Patri, Glory be to the Father.
gradatim, Gradually; step by step.
Gradus ad Parnassum, Steps to Parnassus; aids to writing Greek and Latin verses. (The name of a book.)
gratis dictum, Mere assertion.
gregatim, Gregariously.

Hannibal ad portas, Hannibal at the gates; the enemy close at hand.
ἅπαξ λεγόμενον, Said or used but once (as a rare word).
haud longis intervallis, At frequent intervals.
helluo librorum, A devourer of books; a bookworm.
hic et ubique, Here and everywhere.
hic finis fandi, Here was an end to the discourse.
hic jacet, Here lies.
hic sepultus, Here is buried.
hinc illae lacrimae, Hence these tears; this is the cause of the trouble.
ἱστορία φιλοσοφία ἐστὶν ἐκ παραδειγμάτων, History is philosophy teaching by examples.
hoc anno, In this year.
hoc loco, In this place.
hoc saxum posuit, He placed this stone.
hoc tempore, At this time.
hominis est errare, To err is of man.
homo alieni juris, A man under the control of another.
homo factus ad unguem (usually thus quoted; but the correct form is *ad unguem factus homo*), A highly cultivated and polished man; literally, a man polished to the finger nail. (The expression is suggested by a practice of sculptors, who use the finger nail in putting the finishing touches to their models.)
homo homini lupus, Man is a wolf to his fellow man; one man preys on another.
homo multarum literarum, A man of many letters; a man of great learning.
homo sui juris, A man who is his own master.
honores mutant mores, Honors change manners.
honor est a Nilo, Honor is from the Nile. (Anagram for "Horatio Nelson.")
honos alit artes, Honor nourishes the arts.
honos habet onus, Honor is burdened with responsibility.
hora fugit, The hour flies.
horribile dictu, Horrible to tell.
hortus siccus, A dry garden; a collection of dried plants; an herbarium.

idem sonans, Sounding the same.
id est, That is.
id genus omne, All that class.
idoneus homo, A fit man.
Ἰησοῦς Χριστοῦ Θεοῦ Υἱος Σωτήρ, Jesus Christ, the Son of God, Saviour. The initials of these Greek words form the Greek word *ἰχθύς*, a fish, and this fact explains the common use of the fish as a weather vane on church steeples.
Iesus, Hominum Salvator, Jesus, Saviour of men.
imo pectore, From the bottom of one's heart.
impari Marte, With unequal military strength.
impedimenta, Luggage; the baggage of an army.
imperium in imperio, A government existing within a government. (Said of a power set up against constituted authority.)
in actu, In the very act; in reality.
in aequilibrio, In equilibrium.
in ambiguo, In doubt.
in armis, Under arms.

in articulo mortis, At the point of death.
in camera, In the chamber; in secret.
in capite, In chief.
in curia, In court.
inde irae, Hence this resentment.
index expurgatorius, A list of prohibited books.
in dubiis, In matters of doubt.
in esse, In being.
in extenso, At length.
in extremis, In very bad circumstances; at the point of death.
infinito, Perpetually.
in flagrante delicto, In the commission of the act.
infra dig., *infra dignitatem*, Beneath one's dignity.
in invitum, Against an unwilling party.
in loco, In the place; upon the spot; in the place of.
in loco parentis, In the place of a parent.
in medias res, In the very midst of the business.
in medio tutissimus ibis, Safety lies in a middle course.
in memoriam, In memory of.
in nomine, In the name of.
in ovo, In the egg.
in pace, In peace.
in perpetuum, Forever.
in pleno, In full.
in posse, In possible existence.
in praesenti, At the present time.
in propria persona, In one's own person.
in re, In the matter of.
in rem, Against the thing or property.
in rerum natura, In the nature of things.
in saecula saeculorum, Forever.
insculpserunt, They engraved it.
insculpsit, He engraved it.
in situ, In its proper position.
in statu quo, In its former state.
in stirpes, According to lineage.
in suspenso, In suspense.
in te, Domine, speravi (Ps. xxxi.), In thee, O Lord, have I put my trust.
inter alia, Among other things.
inter canem et lupum, Between the dog and the wolf; twilight.
inter nos, Between ourselves.
inter se, Amongst themselves.
in toto, In the whole; entirely.
in transitu, On the passage.
intra parietes, Within the walls; private.
in usu, In use.
in utroque fidelis, Faithful in both.
in utrumque paratus, Prepared for either event.
in vacuo, In a vacuum.
ipse dixit, He himself has said it; a mere assertion.
ipsissima verba, The identical words.
ipso facto, By the fact itself.
ipso jure, By the law itself.
ita est, It is so.
ita lex scripta est, Such is the written law.
italice, In Italian characters.
iterum, Again.

jacta alea est! The die is cast! (The exclamation of Julius Caesar when he crossed the Rubicon.
januis clausis, With closed doors; in secret.
joci causa, For the sake of a joke.
jubilate Deo (Ps. c. 1), O be joyful in the Lord.
judicium Dei, The judgment of God.
judicium parium aut leges terrae (Magna Charta), The judgment of our peers, or the laws of the land.
jure divino, By divine law.
jure humano, By human law.
jus canonicum, Canon law.
jus civile, The civil law.
jus divinum, The divine law.
jus et norma loquendi, The law and rule of speech.
jus gentium, The law of nations.
jus possessionis, The right of possession.
juxta, Near by.

καθ' ὕδατος γράφεις, You are writing in water.
κατ' ἐξοχήν, Preëminently.

labore et honore, By labor and honor.
laesa majestas, High treason.
lapis philosophorum, The philosopher's stone.
lapsus calami, A slip of the pen.
lapsus linguae, A slip of the tongue.
lapsus memoriae, A slip of the memory.
lares et penates, Household gods.
latine dictum, Spoken in Latin.
laus Deo, Praise to God.
lector benevole, Kind, or gentle, reader.
legatus a latere, A papal legate.
lege, Read.
lex loci, The law of the place.
lex non scripta, The unwritten law; the common law.
lex scripta, The written or statute law.
lex talionis, The law of retaliation.
λιμῷ γὰρ οὐδὲν ἐστιν ἀντειπεῖν ἔπος, There is no word with which to answer hunger.
lingua franca, The mixed language spoken by Europeans in the East.
lite pendente, During the trial.
loco citato, In the place quoted.
locum tenens, One occupying the place; a substitute.
locus criminis, Place of the crime.
locus in quo, The place in which.
locus sigilli, The place of the seal.
longo intervallo, By or with a long interval.
lucus a non lucendo, A witticism, which, assuming that *lucus*, a dark grove, is derived from the verb *lucere*, to shine, supposes it must be a *non lucendo*, from its not being light; an absurd name.
lusus naturae, A freak of nature; a deformed animal or plant.

magister ceremoniarum, A master of the ceremonies.
Magna Charta, The great charter; the charter of English liberties.
magna civitas, magna solitudo, A great city is a great solitude.
magnum bonum, A great good.
magnum opus, A great undertaking; the great work of a man's life.
mala fide, With bad faith; treacherously.
mali exempli, Of a bad example.
mali principii malus finis, The bad end of a bad beginning.
malis avibus, With unlucky birds, *i. e.*, with bad omens.
malo modo, In an evil manner.
malum in se, Bad in itself.
manibus pedibusque, With hands and feet; tooth and nail.
manu propria, With one's own hand.
mare clausum, A closed sea; a bay.
materfamilias, The mother of a family.
materia medica, Substances used in the healing art.
maximus in minimis, Very great in trifling things.
mea culpa, Through my fault.
me judice, I being the judge; in my opinion.
memorabilia, Things to be remembered.
memoria in aeterna, In eternal remembrance.
μὴ νῦν τὰ πόρσω τάγγύθεν μεθεὶς, σκόπει, Gaze not on things afar, neglecting things at hand.
memoriter, By rote.
meo voto, At my own wish.
minutiae, Trifles.
mirabile dictu, Wonderful to relate.
mirabile visu, Wonderful to see.
mirabilia, Wonders.
mirum in modum, In a wonderful manner.
miserabile vulgus, A wretched crew.
modo et forma, In manner and form.
modus, Manner.
modus operandi, The manner of working.
μοῖρα δέ τις καὶ πόλεων ἐστὶν ὥσπερ καὶ ανδρῶν, Cities have their destinies as well as men.
monumentum aere perennius, A monument more durable than bronze.
more majorum, After the manner of our ancestors.
more suo, In his own way.
mors janua vitae, Death is the gate of life.
mors omnibus communis, Death is common to all.
mos pro lege, Custom has the force of law.
motu proprio, Of his own accord.
mutatis mutandis, The necessary changes being made.
mutuus consensus, Mutual consent.

nec scire fas est omnia, It is not allowed to know all things.
ne exeat, Let him not depart.
nemine contradicente, No one contradicting.
nemine dissentiente, No one dissenting.
nemo reclamat, nullus obsistit, No one protests, no one makes opposition.
νέος ἀπόλλυθ', ὀντινα φιλεῖ θεός, He whom the gods love dies young.
ne quid detrimenti respublica capiat, In order that the commonwealth suffer no injury. (The form of words by which the dictator of the Roman republic was invested with supreme authority.)
nihil ad rem, Nothing to the point.
nihil tetigit quod non ornavit, He touched nothing without embellishing it.
νικᾶ δ' ὁ μειὼν τὸν μέγαν, δίκαι' ἔχων, And armed with right, the less o'ercomes the great.
nil admirari, To be astonished at nothing.
nil dicit, He makes no answer.
nolens volens, Willing or unwilling.

noli me tangere, Touch me not.
nomen et omen, Name and omen; a name that is ominous.
non compos mentis, Not in sound mind.
non constat, It does not appear.
non datur tertium, There is no third choice.
non ens, Nonentity.
non est, It is not; wanting.
non est inventus, He is not found.
non libet, It does not please me.
non liquet, It is not clear.
non obstante, Notwithstanding.
non omne licitum honestum, Lawful acts are not all honorable.
non omnia possumus omnes, We cannot, all of us, do everything.
non sequitur, It does not follow; an illogical conclusion.
non sum qualis eram, I am not what I once was.
noscitur a sociis, A man is known by the company he keeps.
nostro periculo, At our own risk.
nota bene (N. B.), Mark well.
notatu dignum, Worthy of note.
νοῦς ἐστὶν ὁ διακοσμῶν τε καὶ πάντων αἴτιος, Mind is the disposer and cause of all.
nudis verbis, In plain words.
nuptiae, nuptials; wedding.

obiit, He (or she) died.
obiter dictum, A casual remark; an unauthoritative opinion.
observanda, Things to be observed.
odi profanum vulgus, et arceo, I hate the vulgar crowd, and drive them away.
odium theologium, The hatred of theologians.
officina gentium, The workshop of the world.
οἷα κεφαλὴ ἐγκέφαλον οὐκ ἔχει, What a splendid head, and yet no brain!
ὀλίγοι γὰρ ἐσθλοὶ κρείσσονες πολλῶν κακῶν, Better a few brave men than many cowards.
omne ignotum pro magnifico, Everything unknown is thought to be magnificent.
omne solum forti patria est, Every land is a brave man's country.
omnia mutantur, nos et mutamur in illis, All things are subject to change and we change with them.
omnia vincit amor, et nos cedamus amori, Love conquers all things, let us too yield to love.
οἱ πολλοί, The many; the common people.
ora pro nobis, Pray for us.
orate pro anima, Pray for the soul (of).
orator fit, poeta nascitur, The orator is made; the poet is born.
ore rotundo, With a full voice.
origo mali, Origin of evil.
o tempora, o mores, Alas for the times and the manners.
otium cum dignitate, Ease with dignity.
οὐ τοὺς Λακεδαιμονίους (ἔφη) ἐρωτᾶν πόσοι εἰσίν, ἀλλὰ ποῦ εἰσὶν οἱ πολέμιοι, The Lacedemonians do not ask "How many are the enemy?" but "Where are they?"
pace tua, By your leave.
pacta conventa, The conditions agreed on.
palmam qui meruit ferat, Let him bear the palm who has deserved it.
Πὰν ὁ μέγας τέθνηκε, Great Pan is dead.
pari passu, With equal pace; together.
paritur pax bello, Peace is produced by war.
par negotiis, neque supra, Equal to, but not above, his business.
pars adversa, The adverse party.
pars pro toto, The part for the whole.
particeps criminis, A partaker in the crime; an accessory.
parva componere magnis, To compare small things with great ones.
passim, Everywhere; throughout.
πάταξον μὲν ἄκουσον δέ, Strike, but hear me.
paterfamilias, The father of the family.
Pater noster, Our Father.
pater patriae, The father of his country. A title bestowed by the Roman Senate on Caesar Octavianus Augustus.
patres conscripti, The Conscript Fathers; the Roman Senate. (Applied humorously to the members of municipal and town councils.)
pax in bello, Peace in war.
pax orbis terrarum, The sovereignty of the world. (A legend frequently found upon Roman coins.)
pax Romana, The Roman Empire.
pax vobiscum, Peace be with you.
peccavi, I have sinned.
per, By, through, by means of.
per capita, By the head.
per centum, By the hundred.
per contra, Contrariwise.
per diem, By the day.
per fas et nefas, Through right and wrong.
per gradus, Gradually.
per interim, In the meantime.
per se, In itself; for its own sake.
petitio principii, A begging of the question.
per viam, By the way of.
φύσει σοφὸς μὲν οὐδείς, No one is wise by nature.
pinxit, He (or she) painted it.
placet, It pleases. (Specifically, the mode of assent by a civil power to the promulgation of a papal bull or an ecclesiastical ordinance. A vote of assent, as of the governing body of a university, or of the members of an ecclesiastical council. The form of dissent is *non placet*.)
plebs, The common people.
poeta nascitur, non fit, The poet is born, not made.
ποιητὰ δὲ νόμιμα εἶναι, Whatever is, is right.
πολλοὶ στρατηγοὶ Καρίαν ἀπώλεσαν, Too many generals lost Caria.
pons asinorum, The bridge of asses.
posse videor, I seem to be able.
post bellum auxilium, Aid after the war.
post cineres gloria venit, Glory comes after death.
post mortem, After death.
post obitum, After death.
praecognita, Things previously known.
prescriptum, A thing prescribed.
primae viae, The first passages.
prima facie, At the first glance.
primo, In the first place.
primus inter pares, First among his peers.
principiis obsta, Resist the first advances.
probatum est, It is proved.
pro Deo et ecclesia, For God and the church.
pro et con (for *contra*), For and against.
profanum vulgus, The vulgar rabble.
pro forma, As a matter of form.
pro hac vice, For this turn or occasion.
pro memoria, As a memorial.
pro nunce, For the present.
propaganda fide, For extending the faith.
pro patria, For our country.
pro rata, In proportion.
pro rege, lege, et grege, For the king, the law, and the people.
pro re nata, For a special emergency.
pro tanto, For so much.
pro tempore, For the time being.
ψυχῇ μιᾷ ζῆν, οὐ δυοῖν, ὀφείλομεν, One life to live, not twain—this is our due.
pulvis et umbra sumus, We are dust and shadow.
punctum saliens, A salient or prominent part.
punica fides, Punic faith; treachery

quaere, Query; inquiry.
quaeritur, The question arises.
qualis vita, finis ita, As life is, so will its end be.
quamdiu se bene gesserit, As long as he behaves himself; during good behavior.
quantum, The quantity or amount.
quantum libet, As much as you like.
quantum meruit, As much as he deserved.
quantum mutatus ab illo, How changed from what he was.
quantum sufficit, A sufficient quantity.
quantum vis, As much as you will.
quasi, As if; in a manner.
quem di diligunt adolescens moritur, Whom the gods love dies young.
qui capit, ille facit, He who takes it, makes it.
quid faciendum? What is to be done?
quid nunc? What now? what news?
qui docet, discit, He who teaches, learns.
quid pro quo, One thing for another; an equivalent.
quid rides? Why do you laugh?
quid times? What do you fear?
quoad hoc, To this extent.
quo animo? With what intention?
quocunque modo, In whatever manner.
quocunque nomine, Under whatever name.
quod avertat Deus! God forbid!
quod bene notandum, Which is to be especially noted.
quod erat demonstrandum, Which was to be proved. Abbreviated Q. E. D.
quod erat faciendum, Which was to be done. Abbreviated Q. E. F.
quod vide [q. v.], Which see.
quomodo? In what manner? how?
quondam, Former.

rara avis, A rare bird. (Sometimes used to express incredulity or doubt about a story or description.)
rata, Rate; one's own share.

ratione soli, According to the soil.
rectus in curia, Upright in court, with clean hands.
regium donum, A royal gift.
renovato nomine, By a revived name.
requiescat in pace, May he rest in peace.
rerum primordia, The first elements of things.
res gestae, Things done; exploits.
res judicata, A matter already settled.
respublica, The commonwealth.
resurgam, I shall rise again.
re vera, In truth.
Ῥώμη δέ γ' ἀμαθὴς πολλάκις τίκτει βλάβην, Strength unInstructed ofttimes causes harm.
ruat caelum, Let the heavens fall.
rus in urbe, The country in the city.

sal Atticum, Attic salt; wit.
salvo jure, The right being safe.
salvo sensu, The sense being preserved.
sanctum sanctorum, Holy of holies.
sartor resartus, The mender mended.
satis superque, Enough, and more than enough.
scilicet, That is to say; to wit.
scribimus indocti doctique, Learned and unlearned, we all write.
secundum artem, According to the rules of art.
secundum naturam, According to the course of nature.
secundum ordinem, In order.
semel et simul, Once and together.
semel pro semper, Once for all.
semper felix, Always fortunate.
senatus consultum, A decree of the senate.
sensu bono, In a good sense.
sensu malo, In a bad sense.
seriatim, In order; serially.
sero, sed serio, Late, but seriously.
servare modum, To keep within bounds.
sesquipedalia verba, Words a foot and a half long.
sic passim, So everywhere.
sic semper tyrannis, Ever thus to tyrants.
sic transit gloria mundi, So the glory of this world passes away.
sicut ante, As before.
sic vos non vobis, Thus do ye, but not for yourselves.
si diis placet, If it pleases the gods.
silentium altum, Deep silence.
silent leges inter arma, The laws are silent amidst arms.
si monumentum requiris, circumspice, If you seek his monument, look around. (An inscription in St. Paul's Cathedral, London, for Sir Christopher Wren, who was the architect of the building.)
sine cura, Without care or charge.
sine die, Without a day appointed.
sine dubio, Without doubt.
sine invidia, Without envy.
sine praejudicio, Without prejudice.
sine qua non, Without which, not; an indispensable condition.
siste, viator, Stop, traveler.
σκηνὴ πᾶς ὁ βίος, All the world 's a stage.
sit ut est, aut non sit, Let it be as it is, or not at all.
spes tutissima caelis, The safest hope is in heaven.
splendide mendax, Splendidly false; untrue for a noble cause.
spolia opima, The richest booty.
sponte sua, Of one's own accord.
stat magni nominis umbra, He stands the shadow of a mighty name.
status quo ante bellum, The state in which things were before the war.
status quo, status in quo, statu quo, The state in which.
sta, viator, heroem calcas, Stop, traveler, thou art treading upon a hero.
stet, Let it stand.
studium immane loquendi, An insatiable desire for talking.
sua cuique voluptas, Every man has his own pleasures.
suaviter in modo, fortiter in re, Gentle in manner, forcible in action.
sub colore juris, Under color of law.
sublata causa, tollitur effectus, The cause having been removed the effect ceases.
sub poena, Under a penalty.
sub rosa, Under the rose; secretly.
sub silentio, In silence.
sub specie, Under the appearance of.
sub voce, Under the word.
suggestio falsi, Suggestion of falsehood.
sui generis, Of its own kind; unique.
συμβούλευε μὴ τὰ ἥδιστα, ἀλλα τὰ κάλλιστα, Consider not what is most agreeable, but what is best.
summa summarum, Sum total.
summum bonum, The chief good.
summum jus, summa injuria est, The rigor of the law is the height of oppression.
sunt lacrimae rerum, There are tears for misery.
suo marte, By his own powers or skill.
suum cuique, Let each have his own.
suus cuique mos, Every one has his own particular habit.

tabula rasa, A blank tablet.
taedium vitae, Weariness of life.
tantaene animis caelestibus irae? Can such anger dwell in heavenly minds?
te judice, You being the judge.
tempora mutantur, et nos mutamur in illis, The times are changed, and we are changed with them.
tempus edax rerum, Time the devourer of all things.
tempus fugit, Time flies.
tempus ludendi, The time for play.
tentanda via est, A way must be tried.
terra firma, The firm land; the continent.
terra incognita, An unknown land.
tertium quid, A third something difficult of classification as to nature or substance; a nondescript.
teste, Witness; the concluding clause of a writ.
τίς οὖν ἄρξει τοῦ ἀρχοντος, Who then shall rule the ruler?
τίς τρίχας ἀντ' ἠρίων ἐποκίξατο, Who will shear hair when he can shear wool?
toga virilis, The gown of manhood.
τὸ καλόν, The beautiful.
τὸ κέρδος ἡδὺ κἂν ἀπὸ ψευδῶν ἴῃ, How sweet is gain, e'en though it comes from fraud.
τῶν εὐτυχούντων πάντες εἰσὶ συγγενεῖς, All men claim kinship with the fortunate.
τὸ πρέπον, What is becoming or decorous.
tot homines, quot sententiae, So many men, so many minds.
totidem verbis, In just so many words.
toties quoties, As often as.
toto caelo, By the whole heavens; diametrically opposite.
totum, The whole.
trahit sua quemque voluptas, Each one is drawn by his own taste.
tria juncta in uno, Three joined in one (the motto of the Order of the Bath).
truditur dies ille, Day is pushed forward by day.

ubi bene ibi patria, Where one is well off, there is his country.
ubi jus incertum, ibi jus nullum, Where the law is uncertain, there is no law.
ubi lapsus? Where have I fallen?
ubi libertas, ibi patria, Where liberty dwells, there is my country.
ubique, Everywhere.
ubi supra, Where above mentioned.
ultima ratio regum, The last argument of kings.
ultima Thule, The utmost boundary or limit.
ultimus Romanorum, The last of the Romans.
ultra licitum, Beyond what is allowable.
una voce, With one voice.
uno animo, With one mind, unanimously.
usque ad aras, To the very altars.
usque ad nauseam, To disgust.
usus loquendi, Usage in speaking.
ut apes geometriam, As bees practise geometry.
utcunque placuerit Deo, As it shall please God.
ut infra, As stated or cited below.
ut supra, As stated or cited above.

vade in pace, Go in peace.
vade mecum, Go with me; a constant companion.
vae victis, Woe to the conquered. (Said to have been the exclamation of Brennus, when he threatened to exterminate the Romans.)
vale, Farewell.
valete ac plaudite, Farewell and applaud.
variae lectiones, Various readings.
variorum notae, The notes of various authors.
vel prece, vel pretio, For either love or money.
venia necessitati datur, Pardon is granted to necessity; necessity has no law.
veni, vidi, vici, I came, I saw, I conquered.
verbatim et literatim, Word for word and letter for letter.
veritatis simplex oratio est, The language of truth is simple.
vestigia, Tracks, traces.
vexata quaestio, A disputed question.
via, By the way of.
via media, A middle course.
via trita, via tutissima, The beaten path is safest.
vice, In the place of.
vice versa, The terms being exchanged.
vide et crede, See and believe.
videlicet, To wit; namely. Abbreviated *viz.*
videtur, It appears.
vide ut supra, See what is stated above.

vi et armis, By force and arms.
vincet amor patriae, The love of country will prevail.
vinculum matrimonii, The bond of marriage.
vindex injuriae, An avenger of injury.
vir sapit qui pauca loquitur, He is wise who talks but little.
virtus semper viridis, Virtue ever green and flourishing.
virtute, non viris, From virtue, not from men.
virtute officii, By virtue of one's office.
vis comica, Comic power or talent.
vis conservatrix naturae, The preservative power of nature.
vis inertiae, The power of inertia; resistance.
vis medicatrix naturae, The healing tendency of nature.
vis preservatrix, A preserving power.
vis vitae, The vigor of life.
vitam impendere vero, To risk one's life for the truth.
vita sine litteris mors est, Life without literature is death.
vitiis nemo sine nascitur, No one is born without faults.
vivat regina, Long live the queen.
vivat respublica, Long live the republic.
vivat rex, Long live the king.
viva voce, By the living voice; by oral testimony.
vive, vale, Farewell and be happy.
volo, non valeo, I am willing, but unable.
vota vita mea, My life is devoted.
votum castitatis, A vow of chastity.
vox clamantis in deserto, The voice of one crying in the wilderness.
vox et praeterea nihil, A voice and nothing more; sound without meaning.
vox faucibus haesit, His voice stuck in his throat; he was speechless.
vulgo, Commonly.
vulnus immedicabile, An irreparable injury.

ξένους πένητας μὴ παραδράμῃς ἰδών, Seek not to flee from guest of low estate.
ζῶμεν ἀλογίστως, προσδοκῶντες μὴ θανεῖν, Thoughtless we live, expecting not to die.

zonam perdidit, He has lost his purse; he is in distressed circumstances.

MODERN LANGUAGES.

Phrases not designated are from the French; those from other languages are distinguished thus: (Ger.)—German; (It.)—Italian; and (Sp.)—Spanish.

a, At; according to; to.
a bas, Down.
a bon marche, Cheap.
abonnement, Subscription.
a bras ouverts, With open arms.
abrege, Abridgment.
absence d'esprit, Absence of mind.
a causa persa, parole assai (It.), When the cause is lost, there is enough of words.
accueil, Reception; greeting; welcome.
a charge, At expense.
a cheval, On horseback.
a compte, On account.
a coup sur, With certainty; surely.
a couvert, Under cover, protected, sheltered.
acqua Tofana (It.), A subtle poison.
a demi, By halves.
a dessein, Designedly.
a deux mains, For both hands; having two uses.
a discretion, At discretion, unrestrictedly.
a droite, To the right.
affaire d'amour, A love affair.
affaire d'honneur, An affair of honor, a duel.
affaire du coeur, An affair of the heart, a love affair.
a fin, To the end or object.
affreux, Frightful.
a fond, To the bottom, thoroughly.
a gauche, To the left.
a haute voix, Aloud.
aimable, Amiable.
a l'abandon, At random; disregarded; left uncared for.
a la belle etoile, In the open air.
a la bonne heure! Well-timed! In good time!
a la campagne, In the country.
a la faveur, By the favor of.
a la Française, In French fashion.
alguazil (Sp.), A Spanish constable.
a l'improviste, Unawares, on a sudden.
all' alba (It.), At daybreak.
alla Siciliana (It.), In the Sicilian manner; in shepherd's dress.
allegresse, Liveliness; genialitv.
Alles hat seine Zeit (Ger.), All in good time.
allez-vous en, Away with you, be off.
allons, Come on.
allzuviel ist ungesund (Ger.), Too much of a good thing.
al occorrenza (It.), According to circumstances.
a l'ordinaire, In the ordinary manner.
al piu (It.), At most.
alto rilievo (It.), In high relief.
am Anfang (Ger.), At the beginning.
amende honorable, Fit reparation; a satisfactory apology.
a merveille, Marvelously.
ami de cour, A friend of the court; hence an uncertain friend.
ami du peuple, Friend of the people.
a moitie, By halves.
ancien regime, The ancient order of things.
a outrance, To the death.
a peindre, Worth painting.
a peu pres, Nearly.
a pezzi (It.), By the piece.
a piacere (It.), At pleasure.
a pied, On foot.
a plomb, Perpendicularly; firmly.
a point, Just in time; exactly; exactly right.
appui, Point of support; prop.
a prima vista (It.), At the first sight.
a propos, To the point.
a propos de rien, Apropos to nothing; not pertinently.
arc-en-ciel, Rainbow.
a rez de chaussee, Even with the ground.
argent comptant, Ready money.
arriere pensee, Mental reservation; unavowed purpose.
a toute outrance, To the utmost; mercilessly.
a tout hasard, At all hazards; at all events.
a tout prix, At any price.
au bon droit, To the just right.
au courant, Well acquainted with; well informed.
au desespoir, In despair.
au levant, To the east; eastward.
au pis aller, At the very worst.
auto da fe (Portuguese), An act of faith; the burning of Jews and heretics.
autre droit, Another's right.
autre fois, Another time.
aux armes, To arms.
avant propos, Preface; introductory matter.
avec permission, By consent.
a volonte, At pleasure.
a vostra salute (It.), To your health.
a votre sante, To your health.
a vuestra salud (Sp.), To your health.

beaux esprits, Men of wit, or genius.
beaux yeux, Handsome eyes; attractive looks.
bel esprit, A wit, a genius.
bel etage, The second story of a house.
ben trovato (It.), Well invented.
besoin, Need; want.
bete, A beast.
boite, A small box for work, carried by ladies.
bon gre, mal gre, With good or bad grace; willing or unwilling.
bonne et belle, Good and pretty.
bonne foi, Good faith.
bouleversement, Overturning.
brevet d'invention, A patent.
brevete, Patented.

cabaretier, An innkeeper.
cachot, A dungeon.
cap-a-pie, From head to foot.
carbonari (It.), Members of a secret political society in Italy.
careme, Fast; lent.
c'en est fait de lui, It is all over with him.
c'est-a-dire, That is to say.
c'est une autre chose, That is quite another thing.
Champs Elysees, Elysian Fields; a public park in Paris.
chanson, A song.
chapeau, A hat.
chapeaux bas, Hats off.
chateaux en Espagne, Castles in Spain.
chef de bataillon, A major.
chemin couvert, A covered way or passage.
chemin de fer (lit., iron road), A railway.
che sara, sara (It.), What will be, will be.
ci git, Here lies. (A common inscription on tombstones.)
comment vous portez vous, How are you?
compte rendu, An account rendered, a report.
comptoir, Countingroom.
comte, Count.
comtesse, Countess.
con arco (It.), With the bow.
concours, Competition for, or as for a prize.
con dolore (It.), With grief; sadly.
conoscente (It.), A connoisseur.
conseil de famille, A family council or consultation.

conseil d'etat, A council of state, a privy council.
couleur de rose, Rose color.
coup, A stroke.
coup de grace, A finishing-stroke.
coup de main, A sudden attack, enterprise, or undertaking.
coup de maitre, A master-stroke.
coup d'essai, A first attempt.
coup d'oeil, A rapid glance.
coup de pied, A kick.
coup de plume, A literary attack.
coup de soleil, A sunstroke.
coup de theatre, A theatrical effect.
creve-coeur, Deep sorrow; grief.

d'accord, Agreed; in tune.
Das geht Sie Nichts an (Ger.), That does not concern you.
de haute lutte, By a violent struggle.
dehors, Without; out of; foreign; irrelevant.
de mal en pis, From bad to worse.
demeure, Dwelling; residence.
demi-jour, Faint light.
depeche, A dispatch; a message.
dernier ressort, The last resource.
desagrement, Something disagreeable or unpleasant.
desorionte, Confused.
detour, A circuitous march.
Dieu vous garde, God protect you.
di grado in grado (It.), Step by step; gradually.
di salto (It.), By leaps.
divertissement, Amusement; sport.
douceur, A bribe.
doux yeux, Soft glances.
drap d'argent, Silver lace.
drap d'or, Gold lace.
drole, A comical fellow; a queer subject; a clown.

ebauche, A rough drawing; a sketch.
ecole de droit, Law school.
ecole de medecine, Medical school.
ecole militaire, Military school.
ecole polytechnique, Polytechnic school.
egal, Equal.
egalite, Equality.
egarement, Bewilderment.
el corazon manda las carnes (Sp.), The heart bears up the body.
eleve, Pupil.
eloge, A funeral oration.
eloignement, Estrangement.
emigre, An emigrant.
employe, A person employed; a clerk.
empressement, Ardor; zeal; interest.
en ami, As a friend.
en arriere, In the rear, behind.
en attendant, In the meantime.
en badinant, In sport, jestingly.
en bagatelle, Triflingly; contemptuously.
en echelon, In steps; like stairs.
en effet, Substantially, really, in effect.
enfant gate, A spoiled child.
enfants perdus (lit., lost children), A forlorn hope.
en flute, Carrying guns on the upper deck only.
en foule, In a crowd.
en grand, Of full size.
en grande tenue, In full official, or evening, dress.
en haut, On high; above.
en plein jour, In open day.
en retraite, In retreat.
en revanche, In return; as a compensation for.
en tasse, In a cup.
entourage, Surroundings.
en tout, In all; wholly.
entre deux feux, Between two fires.
entre deux vins (lit., between two wines), Half-drunk.
entrepot, A warehouse or magazine.
entreprenant, Enterprising.
entre-sol, A half story or mezzanine, especially one next above the ground floor.
en verite, In truth, really.
en vigueur, In force.
envoye, An envoy or messenger.
Es fehlt mir Nichts (Ger.), Nothing is the matter with me.
Es freut mich sehr (Ger.), I am very glad.
Espagnol, Spanish; a Spaniard.
esprit de corps, The spirit of honor, loyalty, or enthusiasm in an individual working for the good of a common body, society, or association, as a college class, a military company, fraternal or other association.
esprit des lois, Spirit of the laws.
Es thut mir sehr leid (Ger.), I am very sorry.
Etats-Generaux, The States General.
Ewigkeit (Ger.), Eternity.
expose, An exposition; a recital.

façon de parler, Manner of speaking; phrase, locution.
fade, Flat; stale; insipid.
faineant, Idle.
faire sans dire, To act without saying.
faire son devoir, To do one's duty.
fait accompli, A thing accomplished.
fantoccini (It.), Dramatic representations with puppets.
fauteuil, An easy chair.
faux pas, A false step; an act of indiscretion.
femme couverte, A married woman.
femme de chambre, A chambermaid.
femme de charge, A housekeeper.
femme sole, An unmarried woman.
fete, A feast, festival; holiday.
fete Dieu, The Corpus Christi festival in the Roman Catholic Church.
feu de joie, A bonfire; a firing of guns in token of joy.
feuilleton, A small leaf; a part of a newspaper devoted to light, entertaining matter.
fille de chambre, A chambermaid.
fille d'honneur, A maid of honor.
fils, Son.
fin de siecle, The end of the century.
fleur-de-lis, The flower of the lily.
fleur de terre, Even with the surface of the ground.
fra (It.), Brother; friar.
frais, Cost; expense.
franco, (It.), Free from postage.

garde du corps, A body guard.
garde-feu, A fire guard; fender.
garde royale, Royal guard.
Gehen Sie Ihres Weges (Ger.), Go your way.
gens d'armes, Military police.
gens de condition, People of rank.
gens d'eglise, The clergy; clerics.
gens de guerre, Military men.
gens de lettres, Literary people.
gens de lois, Lawyers.
gentilhomme, A gentleman.
giovine Italia (It.), Young Italy.
gitano (Sp.), A gypsy.
goutte a goutte, Drop by drop.
grace a Dieu, Thanks be to God.
grande chere et beau feu, Good cheer and a good fire; comfortable quarters.
grand merci, Many thanks.
guerra al cuchillo (Sp.), War to the knife.
guerre a mort, War to the death.
guerre a outrance, War to the uttermost.

habile, Skillful; able.
hardiesse, Boldness.
haut gout, High flavor; elegant taste.
heureusement, Happily.
historiette, A short history; a tale.
homme d'affaires, A man of business.
homme de robe, a man in civil office.
homme des lettres, A literary man.
homme d'esprit, A man of intellect; a wit.
homme d'etat, A statesman.
hors de combat, Disabled, unfit to continue contest.
hors de saison, Out of season; unseasonable.
hotel des Invalides, The military hospital in Paris.
hotel de ville, A town hall.
hotel Dieu, A hospital.
hotel garni, Furnished lodgings.
hurtar para dar por Dios (Sp.), To steal in order to give to God.

i gran dolori sono muti (It.), Great griefs are mute.
il ennuie a qui attend, Waiting is tedious.
il faut de l'argent, Money is wanting.
illicite, Unlawful.
impoli, Unpolished; rude.
impolitesse, Coarseness; rudeness.
in bianco (It.), In blank; in white.
in petto (It.), Within the breast; in reserve.

jalousie, Jealousy; A Venetian window blind.
Jardin des Plantes, The botanical garden in Paris.
je ne sais quoi, I know not what.
je n'oublierai jamais, I will never forget.
je suis pret, I am ready.
jet d'eau, A fountain; a jet of water.
jeu de mots, A play upon words; a pun.
jeu de theatre, A stage trick; clap-trap.
joli, Pretty.

lache, Lax; relaxed.
la critique est aisee, l'art est difficile, Criticism is easy, art is difficult.

laguna (It.), A moor; a fen.
laissez-nous faire, Let us act for ourselves; let us alone.
la, la, So so; indifferently.
l'argent, Silver; money.
lasciate ogni speranza, voi ch' entrate (It.), All hope abandon, ye who enter here.
Lassen Sie mich gehen (Ger.), Let me alone.
l'avenir, The future.
legerete, Lightness; levity.
le grand monarque, The grand monarch. A title applied to Louis XIV.
le grand oeuvre, The great work; the philosopher's stone.
le mot d'enigme, The key of the mystery.
l'empire des lettres, The empire of letters.
le pas, Precedence.
le point de jour, Daybreak.
le roi et l'etat, The king and the state.
le roi le veut, The king wills it.
les bras croises, The arms crossed.
lese majeste, High treason.
les larmes aux yeux, Tears in one's eyes.
l'etoile du nord, The star of the north.
le tout ensemble, The whole taken together.
lettre de cachet (Fr. Hist.), A secret letter sealed by the royal seal, containing orders for arrest and imprisonment without trial.
lettre de change, Bill of exchange.
lettre de marque, A letter of marque or reprisal.
levee, A morning reception.
liaisons dangereuses, Dangerous alliances.
libraire, A bookseller.
l'inconnu, The unknown.
lo barato es caro (Sp.), A bargain is dear.

ma foi, Upon my faith; upon my word.
maison de campagne, A country house.
maison de ville, A town house.
maitresse, Mistress.
malade, Sick.
maladie du pays, Homesickness.
mal de dents, Toothache.
mal de tete, Headache.
malgre nous, In spite of us.
mardi gras, Shrove Tuesday.
marechal, Marshal.
mariage de conscience, A private marriage.
mauvaise honte, False modesty.
mauvais gout, Bad taste.
mauvais sujet, A worthless fellow.
mise-en-scene, The setting of a dramatic piece upon the stage.
mon ami, My friend.
mon cher, My dear (fellow).
mot du guet, A watchword.

naturel, Nature; disposition; temper.
ni l'un ni l'autre, Neither the one nor the other.
nom de guerre, A war-name; an assumed title; a pseudonym.
non mi ricordo (It.), I do not remember.
Noth kennt kein Gebot (Ger.), Necessity knows no law.
Notre Dame, Our Lady, the Virgin Mary.
n'oubliez pas, Do not forget.
nous verrons, We shall see.
nouvelles, News.

oeil de boeuf, A bull's eye.
olla podrida (It.), A heterogeneous mixture.
oui-dire, Hearsay.
ouvert, Open.
ouvrier, A workman, an artisan.

padrone (It.), Master; employer; landlord.
par accord, By agreement.
par avance, In advance.
par ci, par la, Here and there.
parole d'honneur, Word of honor.
partout, Everywhere.
pas a pas, Step by step.
passager, A passenger.
passe-partout, A master key.
pasticcio (It.), Patchwork.
pave, Pavement.
per contante (It.), For cash.
per contra (It.), On the contrary.
per mese (It.), By the month.
petit coup, A small mask.
petit maitre, A little master; a fop.
peu-a-peu, Little by little; by degrees.
peu de chose, A trifle.
pezzo (It.), Piece; piece of money; a coin.
piccolo (It.), Small.
pied a terre, A temporary lodging.
pis aller, The worst or last shift.
piu (It.), More.
poco a poco (It.), Little by little.
point d'appui, Prop; point of support.
porte-chaise, A sedan.
poste restante, To remain until called for; applied to letters in a post office.
pour passer le temps, To while away the time.
preux chevalier, A brave knight.
proces verbal, A detailed statement.
proprietaire, A proprietor.

quelque chose, Something; a trifle.
qu'il soit comme il est desire, Let it be as desired.

rabat, Reduction of price.
reçu, Received; receipt.
reprise, A reprisal.
revenons a nos moutons, Let us return to our sheep: let us come back to our subject.
rire entre cuir et chair, To laugh in one's sleeve.

sanan cuchilladas, mas no malas palabras (Sp.), Wounds from a knife will heal, but not those from an evil tongue.
sans-culottes, Without breeches; a term applied to the rabble of the French Revolution.
sans façon, Without form or trouble.
sans pareil, Without equal.
sans peine, Without difficulty.
savoir-vivre, Good breeding.
savon, Soap.
sdegno d'amante poco dura (It.), A lover's anger is short-lived.
selon les regles, According to rule.
Sie sehen gut aus (Ger.), You look well.
so viel ich weiss (Ger.), As far as I know.
Sturm und Drang (Ger.), Storm and stress.

taille, Form; stature; shape.
tapis, The carpet.
terra cotta (It.), Baked earth.
tour d'expression, An idiom.
tout au contraire, On the contrary.
tout-de-suite, Immediately.
tout frais fait, All expense defrayed.
traduttori, traditori (It.), Translators are traitors.
trottoir, Sidewalk.

un bienfait n'est jamais perdu, A kindness is never lost.
vaurien, A worthless fellow.
vignette, A name given to slight engravings ornamenting books, bank notes, etc.
vivat, A shout of long live.
vive la republique, Long live the republic.
vive la bagatelle, Success to trifles.
vive l'empereur, Long live the emperor.
vive le roi, Long live the king.
voila tout, That is all.
voila une autre chose, That is quite another thing.

Was fehlt Ihnen? (Ger.), What is the matter with you?
zeitgeist (Ger.), The spirit of the age.

MODERN LANGUAGES—SOCIAL.

a l'americaine, After the American fashion.
a l'anglaise, After the English fashion.
a la carte, By the card.
a la française, After the French fashion.
a la grecque, After the Greek fashion.
a la mode, According to the custom; in the fashion.
a la parisienne, After the Parisian fashion.
al fresco (It.), To the shade; to the open air.
a l'italienne, In the Italian mode.
allemande, A kind of German dance.
amour propre, Self-love; vanity.
a rivederci (It.), Adieu until we meet again.
au contraire, On the contrary.
au fait, Well instructed; expert.
au fond, At the bottom.
auf Wiedersehen (Ger.), Till we meet again.
au gratin, With cheese.
au jus, With the natural juice.
au naturel, Cooked and served in its natural state.
au reste, As for the rest.
au revoir, Adieu until we meet again.
autre fois, Another time.
au troisieme, On the third floor.

bas bleu, A blue-stocking; a woman who seeks a reputation for learning.
beau ideal, A model of perfection.
beau monde, The fashionable world.
bechamel, Fine white sauce thickened with cream.
bete noire, A bugbear.
bienvenue, Welcome.
billet doux, A love letter.
bisque, A soup of shellfish and game.
bizarre, Odd; fantastic.

blanc mange (a delicate dessert), White jelly.
blase, Surfeited.
bon ami, Good friend.
bonbon, A sweetmeat; confectionery.
bon jour, Good day; good morning.
bon mot, A witticism.
bonne, A nurse.
bonne bouche, A dainty.
bon ton, High fashion; first class society.
bon vivant, A good fellow; a free liver.
boudoir, A small private apartment.
bouillon, Soup.

canaille, The lowest class of people; the rabble.
caramel, A burnt sugar candy.
carte blanche, Full power.
carte de visite, A small photograph upon a card.
chanson, A song.
chateau, A castle.
chauffeur, Driver of an automobile.
chef, A chief man cook.
chere amie, Dear friend.
coiffeur, A hairdresser.
coiffure, A headdress.
comme il faut, Proper; as it should be.
compagnon de voyage, A traveling companion.
con amore (It.), With affection; very earnestly.
consomme, A kind of soup.
contretemps, An awkward mishap.
conversazione (It.), A meeting for conversation.
cotillon, A lively dance.
croquette, A ball of minced meat or of other ingredients, rolled in bread crumbs and fried.
crouton, A small piece of bread fried and used in soups.
cuisine, A kitchen; cookery.

debut, First appearance.
debutante, A young lady just entering society.
decollete, Leaving the neck and shoulders uncovered; low-necked.
dejeuner a la fourchette, A meat breakfast.
demi-tasse, A small cup.
denouement, The unraveling or discovery of a plot; issue; event.
de trop, Too much, or too many; not wanted.
devoir, Duty.
diner, Dinner.
dolce far niente (It.), Sweet idleness.
domino (It.), A mask robe.
double entente, Double meaning; a play on words.

eau de cologne, Cologne water.
eau de vie, Water of life; brandy.
eclat, Splendor; brilliancy.
elite, A select body of persons.
embonpoint, Plumpness; good condition.
empressement, Eagerness; ardor.
en deshabille, In undress.
en famille, In a domestic state.
en masse, In a body.
ennui, Weariness; listlessness.
en papillote, In curl papers.
en regle, Regular; in order; according to rule.
en route, On the way.
ensemble, The whole.
en suite, In company; in a set.
entourage, Surroundings.
entree, Entry; first course.
entremets, Small and dainty dishes set between the principal ones at table.
entre nous, Between us; in confidence.

farce, Forcemeat.
fete champetre, A rural festival.
finale (It.), The closing part in any performance.
fondant, Sugar boiled and beaten to a creamy paste.
fondue, A light preparation of melted cheese.
fricassee, Chickens cut in pieces, prepared in a white sauce with accessories.

garage, A place where automobiles are stored and kept in order.
garçon, A lad; a waiter.
gateau, Cake.
gaucherie, Awkwardness.
glace, Anything iced.
gouvernante, A governess.
grande parure, grande toilette, Full dress.
grisette, Dressed in gray. (Applied to French shop girls.)
gusto (It.), Great relish.

habitue, A frequenter.
haricot, A kind of ragout; kidney bean.

hasta la primera vista (Sp.), Until the first sight; until we see each other again.
hasta luego (Sp.), Until we meet soon again.
hasta mañana (Sp.), Good-by until to-morrow.
hasta otra vez (Sp.), Until another time; until we meet again.
hauteur, Haughtiness.
haut ton, Highest fashion.
Hollandaise sauce, A rich sauce something like hot mayonnaise.
hors d'oeuvres, A kind of very light entrée.

impromptu, A prompt remark without study.
insouciance, Indifference; carelessness.

jeu d'esprit, A witticism.

le beau monde, The world of fashion; society.
lingerie, Linen goods; women's fine underwear.
litterateur, A literary man.

macedoine of vegetables, A mixture of vegetables with a white sauce.
macedoine of fruit, A kind of jelly.
ma chere, My dear.
mademoiselle, A young unmarried lady.
maitre d'hotel, A house steward.
major-domo (It.), One who has the management of a household.
mal a propos, Ill-timed.
mal de mer, Seasickness.
mariage de convenance, A marriage of convenience.
matinee, A musical or dramatic entertainment held in the daytime.
mayonnaise, A kind of salad dressing.
menage, Household.
menu, Bill of fare.
meringue, Sugar and white of an egg beaten to a sauce.
mesalliance, Marriage with one of lower station.
monsieur, Sir; master; gentleman.
morceau, Morsel.

naive, Having unaffected simplicity.
naivete, Native simplicity.
nee, Born.
neglige, A morning dress.
nom de plume, An assumed or literary name.
nonchalance, Coolness; easy indifference.
nougat, A mixture of almonds and sugar.
nuance, Shade; gradation; tint.

on dit, They say.
outre, Eccentric.

par excellence, Preëminently.
par exemple, For example.
partie carree, A party of four, two men and two women.
parvenu, A newcomer; an upstart.
passe, Worn-out.
pas seul, A single step; a dance.
pate de foies gras, Goose-liver pie.
patisserie, Pastry.
penchant, Inclination; liking.
petit, Small.
pommes de terre, Potatoes.
potage au gras, Meat soup.
pot-pourri, A medley.
pour prendre conge, To take leave.
prima donna (It.), Leading lady singer in an opera.
protege, One protected by another.
puree, A thick soup.
puree aux croutons, A thick soup with cubes of toasted bread.

quien sabe? (Sp.), Who knows?
qui vive? Who goes there?—hence on the alert.

raconteur, A relater; a teller.
ragout, A rich mixture.
raison d'etre, The reason for a thing's existence.
rechauffe, Warmed over, as food; hence, stale, insipid.
rencontre, An encounter.
rendezvous, A place of meeting.
repondez s'il vous plait (R. S. V. P.), Reply if you please.
restaurateur, One who provides.
rissoles, Small pastry, either of savory or sweets fried.
robe de chambre, A dressing gown.
robe de nuit, A night gown.
role, A part in a performance.
roue, A debauchee.
rouge, Red coloring for the skin.

salle a manger, Dining room.
sang-froid, Coolness; self-possession.

sans souci, Without a care, free and easy.
sante, To cook quickly over a hot fire with just enough butter to prevent sticking.
seance, A sitting.
sobriquet, A nickname.
soi-disant, Self-styled; pretended.
soiree, An evening party.
soubrette, On the stage a servant girl who acts in comedies the part of an intrigante.
souffle, A very light, much whipped up, pudding or omelette.
souper, Supper.

tableau vivant, The representation of a picture by persons grouped together, silent and motionless.
table d'hote, A common table for guests.
tendresse, Passion; affection.
tete-a-tete, A conversation between two parties.
timbale, A pie raised in a mold.
toujours, Always.
tout-a-fait, Entirely; wholly.
tout-a-vous, Wholly yours.
tout ensemble, The whole taken together.
trousseau, A wedding outfit.

valet de chambre, An attendant.
veloute, The stock for white sauce.
virtu (It.), Taste; art; skill.
virtuoso (It.), One skilled in matters of taste or art.
vis a vis, Opposite; facing.
vol au vents, Patties of very light puff paste filled with meat or preserves.

CLASS MOTTOES

ad astra per aspera, To the stars through difficulties.
ad vindictam tardus, ad beneficentiam velox, Slow to vengeance, swift to kindness.
age quod agis, Do what you do (*i. e.*, Mind your own affairs).
αἰὲν ἀριστεύειν, To excel always.
alta petens, Seeking higher things.
alteri sic tibi, Do to others as to yourself.
ἅμα ὀρεγόμενοι, Pulling together.
ars longa, vita brevis, Art is long, but life is short.
astra castra, numen lumen, The stars my camp, the Deity my light.
audaces fortuna juvat, Fortune favors the bold or brave.
aude aliquid dignum, Dare something worthy.
aude sapere, Dare to be wise.
aut inveniam viam, aut faciam, I will either find or make a way.

bis vivit qui bene, He lives twice who lives well.

carpe diem, Enjoy the present day; seize the opportunity.
certum pete finem, Aim at a sure end.
coelitus mihi veres, My strength is from heaven.
consilio et animis, By wisdom and courage.
consilio et prudentia, By wisdom and prudence.
crux mihi anchora, The cross my anchor.

dant animos vicis, Mutual help gives strength.
dat cura quietem, Vigilance ensures tranquillity.
Dei memor, gratus amicis, Mindful of God, grateful to friends.
delectare in Domino, To rejoice in the Lord.
Deo adjurante, non timendum, God helping, nothing need be feared.
Deo date, Give to God.
Deo duce, God being my leader.
Deo ducente, nil nocet, God guiding, nothing harms.
Deo favente, With God's favor.
Deo juvante, With God's help.
Deus major columna, God the greatest support.
Deus mihi providebit, God will provide for me.
Deus nobiscum, quis contra? God with us, who against us?
ducit amor patriae, Love of country leads.
dum spiro, spero, While I breathe, I hope.
dum vivimus, vivamus, While we live, let us live.

e pluribus unum, One from many.
esse quam videre, To be rather than to seem.
esto quod esse videris, Be what you seem.
excelsior, Higher.

facta probant, Let deeds prove.
fide et fortitudine, With faith and fortitude.
fide non armis, By faith, not by arms.
fides et justitia, Fidelity and justice.
fides non timet, Faith knows no fear.
finis coronat opus, The end crowns the work.
forsan et haec olim meminisse juvabit, Perhaps it will be pleasant hereafter to remember these things.
forti et fideli nihil difficile, To the brave and faithful nothing is difficult.

gaudeamus igitur, Therefore let us rejoice.
γνῶθι σεαυτόν, Know thyself.

hodie non cras, To-day, not to-morrow.
honesta quam splendida, Things honest rather than things splendid.

in Deo spero, In God I trust.

καιρόν γνῶθι, Know your opportunity.

laborare est orare, To labor is to pray.
labor omnia vincit, Labor conquers all things.

magna est veritas et praevalebit, Truth is mighty and will prevail.
μηδὲν ἄγαν, Not too much of anything.
medio tutissimus ibis, In a medium course you will go most safely.
memento mori, Remember death.
mens sana in corpore sano, A sound mind in a sound body.
mens sibi conscia recti, A mind conscious of rectitude.
μέτρον ἄριστον, The middle course is best.
multum in parvo, Much in little.

nemo me impune lacessit, No one wounds me with impunity.
ne plus ultra, Nothing further.
ne quid nimis, Not anything too much or too far.
nil desperandum, Never despair.
nil nisi cruce, Naught but the cross.
nisi Dominus, frustra, Unless God be with you, all your toil is in vain.
non multa, sed multum, Not many things, but much.
non nobis solum, Not for ourselves alone.
non quis, sed quid, Not who, but what.
non quo, sed quomodo, Not by whom, but in what manner.
non sibi, sed omnibus, Not for self, but for all.
non sibi, sed patriae, Not for self, but for country.
non videri, sed esse, Not to seem, but to be.
nulla dies sine linea, No day without a line; *i. e.*, without something done.
nulli secundus, Second to none.
nunc aut nunquam, Now or never.

omnia ad Dei gloriam, All things to the glory of God.
omnia cum Deo, All things with God.

palma non sine pulvere, No excellence without great labor.
patior, potior, I endure, I obtain.
per crucem ad coronam, Through the cross to a crown.
per crucem ad palmam, Through the cross to victory.
πόνῳ πόνον φέρω, I bear toil by toil.
possunt quia posse videntur, They can because they think they can.
principia, non homines, Principles, not men.
pro bono publico, For the public good.

quae nocent, docent, Things which injure, instruct.
quanti est sapere! How desirable is knowledge!
qui non proficit deficit, He who does not advance goes backward.
quod facimus bene faciamus, What we do let us do well.
quo fas et gloria ducunt, Where right and glory lead.

recta sursum, Right upwards.
respice, aspice, prospice, Look back, look forward, and look around.
respice finem, Look to the end.
revocate animos, Call back your courage.
sapere aude, Dare to be wise.
semper fidelis, Always faithful.
semper paratus, Always ready.
semper vigilans, Always watchful.
servabo fidem, I will keep faith.
spectemur agendo, Let us be judged by our actions.
spes sibi quisque, Let every one hope in himself.
σπεύδε βραδέως, Make haste slowly.
suaviter in modo, fortiter in re, Gentle in manner, but resolute in deed.

tentanda via est, A way is to be attempted.
thure et jure, By religion and justice.

vi et arte, By strength and skill.
vincit qui patitur, He conquers who endures.
vincit qui se vincit, He conquers who conquers himself.

BOOK II.

HISTORY.

HISTORY.
A Mosaic Painting in the House Reading Room, Congressional Library, Washington.
BY FREDERICK DIELMAN.

RACES OF ALL MANKIND. COURSES AND CURRENTS OF THE WORLD'S HISTORY IN GRAPHIC OUTLINE. DICTIONARY OF HISTORICAL PERSONAGES AND EVENTS. IMPORTANT WARS OF HISTORY. WARS OF THE UNITED STATES AND CANADA.

RACES OF MANKIND.

A general classification of the races of mankind, showing their distinctive features, is as follows:—

I. CAUCASIAN: Europe; north Africa; south Africa; southwest and central Asia; parts of Siberia, India, Indo-China, Malaysia; Polynesia; Australia and America; numbering about 800 millions.

Distinguishing features of these are:—
Oval or round heads.
Skin, white, but is sometimes yellow or brown.
Hair, long, straight or curly, light or dark, but never kinky; full beards.
Cheek bones, not prominent.
Teeth, straight and even.
Eyes, blue, gray, brown, black.
Language, derived from the Sanskrit.

There are several types:—

(*a*) The **Teutonic** family of 223 millions.
1. **English** and **Scotch**, or Anglo-Saxons, in Great Britain, North America, Australia, south Africa, and elsewhere, numbering 126 millions.
2. **Germans** in Germany, Austria, Switzerland, Baltic provinces of Russia, Luxemburg, North America, and elsewhere, numbering nearly 77 millions.
3. **Scandinavians** in Sweden, Denmark, Norway, numbering 10½ millions.
4. **Dutch** in the Netherlands (Holland), south Africa, and the Dutch colonies of Java, Sumatra, and Guiana, numbering about 6⅛ millions.
5. **Flemings** in Belgium and its provinces, numbering 3¾ millions.

(*b*) The **Slavs**, numbering 132 millions, and including—
1. **Great** and **Little Russians** in Russia, and **Ruthenians** in Galicia and east Hungary, numbering 93¼ millions.
2. **Poles, Kassubians,** and **Masovians** in Russian Poland, west Galicia, on the southern and eastern borders of Silesia, Posen, East and West Prussia, and Pomerania, numbering 17 millions.
3. **Czechs** or **Tchecks, Moravians, Slovaks** in Bohemia, Moravia, Silesia, and northern Hungary, and numbering 8¼ millions.
4. **Wends** in Saxony and Prussian Lusatia, numbering 100,000.
5. **Servians** and **Croats** in Servia, Croatia, Dalmatia, Saxonia, Banat, Bosnia, Montenegro, and the Herzegovina, numbering 8¼ millions.
6. **Slovenes** in south Styria, Carniola, south Carinthia, Istria, and Görz and Gradiska, numbering 1⅛ millions.
7. **Bulgarians** in Bulgaria and Eastern Roumelia, numbering 4 millions.

(*c*) **Lithuanians** and **Letts** (closely related to the Slavs) in West and East Prussia and the Baltic provinces of Russia, numbering 4 millions.

(*d*) **The Romano-Greeks,** numbering 165 millions, and including—

1. **French, Provençals,** and **Walloons** in France, west Switzerland, Belgium, eastern Canada, Algiers, etc., and numbering 46 millions.
2. **Spaniards** and **Catalans** in Spain, Central America, South America, Philippines, West Indies, and elsewhere, numbering 50 millions.
3. **Portuguese** in Portugal, Portuguese colonies, and Brazil, and numbering 20 millions.
4. **Italians** in Italy, Corsica, south Tyrol, Trieste, Istria, Dalmatia, and Görz and Gradiska, numbering 33½ millions.
5. **Rhaeto-Romanic** and **Ladins** in east Switzerland and south Tyrol, numbering 100,000.
6. **Friulians** in the Italian Friuli, and near Görz and Gradiska on the Isonzo, numbering 400,000.
7. **Roumanians** or **Daco-Roumanians** in Roumania, Bukowina, Bessarabia, Hungary and east Servia, numbering 10 millions.
8. **New Greeks** in Greece, and Turkey in Europe and Turkey in Asia, numbering 5 millions.

(*e*) **Kelts,** including the **Erse** or **Irish** in Wales, Ireland, Scotland, and the **Armoricans** or **Bretons** in Brittany and the Channel Islands, numbering 9¼ millions.

(*f*) **Albanians** in Albania, numbering 1½ millions.

(*g*) **Armenians** in Armenia, Russia, Asia Minor outside of Armenia, Persia, Europe, and the United States, numbering about 3 millions.

(*h*) **Iranians** or **New Persians** in western Asia, the Caucasus, Armenia, Kartvelia, the Kurds, Ossetes, Grusians, Georgians, Lesghians, Circassians, Afghans, and Tajiks, numbering 22 millions.

(*i*) **Hindus, Mahrattas,** etc., of the East Indies, numbering over 255 millions.

(*j*) **Semites,** distinguished by a dark or brown complexion; black and, sometimes, curly hair, thin lips and aquiline noses, numbering 30 millions.

1. **Arabs** and **Bedouins** in Arabia and northern Africa.
2. **Hebrews** or **Jews,** all over the world.
3. The few descendants of the ancient Chaldeans, Syrians, Phœnicians, Babylonians, and Assyrians, now living in southwestern Asia.
4. **Abyssinians** and **Nubians** of Abyssinia, Geez, Tigré in east Africa.

(*k*) **Hamites** or **Berbers,** distinguished by a dark or brown complexion; thin, black hair and beards; sometimes closely resembling the negro type, numbering about 20 millions.

1. **Berbers, Moors, Kabyles,** and **Tuaregs** of Morocco, the Copts of Egypt and Abyssinia, and the people of Dongola, Beja, and Saho.
2. **Gallas** and **Somalis** of east Africa.

II. MONGOLIAN: Tibet, central Asia, Mongolia, Siberia, Manchuria, Korea, Japan, Formosa, China, Indo-China; parts of Irania, Armenia, and Caucasia; most of Asia Minor; parts of Russia, Finland, Lapland, the Balkan peninsula, and Hungary; most of Malaysia, the Philippines, and Madagascar; 596 millions.

Distinguishing features of these are:—

Heads, variable, short or broad.
Skin, yellowish or light brown.
Hair, black, coarse, lusterless; scanty beards.
Cheek bones, very high.
Eyes, small, black, oblique.

(*a*) **The Finnish-Ugrian** people, closely related to the Caucasian race and numbering nearly 16 millions.

1. **The Finns,** Karelians, Livonians, Esthonians, and Kurlanders of northern Europe.
2. **Magyars** and **Szeklers** of Hungary and Transylvania.
3. **Samoyeds,** Mordvinians, Tcheremissians, Voguls, Ostyaks, Votyaks, Lapps, and Tchudi of northern Russia.

(*b*) **Mongolians** proper, numbering 42 millions, and living in northern and northeastern Asia: the Buryats, Manchus, Ainus, Tunguses, Yakuts, Kalmuks; the Bokharans, Uzbeks, Ottomans or Osmanlis, Kirghiz, Turks, Turkmen or Turcomans, Tatars or Tartars, Bashkirs, Tchuvashes, Karakalpaks, and others of central Asia.

(*c*) **South Mongols,** numbering over 450 millions, and including the Chinese, Anamites, Cochin-Chinese, Siamese, Burmese, and others.

(*d*) **The Japanese** and **Koreans,** numbering about 58 millions.

(*e*) **The Tibetans,** and other tribes in the Himalayas, numbering 7 millions.

(*f*) **The Malays** of the Malacca peninsula and of the island of Sumatra.

1. **The Tagals** of the Philippines.
2. **The Javanese,** Sundanese, Achinese, and Battas of Java and Sumatra; also the Hovas of the eastern half of Madagascar.
3. **The Dyaks,** Alfurese, and Macassars of Borneo, Celebes, and adjacent islands.

III. AMERICAN INDIANS, the aborigines of America, numbering about 40 millions, distinguished by—

Skin, yellow or copper-red.
Hair, black, straight, bristly; beardless.
Nose, strong, prominent, and aquiline.

1. **In North America** the best-known tribes are the Athabascas, Sioux, Iroquois, Crees, Dakotas, Delawares, Mohawks, Iowas, Blackfoots, Chippeways, Natchez, Hurons, Comanches, Apaches, Utahs, Pawnees, Cherokees, Moquis, etc.
2. **In Central America** the Zapotecs, Aztecs, Mayas, Otomis, etc.
3. **In South America** the Caribs, Quichuas, Chimus, Tupis, Patagonians, Araucanians, etc.

IV. THE ETHIOPIAN OR NEGRO RACE, found in Africa, Australia, and America, distinguished by—

Skin, brown or deep black.

Hair, stiff or woolly, scanty beards.
Lips, thick.
Nose, flat and broad.

1. **Negroes** proper, in north and central Africa, numbering about 70 millions: the Fulbe or Fulahs, Hausas, Sonrhai, Nyam-Nyams, Ashantis, Dahomeys, Fantis, Tibbus, Wadais, Masais, Yorubas, Mandingos, Wolofs, and others.
2. **The Bantu Nation,** numbering 27 millions, found in south and southeast Africa: Kaffirs, Zulus, Bechuanas, Swahilis, Hereros, Marutses, and others.
3. **Papuans** and **Melanesians** of New Guinea, New Caledonia, and adjacent islands; also the Negritos of the eastern portion of the Philippines.
4. **Polynesians,** Australians, Micronesians, and Maoris of Australia, New Zealand, and the Polynesian and Melanesian Islands.

VI. THE UNCLASSIFIED PEOPLES.

1. **The Basques** of the Pyrenees and the shores of the Bay of Biscay in Spain and France, numbering about 600,000, and thought to be descendants of the ancient Iberians of Spain.
2. **Dravidians** of Hindustan and the Dekkan, numbering about 68 millions, and thought to be descended from the original primitive people of India.
3. **Singhalese** of the Island of Ceylon, akin to the Dravidians, and numbering about 2 millions.
4. **The Kamtchadales,** Yukagirs, Eskimos, Tchuktchees, Aleutians, and other tribes of the Arctic regions of America and Asia.
5. **Hottentots** and **Bushmen** of southwest Africa, distinguished by yellowish-gray skin, low forehead, woolly hair; prominent cheek bones, thick lips; small, flat nose.
6. **Gipsies,** a strange, nomadic people scattered over all of Europe, western Asia, and north Africa.

Prehistoric Man.—The oldest remains of man are believed to be those discovered in the late Pliocene deposits of the Silo River in Java by Dr. Eugene Dubois in 1892. These bones in their fossil state are known scientifically as those of *Pithecanthropus erectus.* Man in this stage could walk erect, his hand was well developed and adapted to make such rude weapons as were found by Noettling in the Pliocene beds of Indo-China. His cranial capacity of 950 cubic centimeters places him little above the orang-utan with 500 cubic centimeters, and far below the highest type of civilized man with from 1,500 to 1,600 cubic centimeters. By the early Pleistocene times man had spread over nearly all of the habitable globe prior to the oft-recurring invasions of ice in the glacial periods in the northern and southern hemispheres. The theory now held by the majority of ethnologists states that men in these earlier days were all alike, and the division and subdivision into the races known to-day are the result of man's adaptation to his surroundings. What is true of the effect of climate, soil, diet, heredity, and time upon other animals of the earth is true of their effects upon man.

Southwestern Asia is regarded as an original abode of man. It is so regarded because it has been the center of the civilizations of earliest times. Certain it is that this region was a kind of privileged area or favored region within which man soonest attained his highest development.

The territory most favorable to man's development is called a culture zone. Within such areas man has attained his highest degree of civilization; outside of them man has lagged behind, as is proved by the inhabitants of nearly all of the tropical and south temperate lands. The culture zone of the eastern hemisphere lies between 25 degrees and 50 degrees N. Within it are found the homes of the races who for a definite period in the world's history have been foremost in culture and civilization: Babylonian, Egyptian, Assyrian, Persian, Indian, Chinese, Ægean, Hellenic, Phœnician, Etruscan, Roman, and later European. Within it also are found the homes of the highest forms of religion known to the world: Jewish, Buddhist, Christian, and Mohammedan. From it also have emanated the three great inflecting languages: Hamitic, Semitic, and Aryan. These sum up the highest proof of the theory that all living forms are the product of their environment. Opposed to these instances of high development are the savages of central and southern Africa, east Malaysia, New Guinea, Australasia, Melanesia, and Fuegia. To these may be added those races whose history is marked by changes from barbarism to civilization and back again to barbarism: Indo-Chinese, people of the Dekkan, central Arabians, Tibetans, Mongolians, Siberians, and the people of the table-lands and Arctic stretches in the western hemisphere. It is noticeable that in the new world the culture zone approaches the equator more nearly than in the eastern, because of the greater height of land in that region of the western world.

Population of the Earth by Races.

Race.	Countries.	Number.
Caucasian or White .	Europe, North Africa, South Africa, Asia, Australia, America	800,000,000
Mongolian or Yellow	Central Asia, China, Japan, Russia, Caucasia, Malaysia.....	596,000,000
American or Red ...	North and South America.....	40,000,000
Negro or Black .	Africa, Australia, West Indies, New Guinea, Southern U. S.	210,000,000
Total of the World.....		1,646,000,000

Proportion of the Races.

Caucasian,	48.6 per cent.
Mongolian,	36.2 per cent.
American,	2.4 per cent.
Negro,	12.8 per cent.
Total,	100.0 per cent.

COURSES AND CURRENTS
OF THE
WORLD'S HISTORY IN GRAPHIC OUTLINE.

A SURVEY OF THE RECORDED EVENTS IN THE HISTORY OF MANKIND IN ALL COUNTRIES FROM THE EARLIEST TIMES TO THE PRESENT DAY. ARRANGED SYNTHETICALLY TO SHOW THE GREAT MOVEMENTS OF EVENTS, THE ACTORS, THE TIMES AND COUNTRIES IN WHICH THEY LIVED. DESIGNED FOR COMPARISON, CONTRAST, QUICK REFERENCE, AND TO DISPLAY A CHRONOLOGICAL OUTLINE OF THE HISTORY OF ALL NATIONS.

A. PREHISTORIC TIMES.

B. PERIOD OF RECORDED EVENTS.

I. The Earliest Civilizations.

1. From the earliest known Records to the Age of Abraham (B. C. 4700-2200).
2. From the Age of Abraham to the Death of David (B. C. 2200-993).
3. From the Death of David to the Time of Cyrus (B. C. 993-558).
4. From the Time of Cyrus to the Time of Xerxes (B. C. 558-480).

II. The Greeks and Romans.

1. From the time of Xerxes to Hannibal (B. C. 480-200).
2. From Hannibal to the Death of Caesar (B. C. 200-44).
3. From the Death of Caesar to the Death of Alaric (B. C. 44-A. D. 410).

III. Middle Ages.

1. Death of Alaric to Coming of Charlemagne (410-768).
2. Coming of Charlemagne to the Death of Hildebrand (768-1085).
3. Death of Hildebrand to the Fourteenth Century (1085-1300).
4. Fourteenth Century to the Invention of Printing (1300-1450).

IV. The Renaissance.

1. From the Invention of Printing to the Reformation (1450-1517).
2. From the Reformation to the Abdication of Charles V. (1517-1556).
3. From the Abdication of Charles V. to the Assassination of Henry IV. of France (1556-1610).

V. Period of Political Unrest.

1. From the Assassination of Henry IV. to the Death of Oliver Cromwell (A. D. 1610-1658).
2. From the Death of Cromwell to the Death of Louis XIV. of France (1658-1715).
3. From the Death of Louis XIV. to the Coming of George Washington (A. D. 1715-1775).
4. The Time of Washington (1775-1799).

VI. The Age of Science, Mechanical Progress and Democracy.

1. From the Beginning of the Nineteenth Century to the Introduction of the Railway (1799-1830).
2. From the Time of Stephenson to the Election of Lincoln (1830-1860).
3. From the Election of Lincoln to the Founding of the German Empire (1860-1871).
4. From the Founding of the German Empire to the Present Day (1871-1909).

A. PREHISTORIC TIMES.

Prehistoric Times.—The period, no one knows how long, which preceded the earliest recorded events is divided into two parts:—

I. The Paleolithic, or Old Stone, Age.

II. The Neolithic, or New Stone, Age.

Behind the Paleolithic Age is a long period in the life of man when his development was so slight and so slow that he had not yet reached even that low stage which the old flint weapons indicate.

The Paleolithic, or Old Stone, Age is marked by the remains of weapons, implements, and utensils of rough flint and other stones, found over all the world. These flint remains were followed by such implements as needles, awls, daggers, fish-hooks, and heads of harpoons, made from bone, horn, and ivory, sometimes ornamented with crude drawings.

The Neolithic, or New Stone, Age followed after what the majority of students believe to have been a long interval. In this period instead of merely chipping the flint and leaving the weapon rough, men ground and polished the surfaces and edges; they made fire by striking flint and by rubbing wood; knew the arts of pottery and weaving; created memorials such as barrows, cairns, cromlechs, and dolmens, to their dead; and built such dwellings as those of the lake-dwellers of Switzerland, northern Italy, and southern Germany.

The relics of these periods tell us nothing of the story of human life; present to us no names, no persons, no events; define no periods of time. This Prehistoric time has ended at widely different periods in different countries. While man emerged from its darkness in the valleys of the Nile and of the Tigris and Euphrates about 4800 B.C., it was not until the discovery in 1492 A.D., by Columbus, that the prehistoric period of America ended. There are a few remote points in the world where truly historic or written records are yet unknown.

B. PERIOD OF RECORDED EVENTS.

B. C.

From the earliest known records to the time of Abraham, B. C. 4700-2200.

Dates given for the earliest events in the history of the world can be only approximate. Since the explorations in Egypt after 1890, and the discoveries made in the Temple of Abydos by the world-famous Egyptologists, M. Amelineau, M. J. de Morgan, Professor Petrie, and Professor Quibell, our knowledge of dates is much more exact. Those given in the table are upon the authority of the archæologists mentioned.

For 250 years many have been guided in the earliest dates of history by what is known as Usher's system of chronology, which places the date of the Creation of the World at 4004 B.C. Of the value of this system to the student of the present day and in the light of the advances of the past 250 years, no further commentary need be made than to give, in his own words, the opinion of such an eminent authority as Mr. E. A. Wallis Budge, M.A., Litt.D., D.Lit., Keeper of Egyptian and Assyrian Antiquities in the British Museum. In his recently published "History of Egypt" he says in Vol. I., page 4, note: "James Usher was born in Dublin on January 4, 1580, and died on March 20, 1656, at Reigate in Surrey. He was a contemporary of Camden, Selden, Sir Thomas Bodley, and Sir Thomas Cotton. Between 1650 and 1654 he published 'Annales Veteris et Novi Testamenti,' in which he propounded an impossible chronology for the Bible. This system was unfortunately inserted in many editions of the Bible with most disastrous results, for thereby it gained an authority which it should never have enjoyed. The system is worthless and has proved a stumbling-block to many honest inquirers into Bible history."

Authorities for the earlier dates in the first period of history are as follows:—

1. W. M. Flinders Petrie, D.C.L., LL.D., Edwards Professor of Egyptology in University College, London, Member of the Imperial German Archæological Institute, Member of the Society of Modern Antiquities.
2. E. A. Wallis Budge, M.A., Lit.D., D.Lit., Keeper of Egyptian and Assyrian Antiquities in the British Museum, Author of "History of Egypt."
3. Robert William Rogers, Ph.D. (Leipzig), D.D., LL.D., F.R.G.S., Professor in Drew Theological Seminary, Madison, N. J.; Author of "History of Babylonia and Assyria."
4. The Rev. Archibald Henry Sayce, Professor of Assyriology at Oxford; Author of "Egypt of the Hebrews and Herodotus," "The Early History of the Hebrews."
5. J. N. Larned, "Seventy Centuries of the Life of Mankind."
6. Ploetz: "Epitome of Universal History."

Breasted's "History of Egypt" gives these earlier dates very much later than any of the other authorities.

Egypt.

PREDYNASTIC AGE.

1. Archaic age of primitive civilization.
2. Period of small and local kingdoms.
3. Two kingdoms formed:
   (*a*) Nile Valley to the Delta, and known as "The South"
   (*b*) The Delta, known as "The North"

In the tombs of Abydos were found a list of the kings of the North and of the South, but nothing more is known of them than their names.

DYNASTIC AGE.

4800 First dynasty of kings, about 4777-4514 B. C. (Petrie).
Menes, the first king of the first dynasty, consolidated the two kingdoms into one; king of the North and South, first lord of all Egypt.
Menes founded Memphis.
Tombs at Naggadah, near Coptos, and one near Abydos are filled with objects bearing the name of Menes.
4700 **Athothis**, second king, built at Memphis, and wrote medical works.
4650 **Uenefes**, fourth king, built pyramids near Kokhome, perhaps at Sakkara.
Great plague raged in Egypt.
4600 **Semempses**, seventh king, credited with many wonders in his reign.
Pestilence in Egypt.
Second dynasty of Egyptian kings, about 4514-4212 B. C., according to Petrie.
4500 **Boethos**, first king of the second dynasty.
Chasm opened near Bubastis and killed many.
4400 **Kaiechos**, second king, founded bull worship at Memphis.

Babylonia.

DYNASTY OF THE KENGI.

Babylonia inhabited by a Sumerian people well advanced in civilization.
En-shag-Kush-ana, lord of the Kengi (old name of early Babylonians), reigned at Erech, the capital, and was patesi or chief priest to the great god En-lil at the temple of Nippur. His reign was some time prior to 4500 B. C.
The Sumerians or Kengi conquered Enne-Ugun, the king of the Kish to the north, and took rich spoil.
Babylon was composed for the next 2,000 years of a varying number of more or less independent states. Nippur, Lagash, Ur, Eridu, Erech, and Larsa in the south, Sippar, Agade, Kish, and Babylon in the north, were the prominent early cities of Babylon.

DYNASTY OF SHIRPURLA (SEMITES).

The kingdom of Shirpurla, with its chief city, Sungir (the Shinar of Genesis xi.), was in full power and dignity in 4500 B. C.
Urukagina, the first king of Shirpurla as yet known, built and restored temples, and supplied his city with water by canal.
Lugal-shuggur, a successor of Urukagina.
Gursar, a successor of Lugal-shuggur.
Gunidu, son of Gursar.
Ur-Nina, son of Gunidu, built temples with lumber brought from Sinai, about 4466 B. C.
Akurgal, son of Ur-Nina, about whom no records are yet found.
E-anna-tum, son of Akurgal, fought a bloody battle against the Gishban and commemorated his victory over them by erecting the famous stele of the Vultures (now in the Louvre) in the temple of Nun-Sungir.

B. C.	Egypt.	Babylonia.
4400	**Apis** worshiped at Memphis; Mnevis, at Heliopolis; and the sacred goat at Mendes.	Ur and Uruk freed from the Semitic invader by the preceding battle.
	Binothris, third king, legalizes female succession to the throne.	En-anna-tuma I., the brother of E-anna-tum.
4200	Third dynasty, about 4212 to 3998 B. C. (according to Petrie).	Entemena, son of the preceding, of whom there is a silver vase with an inscription, found at Nippur.
	Sesokhris, seventh king, said to have been over eight feet in height.	En-anna-tuma II., son of the preceding, about 4100 B. C., is the last of the line of Shirpurla until its revival, 300 years later.
	Libyans revolted in reign of **Nekheropes,** but submitted through fear caused by increase of the moon (probably after an eclipse).	DYNASTY OF ERECH.
4150	**Tosorthros,** second king, a great physician, and built the first houses of hewn stone.	**Ukush,** a patesi of Gishban, was the founder of this line.
	Copper tools for workmen introduced.	
4100	Workmen organized into groups and trades.	
	Stone architecture begun.	
4000	Fourth dynasty, about 3998 to 3721 B. C., according to Petrie.	**Lugal-zaggisi,** son of Ukush, made Erech his capital of the now united Babylon, and Nippur remained the religious center. About 4000 B. C. extended his empire to the Mediterranean Sea. Claims to rule from the Persian Gulf to the Lake of Van.
	Sneferu, first king, built a temple and pyramid at Medum, forty miles south of Cairo.	Kings ruling at Lagash since about 4400
		Nippur the religious center of Babylon.
		Rulers pay homage to the god of Nippur and ascribe their victories to him, hence the value of the excavations at Nippur.
3900	**Khufu** or **Kheofs,** second king, built the pyramid at Gizeh.	**Lugal-Kisalsi,** son of the preceding, was king when the line was obscured by that of Agade.
	Alabaster quarry opened near Tel-el-Amarna.	Lagash loses its prominence.
	Temple and pyramid built at Gizeh by **Khafra,** third king.	Agade becomes the center of a northern kingdom.
3800	Temple and pyramid built at Gizeh by **Menkaura,** fourth king.	DYNASTY OF AGADE.
	Fifth dynasty, about 3721 to 3503, according to Petrie.	**Shargani-shar-ali,** known as **Sargon I.,** about 3800 B. C., conquered Dur-il Dilmun, an island in the Persian Gulf; the Elamites; extended his empire into northern Syria, and procured cedar from Lebanon. He built the great temple of Ekur to the god Bel in Nippur, and the temple of Eulbar to the goddess Anunit in Agade.
	Pyramid building followed by kings of this dynasty.	
3700	**Ptah-hotep,** author of a book of moral precepts, lived in this dynasty.	
	Sixth dynasty, about 3503 to about 3335 B. C., according to Petrie.	**Sargon I.** gives this city a commanding prominence.
3500	**Meryra,** third king, the most vigorous of all prior to the twelfth dynasty.	A period of peace during which the arts and civilization flourished.
	Pyramids built at Sakkara by kings of this dynasty.	Lugal-ushumgal, a vassal of Sargon, sat on the throne at Shirpurla Lagash, in 3800 B. C.
	Merenra, fourth of this line. Mummy of king found in pyramid at Sakkara (1880).	**Naram-Sin,** son of Sargon I., ruled about 3750 B. C. He invaded Apirak, killed King Rish-Adad, and carried the people into captivity.
	Seventh to tenth dynasties extend from about 3322 to 2778 B. C., according to Petrie.	Invasion of Magan, near Sinai; temples built at Nippur, Agade, and Sippar; outer wall, Nimit-Marduk, at Nippur begun.
3300	Lists of kings during this period are very imperfect.	**Binganishar-ali,** son of Naram-Sin, the last of the line of Sargon known to us.
	Canal cut at Asyut by **Thety I.,** and irrigation installed.	
3100	Thebans in a highly independent state and war frequently with the royal forces.	
3000	Seat of government changed from Memphis to Herakleopolis.	**Gudea,** a chief of Agade, builds palaces at Tel-lo.
		Statues of **Gudea,** of colossal size, made from dolorite brought from Arabia; still exist.
2800	Eleventh dynasty from 2985 to about 2778 (Petrie).	A dynasty at Ur rules over Sumer or northern Babylonia, and Accad or southern Babylonia.
	Twelfth dynasty from about 2778 to 2565.	**Urgur and Dungi,** the two kings of Ur known in this dynasty, build, restore, and enlarge temples in many of the religious centers.
	Amenemhat, first king, one of the most vigorous administrators in all Egyptian history.	
	Extensive building conducted in all parts of Egypt.	
2750	Nubia conquered by Egyptians: foreign expedition by **Usertesen I.**; temple at Heliopolis built.	
	Sinaitic peninsula again ruled by Egypt.	
	Temple of Osiris at Abydos built by **Usertesen II.**	
2650	**Usertesen III.** built pyramids, and made a canal on the Nile to aid in his expedition against Ethiopia.	
	A hymn to **Usertesen III.** was found at Kahun on a papyrus.	
2600	Pyramid at Hawara by **Amenemhat III.**	
	Mines of copper and malachite in the Wady Maghara; and quarries of Turrah near Cairo worked.	
	Part of ancient Lake Moeris reclaimed by **Amenemhat III.**	
	Thirteenth dynasty, a period of obscurity, from 2565 to 2112 B. C.	
2500		
2400	**Neferhotep** repaired the temple at Abydos.	**Isin** takes a commanding place among Babylonian cities and is the home of a dynasty of six kings.
	Statutes of **Ra-Kha-nefer** found on the island of Arqo near the Third Cataract.	
2300		**Hammurabbi** makes Babylon the leading city, which held power during eight distinct dynasties, until 538 B. C.
		Hammurabbi perfects the canal system and lays foundations for the future greatness of Babylon.
		Kingdom of Larsa, the modern Senkereh, founded.

From the Time of Abraham to the Time of David, 2200-993? B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	TIGRIS-EUPHRATES VALLEY.	SYRIA. Phœnicians and Hebrews.	OTHER COUNTRIES.	GREECE.
2200	Astronomy known in Chaldæa. **Nur-Adad** and his son and successor, **Sin-iddin**, built temples in Ur. **Sin-iddin** built a temple to the sun-god at Larsa and dug a canal between the Tigris and the Shatten-Nil Canal.	Fourteenth dynasty, an obscure period, from 2112 to 1928 B.C.	**An-ma-an**, the first king of the second Babylonian dynasty, 2150. **Chedorlaomer** or **Kudur-Lagamar**, the Elamite, leads in an Elamite invasion. Peace endures after the reign of **Hammurabbi** until the end of the second dynasty. **Nimrod** or **Belus** rules, 2200. Nineveh built by Asshur.	Groups of Arameans clans from Arabian desert wandered northward and settled in Palestine and Syria. Combinations for defense among nomadic clans mark first union among Hebrews. Abraham leaves Ur of the Chaldees.	Chedor-Laomer, of Elam, 2131.	Aryan tribes settled in Greece, 2200. Crete, leader of states in power; great temple at Knossos.
2100		**Hyksos** or **Shepherd Kings** invade and conquer Egypt, (2098-1659 B. C.). First Hyksos settlement, 2084. Dynasty XVI. of Shepherds, 2084-1659.	Nineveh capital under **Ninus**, 2070. **Ninus** conquers Babylonians, Armenians, Persians, Bactrians, and all Asia Minor, 2059.		Kassite invasion of Babylonia, 2058.	Uranus arrives in Greece, 2042.
2000	Geometry used in Egypt about this date. Beginning of art in Cyprus and Troy. Gold used as money in Egypt. Phonetic writing in China.		**Semiramis**, mother of Ninyas, rules and beautifies Babylon; invades Libya, Ethiopia, and India, 2000-1975. **Ninyas** kills his mother, 1965.		Hittites in Babylonia, 1937. Birth of Sebekkhu, 1917. Asiatics visit Khnumhotep II. 1901.	Inachus, king of the Argives, 1910.
1900		HYKSOS KINGS Salatis, 1826-1807. Bnôn, 1807-1763.	**Aralius** rules, 1897.			
1800			The Third Babylonian or Kassite dynasty (1783-1207) begins. The Kassites, an invading people, lower the standard and retard the development of Babylonian civilization. **Gandish**, the first king of the Kassite dynasty, 1783.	Phœnicia conquered by Egypt, 1800.	Apakhnan, 1763-1726 Apophis, 1726-1665.	Arcadians emigrate to Italy, 1710. Pelasgi hold the Peloponnesus. Civilization begins in Mycæne.
1700	"The Observations of Bel" written. An ancient book from which a large part of our knowledge of ancient astronomy is derived.	Hyksos kings driven out of Egypt by **Aahmes** or **Amosis**, 1684-1659.		Hittites oppose further Egyptian conquests in Palestine.	Iannas, 1665-1615. Midian migration, 1650. Aseth, 1615-1566.	
1600	Egyptian art at its height. Chronology of the Arundelian marbles begun, 1587.	Thothmes III., 1591-1565, conquers Palestine, Phœnicia, and Syria. The Egyptians invade Habesh, Arabia, Phœnicia, and Syria, 1524-1488.		Joseph in Egypt. Jacob with his sons migrates to Egypt, 1550? Hebrew tribes settle in Goshen. Period of Hebrew oppression by Pharaohs begins in Egypt.	War in Syria, 1523. Northern India is conquered by the Aryans, 1505-1000.	Golden age of Mycæne, 1600. Areopagus established, 1504. Deluge of Deucation, 1504.
1500	Tomb of Rekhmara built.	Egyptus reigns and gives name to country, 1485. Amenhotep II. Amenophis IV. Sethos reigns in Egypt, 1438-1388.	**Agum-Kakrime**, the seventh Kassite king, builder and restorer of temples. **Belochus** rules, 1446.	Tyre sends out first colonies from Phœnicia, Byblos, Sidon, Sarepta, and Aradus, leading cities of Phœnicia, 1500.	Warsin Syria, 1483-1462. KINGS OF MITANI. Artatama, 1475-50. Shutarna, 1450-1420. Dushratta, 1420-1390.	Hellenes hold the Peloponnesus; Dorians, Æolians, Ionians, and Achæans, 1500. First Olympic games at Elis, 1450.
1400	Tel-el Amarna tablets written.	Nineteenth dynasty 1388-1269. Sethos makes first canal from the Red Sea to the Nile, 1333. Sethos or Sesostris builds hypostyle hall.	Assyria becomes independent, 1320. **Shalmaneser I.** founds Calah, 1320.	Tel-el-Amarna letters ask aid by viceroy of Jerusalem from King Amenophis IV. of Egypt against the Hebrews, 1400.	HITTITE KINGS. Seplel, 1370. Merasar, 1340. War in Syria, 1318. Mutallu, 1310.	Corinth founded, 1384.
		Rameses II. The Greek **Sesostris**, regarded by some as the oppressor of the Hebrews, 1388-1322.				

From the Time of Abraham to the Death of David, 2200-993? B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	TIGRIS-EUPHRATES VALLEY.	SYRIA. Phœnicians and Hebrews.	OTHER COUNTRIES.	GREECE.
1400	Egyptian art begins to assume Asiatic form, due to conquest and influx of foreigners. Probable date of first library in Egypt.	Accession of Meneptah or Merenptah, the supposed Pharoah of the oppression, 1322-1302.		Exodus from land of Egypt, 1320? Ten Commandments given at Sinai. Hebrews mentioned in inscription at Thebes by Meneptah.		Eleusinian mysteries instituted, 1396. Isthmian games, 1326.
1300	Bucklers used.	Dynasty Twenty, 1269-1244. **Rameses or Ramessu III.**, king, 1269-1244. Egyptians invade Habesh, Arabia, Palestine, Syria.		**Joshua** leads Hebrews into Canaan, 1250?	Hittite treaty, 1275. Philistine migration, 1250. Lydia ruled by the Attyadae to 1229? Sandonide or Heraclide dynasty of Lydia, 1229-724.	
1200	Gate of Lions built at Mycenæ. Mariner's compass said to have been invented in China, 1115.	Decay of the empire under later Rameses.	**Tiglath-pileser I.** (1115-1105), real founder of Assyrian Empire. Conquers from Bagdad and Babylon to the Mediterranean.	Coast cities under tribute to Tiglath-pileser I.	Chow dynasty begins with Woo Wang.	Trojan War 1194-1184. Dorian migration. Return of the Heraclidae, 1103. Period of degradation in Greece.
1100	Dictionary of the Chinese language compiled.	High Priests take throne, 1100. Twenty-first or Tanite dynasty, 1091-961. King Hirhor or Smendes, first king. Tanis the seat of government. Egyptians lose supremacy over Ethiopia, where the kingdom of Napata or Meroe was formed, 1090?	Assyrian Empire in state of decay for two centuries, beginning 1100.	Philistines subjugated land west of the Jordan, 1070. **Saul** first Hebrew king, 1055?-1033? **David** king of Judah, 1033?; of all Israel, 1026?-993? Jewish kingdom at its acme of power. Jerusalem taken from the Jebusites and made royal city of the Jews, 1025.	Powerful empire of Bactria formed 1100? Feudal system developed in China.	Formation of the Hellenic states begins about 1100. Codrus, last king of Athens, 1068? Medon, son of Codrus, first life archon, 1067?
1000	Destruction of Grecian art completed by barbarians. Temple of Hera at Olympia built. Asbestos cloth is made by Egyptians. The loadstone obtained from Asia by the Greeks.			Absalom's revolt and death. Voyages of the Phœnicians to Ophir, Gades and Britain.		Ionians settle in Asia Minor, 1000-900? Birth of Homer (?) c. 1000. Before this date a system of writing existed in Greece. The Greeks adopt the Phœnician alphabet.

From the Death of David to the Time of Cyrus, 993?-558 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	TIGRIS-EUPHRATES VALLEY.	SYRIA. Hebrews.	OTHER COUNTRIES.	GREECE.
993?	The "Iliad" and "Odyssey" produced. New Tyre, on an island, and Old Tyre joined by earth fillings under Hiram, 949, the friend of Solomon. Temple of Jehovah built by Solomon. New palace at Jerusalem. Ivory brought to Solomon from Tarshish. Commerce of the Hebrews very extensive. Assyrian architecture, building, sculpture, and literature at its height after 930.	Twenty-second Dynasty, 961-940. **Shishak**, 961-940. Invades Judea and plunders the Temple at Jerusalem, 949.	Brilliant epoch in Assyrian history begins, 930-626. Babylonians constantly at war with Assyrians down to 710.	**Solomon**, 993?-953? Rehoboam, king, 953? Rebellion against Rehoboam; afterwards two Hebrew kingdoms: Judah, loyal to Rehoboam, and Israel, the revolting tribes, under Jeroboam (953-927). Abijah, king of Judah (932?-929), takes Bethel and other cities from Jeroboam. Asa, king of Judah, 929-873. Nadab, king of Israel (927-925), slain. Baasha, king of Israel, 925. Elah, son of Baasha, slain by Zimri.	Zoroaster or Zarathushtra lived about 1000? in Persia. Ethbaal or Ithobalus, high priest of Astarte, murdered Phales, last of the line of Hiram, and becomes king of Tyre, 917?	Rhodians begin navigation laws, 916.
900	Beginning of civilization in Mexico and Central America.		Assyrians invade Persia in the ninth century.	Omri, king of Israel, 899. Ahab, king of Israel (877?-853). Contest of the prophets with the idolaters.	The Phœnicians become subject to the Assyrians, 850.	Constitution and laws of Lycurgus 820?

From the Death of David to the Time of Cyrus, 993-558 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	TIGRIS-EUPHRATES VALLEY.	SYRIA. Hebrews.	OTHER COUNTRIES.	GREECE.
900	Breastplates invented by Jason. Art of alphabet writing by Phœnicians, 900.		**Asshur-natzirpal** or **Sardanapalus** reigns in Assyria, 886-858. Shalmaneser II., king of Assyria (858-823), wins a victory over Ahab, king of Israel, and allies, at Karkar. Later subjugates Jehu. Rammannirari, the king of Assyria (810-787), captures Damascus and makes Samaria and Philistia tributary. Sammuramit, or Semiramis, was his queen.	Famine in Israel; predicted by Elijah. Miracles of Elisha. Jehoshaphat, king of Judah, 873-848. Ahaziah, king of Israel (853-851). Jehoram, king of Judah (848-844), marries Athaliah. Joram, king of Israel (851-843), assassinated by Jehu. Ahaziah, king of Judah (844-843), slain by Jehu. Jehu, king of Israel (843-815), slays Jezebel and sons and grandsons of Ahab. Athaliah, queen of Judah, 843-837. Joash, king of Judah (837-797), purchases retreat of Hazael, king of Syria.	Carthage founded, 850. Decline of Phœnician power in Tyre.	Pheidon, eminent sculptor, flourishes. 900.
800	Solar eclipses recorded in Assyria, 763. Extension of Greek colonies in the Mediterranean and Black seas, 750. The Chaldeans first observe an eclipse of the moon at Babylon, 721. Roman calendar of ten months reformed and made twelve, 710. Priesthood, augurs, and vestals instituted in Rome, 710.	Twenty-third dynasty, 800. Sebacon invades Egypt, 735. Twenty-fifth dynasty, 730. Ethiopians, under Shabak, conquer Egypt, which they govern for 58 years, 730. Sennacherib's invasion, 705.	Tiglath-pileser II. or Pul (745-727) subjects Babylonia to Assyria, 730. Shalmaneser IV. (727-722) suppresses revolt of Phœnician cities and Israel. Sargon (722-705) destroys the kingdom of Israel, conquers Samaria; subdues revolts in Armenia, Media, and Babylonia, uniting the latter to Assyria; receives tribute from Arabia, Egypt, and Cyprus. Sennacherib (705-681) subdues revolts in Babylonia; unsuccessful in war with Egypt and in the siege of Jerusalem, (700); loses his supremacy over Syria.	Amaziah, king of Judah (797-792), murdered at the capture of Jerusalem by the Israelites. Uzziah, king of Judah, 792-740. Judah becomes tributary to Assyria to escape Damascus and Israel. Jeroboam II., king of Israel (790-749), gives Israel a brief revival of power. Israel made an Assyrian province by Pul, 741. Hoshea, last king of Israel, defeated and captured by Shalmaneser IV., 734. Hezekiah, king of Judah (728-697), allied with Egypt to evade tribute to Assyria. Israel destroyed by Sargon of Assyria, 722.	Romulus, king of Rome, 753. Caeninians defeated; first triumphal procession in Rome, 748. Rome taken by the Sabines; Sabines incorporated with the Romans 747. Romulus ordains Circensian games, 732. Romulus said to have been killed, 716. Numa Pompilius, king of Rome, 715-673. Media made subject to Assyria, 710. Deioces reigns as subordinate prince in Media, 708.	First Olympiad, 776. Until this date the archons of Athens were elected for life; now chosen for 10 years only, 752. First Messenian War, 743-723. Syracuse founded by Archias, 734. Sybaris founded, 721. Tarentum founded by Phalanthus of Sparta, 708.
700	Samians (Greek colonists) discover Spain, 700. The library of Asshur-bani-pal founded at Nineveh, 630. First Athenian code of laws promulgated, 621. Thales calculates eclipses, 610. Highest development of Assyrian art. Capitol at Rome founded, 615.	Assyrians, under Esarhaddon invade Egypt and abolish Ethiopian rule there. Egypt divided into 20 governments, the ruler of each bearing the title of king, but to a certain extent under Necho, ruler at Memphis, 672. Tirhakah rallies Ethiopians, and expels Assyrians, 670. Asshur-bani-pal expels Tirhakah, 667. Egypt for 20 years devastated by Assyrians and Ethiopians. Twenty-sixth dynasty, 653-525. Psamethik, son of Necho, unites the Egyptians and founds a strong monarchy and rules over it at Sais. Resists successfully Assyrians and Ethiopians alike, 653-610. Carries on wars with Syria, Phœnicia, and Palestine.	Esarhaddon (681-668) suppresses revolt of Babylonia, reconquers Syria, Phœnicia, Cyprus, Judah, and part of Arabia; in 672 takes Egypt from the Ethiopians. Asshur-bani-pal or Sardanapalus (668-626) defends Egypt against Ethiopia, but loses it in revolt of Psamethik (653), confirms power in Syria, Arabia, Cilicia, and Babylonia, conquers Elam and receives tribute from Lydia. Medes revolt, 640. Irruption of the Scythian tribes, 632. Sarakos (626-608?) struggles desperately with Cyaxares of Media and Nabopolassar or Nabu-ablutzar (governor of Babylon since 625). After a long siege Nineveh is taken and destroyed. Assyrian Empire ends, 606.	Sennacherib besieges Jerusalem, in vain 700. Manasseh, king of Judah (697-642), introduced the worship of Astarte at the temple and indulged in heathen practices in opposition to the prophets; carried captive to Babylon, but restored. Josiah, king of Judah (640-609). Reaction against idolatry. Jeremiah the prophet. Judah ravaged by the Scythians, 632. Battle of Megiddo; Josiah is slain and Judah becomes subject to Egypt, 609. Phœnicia subject to Egypt, 608. On defeat of Necho at Carchemish, 624. Judah and Phœnicia become subject to Babylonia, 605.	Tullus Hostilius, king of Rome (673-641), destroys Alba Longa, transfers its inhabitants to Rome. Wars with Veii and Fidenæ. Jimmu Tenno, first mikado of Japan, 660-585. Phraortes rules Media (655-633); makes it independent of Assyria (640); conquers Persia, Armenia, and other countries. Ancus Marcius king of Rome, 641-616. Cyaxares reigns in Media (633-593); in alliance with Babylon after a desperate struggle ends Assyrian Empire, 626-608. Ostia, at mouth of the Tiber, built, 627. Gautama, founder of Buddhism, born, 624. Tarquinius Priscus, king of Rome, 616-578. War between Lydians and Medes, 610.	After this date there were nine archons chosen each year, serving one year only, 682. Sea fight, the first known to history, between Corinthians and inhabitants of the island of Corcyra, 664. Greek settlement at Naucratis in Egypt, 660. Byzantium built, 657. Second Messenian War, 645-628. Solon, 638-558. Insurrection of Cylon, 624? Draco gives Athens a severe code of written laws, 621.

From the Death of David to the Time of Cyrus, 993?-558 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	TIGRIS-EUPHRATES VALLEY.	SYRIA. Hebrews.	OTHER COUNTRIES.	GREECE.
700	Attempt to cut a canal from the Nile to the Red Sea. Phœnicians circumnavigate Africa for Necho. Hanging gardens of Babylon. Bridge over Euphrates.	Necho the son of Psamethik, king (610-595). Undertakes expeditions to Syria. Defeats Josiah, king of Judah, at Megiddo (609). Defeated at Carchemish; loses Asiatic conquests.	Assyria becomes a Median province, 606. Nebuchadnezzar defeats Necho near Carchemish, 605. Nebuchadnezzar is king of Babylon, 604. Babylon takes lead with Media.			
600	Approximate date of the school of philosophy in Greece. Thales teaches the spherical form of the earth, 600. Æsop's *Fables*.	Psamethik II. king, 595-589. Fruitless expedition against Ethiopia. Hophra or Apries, king, 589-570. Egypt devastated by Nebuchadnezzar 579-572. Aahmes or Amasis, king (570-526), makes alliance with Greece (569). Erects many fine buildings.	Jerusalem destroyed by the Babylonians, under Nebuchadnezzar, 586. Nebuchadnezzar besieges Tyre, 586-573. Cyrus, king of Persia, 558-529. Median supremacy passes to Persia.	Attempt of Judah to revolt suppressed, Jehoiakim slain, and many captives carried to Babylon, 597. With aid of Egypt, Judah again tries to gain independence. Jerusalem destroyed and the inhabitants, including the prophet Ezekiel, carried captive to Babylon, 586. The Babylonian Captivity, 586-537.	Media the most powerful monarchy of Asia, 600. First census of the Roman state taken, 566. Astyages, last king of the Medes, 593-558. Servius Tullius, king of Rome, 578-534. Wars with Veii.	First sacred war, 600-590. Reforms of Solon, 594. Seven sages of Greece—Thales, Solon, Bias, Chilo, Cleobulus, Periander, and Pittacus, 590. Pisistratus rules in Athens, 560. Emigration of Athenian nobles to Thracian Chersonese.

From the Time of Cyrus to the Time of Xerxes, 558-480 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	EGYPT.	PERSIAN EMPIRE.	ROME.	GREECE AND MACEDONIA.	OTHER COUNTRIES.
558	Buddhism introduced into India, 557. First sundial at Sparta erected about 545. Temple of Artemis at Ephesus built. Callimachus, eminent Greek architect, flourished. The air supposed by Anaximenes of Miletus to be a self-existent deity, the first cause of everything, 530. Phamenides of Elea said to have discovered the identity of morning and evening star, 520-460. Couriers common in Persia, 510. Laws of ostracism established, 510. Temple of Capitoline Jupiter dedicated, 509. Temple of Zeus at Ægina begun, about 508.	Pythagorus visits Egypt, 536. Egypt made tributary by Cyrus, 535. Psamethik III., king, defeated by Cambyses at Pelusium. Egypt becomes a Persian province, 525.	Persian Empire, including Persia, Assyria, and Media, founded by Cyrus, 558. Conquest of Lydia by Cyrus, 554?. Cyrus captures Babylon, 538. Belshazzar, 538. Cyrus ends captivity of Jews, 537. Building of new temple begun at Jerusalem, 535. Death of Cyrus and accession of Cambyses, 529. Cambyses (529-522) conquers Egypt and makes it a Persian province, 525. Darius I., king of Persia, 521-484. Haggai, 520. Zechariah, 519. Darius conquers India, 518. Dedication of the second temple at Jerusalem, 516? Invasion of Europe by Darius, 513. Darius crosses the Bosporus on bridge of boats and marches to the Danube, 508.	Tarquin the Proud, 534. The Tarquins vanquished, 509. Republic consuls, 509. Capitol finished, 507. Dictators 501.	Pisistratus dies, after a long rule at Athens, 527. The Pisistratidæ expelled from Athens; democracy established, 510. Republic under Cleisthenes, 509. Sparta at war with Athens, 506.	Confucius (551-478) born in China, in the reign of Sing-wang. Lydia united with the Persian Empire, 549. Death of Buddha, the reformer of India, 543. Cyrus makes war on the Babylonians and adds the Babylonian Empire to the Persian Empire, 539-538. Phœnicia becomes subject to Persia, 538. Cambyses of Persia (529-522) conquers Egypt by the battle of Pelusium and Egypt becomes a Persian province, 525. Darius, the son of Hystaspes, king of Persia, 521-485.
500	Behistun rock containing records of David's works, 500. All the arts flourish in Greece, 480-330. Temple at Agrigentum begun, 480. Daphnis and Mycon, Greek architects, flourish about 450. Xerxes builds a bridge of boats across the Hellespont.	Egypt revolts; subdued by Xerxes, 487.	Athens provokes wrath of Darius, 500. Ionians revolt and burn Sardes, 500. Mardonius of Persia invades Greece. Conquers Thrace and Macedonia, 493. Darius sends an army of 500,000 into Greece, (490). Defeated at Marathon. Egypt revolts; subdued by Xerxes, 487 Death of Darius; Xerxes accedes, 484.	Tribunes chosen, 494. First secession of Plebs, 494. League formed between Romans and Latins, 493. Coriolanus is banished. With the Volscians he besieges Rome. Retires at his mother's rebuke and wife's entreaties, 491. The first agrarian laws, 486.	Graeco-Persian wars, 500-449. The first Persian expedition against Greece, 493 (492?). Persian fleet nearly destroyed by a storm near the promontory of Athos, and army suffers defeat. The second Persian expedition against Greece, 490. Miltiades defeats the Persians at Marathon.	Darius quells a revolt of the Ionian Greeks who had captured and burned Sardes, 500-494. Battle of Lake Regillus: Latins defeated, 496.

From the Time of Xerxes to the Time of Hannibal, 480-200 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	GREECE AND MACEDONIA.	ROME.	OTHER COUNTRIES.
480		Third Persian expedition against Greece under Xerxes, 480. Thessalians and Bœotians submit to Persians, 480. Battle of Thermopylæ, 480. Indecisive sea fight at Artemisium, 480. Battle of Salamis, 480. Fourth Persian expedition against Greece, 479.		Persian War against Greece, 480. War of the Carthaginians, allied with Selinus, against the other Greek cities in Sicily, 480. Carthaginian army under Hamilcar defeated by Gelon of Syracuse and Theron of Agrigentum, 480.
	Hanno of Carthage explores west Africa to Cape Palmas, 470.	Battle of Platææ, 479. War of Greeks against Persians, 479-449. Battle of Mycale, 479. State offices of Athens opened equally to the four classes, 478 ?	Gens Fabia withdraw from Rome, 479, and are destroyed by the Etruscans at Cremera, 477. Tribune of the people murdered for calling the two consuls to account, 473.	Carthaginians buy peace to save their cities of Panormus, Solœis, and Motye, 480.
	Temple of Theseus built at Athens.	Reduction of Byzantium, 478. Themistocles rebuilds Athens, 478.	The lex Publilia or Publilian law places election of the plebeian magistrates in the hands of the comitia tributa, 471.	Confucius died, 478.
	Long walls of Athens completed, 457-455.	Hellenic confederacy with Athens at its head formed, 477 ? Rivalry of Themistocles and Cimon, 477.	Plague throughout Italy, 463.	Artaxerxes I., Longimanus, king of Persia, 465-424.
	Phidias, greatest Grecian sculptor, flourished, 442.	Cimon leader at Athens, 467 ? Battle of the Eurymedon, 465. Age of Pericles, 465-429.	Civil discord in Rome renewed, 460. Tribunes of the people increased from five to ten, 457.	Egyptian revolt against Persia suppressed, 462-455. Beginning of the decay of the Persian Empire. Revolts of soldiers. Hiring of mercenaries, 455.
	The battering ram first employed by Pericles, 441.	Third Messenian War, 464-456. War of the Spartans and Bœotians against Athens, 457-445. Armistice between Athens and Sparta for five years, 451 ?	Cincinnatus, dictator, 457.	
	The Parthenon restored, 438.	Death of Cimon, 451 ? Battle of Salamis in Cyprus, 449.	Decemvirs appointed, who drew up ten tables of laws, 451.	
	Meton sets up a sundial at Athens, 433.	Thirty years' peace between Athens and Sparta, 445. Athens controlled by Pericles, 444-429.	Two more tables added, making the twelve tables, 450. Consulate and tribunate re-established, 450.	
		Peloponnesian War, 431-404. Five invasions of Attica by the Peloponnesians, 431-425.	Laws of the consuls Valerius and Horatius established, 448.	
	Statue of Nike erected.	Plague at Athens, 430. Death of Pericles, 429. Mytilene destroyed by Athens, 427. Surrender of Platææ, 427. Battle of Amphipolis and death of Brasidas, 422.	Two quæstors appointed, 447. Canulcian law legalizing marriage between patricians and plebeians, 445. Military tribunes with consular power created and open to the plebeians, 443.	
		Peace of Nicias, 421. Battle of Mantinea, 418. Capture of Melos by Athenians, 416. Athenian expedition against Syracuse under Alcibiades, Nicias, and Lamachus.	Office of censor, a patrician office, created, 444. Spurius Mælius, a rich plebeian, accused of aiming at royal power, slain, 439.	Xerxes II. of Persia ruled one month and a half and was killed by his brother Sogdianus, who reigned six and a half months and was slain by his brother, who became king Darius II., 424-405.
		Last nine years of the Peloponnesian War, known as the Decelean War, 413-404. Peloponnesian fleet defeated near Miletus, 412. Democratic constitution at Athens overthrown by the oligarchs, 411. Alcibiades recalled, 411. Sea fight at Abydos, 411.		Egyptians revolt against Persia and secure their independence for sixty years, 414-354.
		Battle of Cyzicus, Peloponnesian fleet annihilated, 410. Battle of Notium, 407. Battle of Arginusæ, 406. Battle of Ægospotami, 405. Surrender of Athens and end of war, 404. Government at Athens by Thirty Tyrants, 404-403. Moderate democracy restored, 403. Retreat of the 10,000 under Xenophon, 401-400.	War with the Etruscans and siege of Veii, 405-396.	Wars between Carthage and Greeks in Sicily, 409-339. Artaxerxes II., king of Persia, 405-362. Cyrus attacks his brother Artaxerxes II. of Persia and is slain at Cunaxa, 401.
400	The Erechtheum completed. Hippocrates makes the first great advances in the medical science, 400.	Socrates executed at Athens, 399. War between Spartans and Persians, 399-394. Corinthian War against Sparta, 395-387. Battle of Cnidus, 394. Battle of Coronea, 394. Peace of Antalcidas, 387.	Latium invaded by Gauls, 391. Battle of the Allia, 390. Rome taken and plundered by the Gauls, 390. Civil contests renewed, 390.	Retreat of the Greek 10,000 after Cunaxa, under Xenophon. 400. Conquest of Rome by the Senones under Brennus, 390.
	Mencius, Chinese teacher, flourished, 372-288.	War between Thebes and Sparta, 379-362. Battle of Leuctra, 371. Thebans, under Epaminondas, invade Peloponnesus, 370, again, 369, and a third time, 367. Battle of Cynoscephalæ, 364. Fourth invasion of the Peloponnesus by Thebans, 362. Battle of Mantinea, 362. Rise of Macedonian power under Philip, 359-336.	Licinian rogations proposed to relieve debtors, 376; passed in 367. L. Sextus Lateranus, the first plebeian consul, 366. Prætor, a new patrician magistrate, installed, 366. Curule ædile added, 366. Patricians ceased to exist as a specially privileged class.	
	Temple of Athene Alea erected at Tegea.	Social war of the Athenian league against Athens, 357-355. Second Holy War against the Phocians, 355-346.	Four wars with the Gauls, 367-349. Wars with revolted Latin cities, 362-358.	Artaxerxes III., king of Persia, 362-338.

From the Time of Xerxes to the Time of Hannibal, 480-200 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	GREECE AND MACEDONIA.	ROME.	OTHER COUNTRIES.
350	Lyceum in Attica built, 342.	Demosthenes delivered first Philippic, 351.	Wars with Etruscan cities, 358-351.	Carthage gains supremacy over the western half of Sicily, 339.
		Philip destroyed Olynthus, 348.	Treaty of commerce between Rome and Carthage, 348.	Artaxerxes III. of Persia, poisoned and followed by Arses, 338-336.
		Peace of Philocrates, 346.	War with the Volsci and Aurunci, 350-345.	Arses, king of Persia, murdered to make room for Darius III., Codomannus, 336-330.
	Art of burning colors into wood or ivory said to have been invented by Gausias of Sicyon, 335.	Philip of Macedon elected to the Amphictyonic Council in place of the Phocians, 346.	First war with the Samnites, 343-341.	New Tyre, island city of Phoenicia, captured by Alexander the Great, 332.
		League of Hellenic States under Athens against Philip, 343.	Great Latin War, 340-338.	The Jews subject to Alexander the Great, 332-323.
		Third Holy War, against Amphissa, 339-338.	Dissolution of the Latin League, 338.	Darius III. of Persia murdered by the satrap Bessus while fleeing from Alexander the Great after Gaugamela, 331.
	Aristotle, the philosopher, writes. Science of plants originated by Theophrastus, 340.	Philip defeats the allied Thebans and Athenians at Chaeronea, 338.		Destruction of the Persian Empire, 330.
		Peace of Demades, 338.		The Punjab invaded by Alexander the Great, 327.
		Philip leader of the Grecian forces against Persia, 338.		Greek kings of Bactria included part of India until driven out by Scythian invaders.
		Murder of Philip, 336.		Ptolemæus I., Soter, king of Egypt, 323-283; capital at Alexandria.
	Aristotle founds the first private library, 334.	Accession of Alexander the Great, 336-323.		Jews subject to the Ptolemies, 323-198.
		Alexander leads Greeks against Persia, 334.		Phoenicia a part of the Graeco-Macedonian monarchy until 323.
	Pytheas of Massilia, explores Thule, the North Sea, Scandinavia. Nearchus of Macedonia sails from the Indus to the Red Sea, 330.	Battle of the Granicus, 334.		Phoenicia a part of the kingdom of the Seleucidae, 323.
		Battle of Issus, 333.		Chandra-gupta founds the empire of Magadha in India, 317-291.
		Alexander conquers Syria, Phoenicia, Tyre, Palestine, and part of Egypt; founds Alexandria.		Wars between Carthage and the Greeks, 317-275.
		Persian army defeated at Gaugamela or Arbela, 331.		Seleucus I. Nicator founds the kingdom of Syria, and rules from Seleucia on the Tigris, 312-281.
		Alexander in Persia, 331-328.		Carthaginians defeat Agathocles, tyrant of Syracuse, 306.
		Alexander invades India to the Hyphasis after the battle of Hydaspes, 326.		Island of Rhodes an independent state after the battle of Ipsus, 301.
	Expedition of Alexander the Great to Iran, Turan, India, 329-325.	Alexander's fleet and army go down the Indus, 325.	Second Samnite War, 326-304.	Pontus recognized as an independent state by the victors at Ipsus, 301.
		Nearchus discovers entrance to Persian Gulf, 325.	Caudine Pass, 321.	
		Alexander returns to Persis and thence to Susa, 324.	Etruscans take part against Rome, 312.	
	Sugar found in India by Nearchus, admiral of Alexander, 325.	Death of Alexander at Babylon, 323.	Battle of Vadimonian Lake, 310.	
	Appian Way begun by Appius Claudius, 312.	Wars of the Diadochi (successors of Alexander), 323-276.	Romans first use a fleet, 309.	
		Lamian War, 323-322.	Battle of Bovianum, 305.	
		Demetrius Poliorcetes takes Athens several times, 307-295.		
300	Art of painting introduced into Rome from Etruria by Quintus Fabius.	Aetolian League formed, 281.	Third Samnite War, 298-290.	Ptolemæus II., Philadelphus, king of Egypt, 285-247, and husband of Arsinoe, founds the museum of the Alexandrine library.
		Achæan League renewed, 280.	Battle of Sentinum, 295.	
	Euclid does the first real work in geometry, 290.	Invasion of the Gauls, 278.	Hortensian law passed, 286?	Kingdom of Pergamon, with capital at Pergamus in Mysia, founded by Philetærus (283-263), who was governor under Lysimachus.
	Egyptians explore the east coast of Africa, 290?		War between Rome and an Italian League, 285-282.	
	Library at Alexandria founded, 284; partly destroyed by Cæsar, 47.		War with Tarentum, 282-272.	Senones exterminated by Romans; defeat of the Boii on the Vadimonian Lake, 283.
			Pyrrhus defeats Romans at Heraclea, 280.	Antiochus I., Soter, second king of Syria, 281-261.
	Earliest known lighthouse built was the Pharos of Alexandria, 280.		Battle of Asculum, 279.	Confederacy of the Galatians in Asia Minor, composed of the three tribes, Trocmi, Tectasages, and Tolistoboii, founded in 278.
	Colossus of Rhodes, 280.		Battle of Beneventum, 275.	Macedonia and Greece ravaged by a Brennus, 278.
	Aristarchus promulgates theory that the fixed stars and the sun are immovable; determines distances of the sun and moon from the earth, 280.	Antigonus Gonatus, king of Macedonia, 277-239.	First Punic War, 264-241.	Carthaginians compel Pyrrhus to leave Sicily, 276, and defeat him at sea on his way home, 276.
			Agrigentum taken by Romans, 262.	Bithynia, with capital at Nicomedia, founded by Nicomedes, 277-250?
	Silver first coined in Rome, 269.		Romans win first naval victory at Mylæ, 260.	Açoka, grandson of Chandragupta, reigns over Magadha, 263-226.
	The air-gun first made by Ctesibius of Alexandria, 250.		Naval victory for the Romans at Ecnomus, 256.	Açoka, the friend of Buddhism.
	Recipes for preparation of medicine first put into book form by Mantias, 250.		Regulus captured at Tunes, 255.	Eumenes I., king of Pergamon, 263-241.
		Last attempt of Greece to throw off the Macedonian yoke, 263-260.	Panormus taken by Romans, 254.	Antiochus II., Theos, third king of Syria, 261-246.
				End of the Chow dynasty, 255.
				Tsin dynasty in China, 255-206.

From the Time of Xerxes to the Time of Hannibal, 480-200 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	GREECE AND MACEDONIA.	ROME.	OTHER COUNTRIES.
300		Sicyon, freed from its tyrants by Aratus (251), joined the Achæan League. Corinth, freed by Aratus from Macedonian control, joined the Achæan League, 243. Sparta in the hands of a wealthy oligarchy, 241. Agis IV. of Sparta assassinated for attempting reforms, 241? Demetrius II., king of Macedonia, 239-229. Cleomenes III. of Sparta (235?-221) introduced reforms, conquered Argos and Mantinea; and waged successful war against the Achæan League, 227-221. Antigonus Doson, king of Macedonia, 229-220.	Hasdrubal defeated at Panormus, 251. Carthaginians win the sea fight at Drepanum, 249. Hamilcar conducts successful campaign in southern Sicily for six years, 248-242. Roman victory at the Ægatian Islands, 241.	Parthians revolted from Persia under Arsaces, who became king, 250(?)-247. Parthians conquered all lands between the Euphrates and the Indus, and thus kept the Greeks and Indians apart, 250. Zeilas, king of Bithynia, 250-228.
	Temple of Janus closed, 235.	Sparta defeated in the battle of Sellasia, 221.	War with the Illyrians, 229-228. Rome supreme in the Adriatic Sea, 228.	Ptolemæus III., Euergetes, king of Egypt, made a temporary conquest of Caria, Lycia, Cilicia, and Cyprus, 247-221.
		War between the Achæan and Ætolian League, 220-217.	Cisalpine Gaul subdued, 225-222. Gauls defeated at Telamon, 225. Second Punic War, 218-201.	Arsaces I., king of Parthia, succeeded by Arsaces II. (247-214), who fully secures Parthian independence.
	Great Chinese wall built, 211-204. Eratosthenes determines the circumference of the earth and the sun, 210. Literature and art of painting encouraged.	Philip V. (III.), king of Macedonia (221-179), formed an alliance with Hannibal against the Ætolian League, supported by the Romans, and brought on the First Macedonian War, 214-205. First Macedonian War, 214-205.	Hannibal of Carthage crosses the Alps, 218. Hannibal defeats the Romans at the Trebia, 218. Roman army severely defeated at Lake Trasimene, 217. Quintus Fabius Maximus dictator, 217. Battle of Cannæ, the greatest defeat the Romans ever suffered, 216. Carthage forms alliance with Philip V. of Macedon, 216. Hannibal defeated at Nola, 215. First Macedonian War, 214-205. Syracuse taken and plundered, 212. Both Scipios defeated and slain by the Carthaginian army in Spain, 212. Capua surrendered to Rome, 211. Hasdrubal slain at Sena Gallica, 207.	Seleucus II., fourth king of Syria, 246-226. Attalus I., king of Pergamon, 241-197. Cisalpine Gaul leagued against Rome, 238. Prusias I., king of Bithynia, with whom Hannibal sought refuge, 228-183. Seleucus III., fifth king of Syria, 226-222. Antiochus III., the Great, 222-187. Ptolemæus IV., Philopater (221-205). The monarchical power began to decline. Arsaces III. of Parthia (214-196) resisted Antiochus the Great. Che-wang-te (246-210) built the Chinese wall, extended the empire to the sea; and defeated the Mongols. Great destruction of books by his order, 213.
		Philopœmen, "the last of the Greeks," led the Achæan League against the Spartans and defeated them at Mantinea, 206.	Scipio consul, 205, carried the war into Africa, 204, and won the battle of Zama, 202. Humiliating peace for Carthage, 201.	Dynasties of East and West Han, 206 B. C.-221 A. D. Brilliant period of Chinese history. Ptolemæus V., Epiphanes (205-181), Egypt grew more dependent upon Rome.

From the Time of Hannibal to the Death of Julius Caesar. 200-44 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
200	Archimedes discovers his famous laws: "Law of the Lever" and "Law of Archimedes."	Second Macedonian War, 200-197. Philip driven from Central Greece, 200. Romans joined by Ætolians and Achæans, 199. Flamininus subdues Epirus and defeats Philip at Cynoscephalæ, 197. Romans declare the Greek states free and independent, 197. War with Antiochus III. of Syria, 192-189. Antiochus defeated at Magnesia, 190. Death of Scipio Africanus, 183.	Achæan League joins Romans against Philip V., 200. Second Macedonian War, 200-197. Jews subject to the Seleucid kings of Syria, 198-167.
	Attalus, king of Pergamus, makes books with leaves of vellum. Discovery of parchment; until this time papyrus was used.	Higher offices in Rome become more and more the privilege of the nobility and wealthy, 180. Third Macedonian War, 171-168. Destruction of the Macedonian monarchy, 168. Perseus defeated in the battle of Pydna, 168. Third Punic War, 149-146. Capture and destruction of Carthage, 146. Fourth Macedonian War, 148-146. Achæan War, 146. Battle of Leucopetra, 146. Corinth destroyed by order of the Roman senate, 146.	Eumenes II., king of Pergamon (197-159), founder of the library of Pergamus. Philip V. forced by the defeat at Cynoscephalae to abandon the hegemony of Greece, 197. Romans supported their friends in Greece and often arbitrated between them, 197.
	Nicomedes invents the curve known in mathematics as the *conchoid*. First library in Rome.	Dictatorship practically disappears, 146. Civil War with the Numantines, 143-133. Numantia taken and destroyed, 133. First Servile War, 135-132. Civil disturbances under the Gracchi, 133-121. Slave trade in Rome extensive, 133. Gracchus proposes that the Licinian agrarian law be re-enacted, 133. Tiberius Gracchus tries to secure election to the tribunate in violation of the constitution; he, with 300 followers, killed by the optimates under P. Scipio Nasica, 133.	Boii power broken at the battle of Mutina and northern Italy rapidly Romanized, 193. Philopœmen forced the Spartans to re-enter the Achæan League, 192. Antiochus III., the Great, of Syria, defeated by the Romans at Magnesia, 190. Deinocrates incited the Messinians to revolt and Philopœmen slain, 183.
	Eudoxus of Cyzicus attempts to circumnavigate Africa.	Public lands partly divided under the Licinian law, 133-129. Plebeian consuls chosen, 132. Pergamus becomes a Roman province called Asia, 129. Balearic Isles subjected to Rome, 123.	Death of Hannibal, by suicide, at Bithynia Power of the Achæan League declined, 183-146. Greece made a Roman province, 147.

From the Time of Hannibal to the Death of Julius Caesar. 200-44 B. C.

B. C.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
200	Astronomy first placed on a scientific basis by Hipparchus.	C. Sempronius Gracchus elected tribune of the people against the will of the senate, 123, and again in 122. Gracchus distributes grain to the people at the expense of the state, 122. Civil strife in Rome between followers of Gracchus and the optimates, 121. Gracchus and Fulvius slain, 121. War against the Cimbri and Teutones, 113-101. Great German migration to the west and south, 113. Jugurthine War, 111-105. Cimbri cross the Rhine, 109. Helvetians press into Gaul, 107. Marius consul five times in succession, 104-101. The Cimbri cross the Pyrenees, 104. The Cimbri, Teutones, and Helvetians invade Italy, 102. Battle of Aquæ Sextiæ, 102. Cimbri annihilated at the battle of Vercellæ, 101. Second Servile War, 103-99.	Prusias II., king of Bithynia, 183-149. Mithridates I. founded the empire of the Parthians, 174-136, and ruled Media, Susiana, Persia, Babylonia, and Bactria. Attalus II., king of Pergamon, 159-138. Nicomedes II., king of Bithynia, 149-91. Romans in the Achæan War at Leucopetra, 146. Corinth captured and destroyed by the Romans, 146. All the Greek cantons were subject to the Roman governor of Macedonia, 146. (Peloponnesus and central Greece did not become the Roman province of Achaia till about the year 27.) Attalus III., king of Pergamon, 138-133, gave his kingdom and treasures to the Romans.
	Hero of Alexandria invents and improves formula for area of triangle.		
100		Marius consul for the sixth time, 100. Reforms by Drusus led to his assassination, 91. Marsian or Social War in Italy, 91-88. Citizenship extended to the Latins and other Italians, 90, and afterwards extended to all Italians who applied for it, 89. First Mithridatic War, 88-84. Civil War between Sulla and Marius, 88-82. Athens conquered by Sulla, 86. Marius consul for the seventh time, 86. Battle of Chæronea, 86; battle of Orchomenus, 85. Sulla defeats the younger Marius and has himself appointed dictator in Rome for an unlimited time, 82. Reign of terror in Rome; 10,000 slaves made citizens (Cornelians), 82. Second Mithridatic War, 83-81.	Strife between Jews and the Pharisees and Sadducees after 100. Sujin (97-30), tenth Mikado of Japan, introduced marked reforms. Nicomedes III., king of Bithynia, 91-75, bequeathed his kingdom to Rome. Phraates III. (Arsaces XII.), king of Parthia, 69-60. Pompeius called to help the Pharisees against the Jews, makes the Jews tributary to Rome, 63. Suevi, under Ariovistus, defeated by Cæsar, 58. Wars of Vikramaditya, native prince of India, against Scythians, 57. Cæsar makes two expeditions to Britain, 55 and 54. Cæsar's two expeditions cross the Rhine, 55 and 53. Phraates III. in war with Rome, 54.
	The Tabularium built, 78.	War against Sertorius, 80-72. Sulla voluntarily resigns dictatorship, 79. War against the pirates, 78-67. Third Mithridatic War, 74-64. Revolt of Spartans, 73. War of the Gladiators and Third Servile War, 73-71.	
	Cicero's orations, 60.	Conspiracy of Catiline, 64-62.	
	Scaurus builds in Rome a theater to accommodate 30,000 spectators, 58.	First speech of Cicero against Catiline, 63. Catiline defeated and slain at Pistoria, 62. First Triumvirate—Pompey, Cæsar, and Crassus, 60.	
	Coal known in Britain, 55.	Pompey governs Spain, 60. Cæsar consul, 59; conquest of Gaul by Cæsar, 58-51.	
	Pompey the Great erects first stone theater in Rome.	Crassus killed by the Parthians, 53. Pompey consul without a colleague, and given dictatorial power, 52 Civil War, 49-46.	
	Latin dictionary compiled by Varro, 50.	Cæsar crosses the Rubicon, 49. Cæsar dictator of Rome for 11 days, and afterward consul, 49.	
	Destruction of Alexandrian library, 47.	Battle of Pharsalus; Cæsar defeats Pompey, 48. Pompey murdered in Egypt, 48.	
	Julius Cæsar reforms the calendar, making each year equal to 365¼ days, 46.	Cæsar consul for five years, tribune for life, 48. Alexandrine War under Cæsar, 48-47. War against Pharnaces, son of Mithridates, closed by Cæsar in a five days' campaign (Veni, vidi, vici), 47. Fought in Africa against the followers of Pompey, 47-46. Battle of Thapsus, 46. War against the sons of Pompey, 46-45. Battle of Munda, 45. Cæsar consul for ten years (45); dictator and censor for life, 44.	

From the Death of Caesar to the Death of Alaric, B. C. 44-A. D. 410.

B. C.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
44	Romans extend geographical knowledge and commerce to Central Asia, 30.	Assassination of Cæsar in the senate, 44. Second Triumvirate—Antonius, Octavius, and Lepidus, formed, 43. Cicero murdered; several hundred senators and 2,000 equites outlawed. War between the triumviri and the republican party led by Brutus and Cassius, 43-42. Battle of Philippi; suicide of Cassius and Brutus, 42. Antonius ravaged Asia and Syria; and followed Cleopatra to Egypt, 42. Civil War of Perusia between Octavius and Lepidus against Marcus Antonius and Fulvia, 41-40 Octavius supreme ruler of Italy, 40; and administered affairs in the West; Antonius in the East; and Lepidus in Africa. The triumviri pacify Pompeius by making him ruler over Sicily, Sardinia, probably Corsica, and the Peloponnesus.	Herod the Great recognized by the Roman Senate as a dependent king of the Jews, 40.

From the Death of Caesar to the Death of Alaric, B. C. 44-A. D. 410.

B. C.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
44	Pantheon at Rome built, 27. Dances introduced on the Roman stage, 22. Livy writes, 20. Lake of Constance discovered by Tiberius; Brenner Pass, by Drusus, 15. Theater of Marcellus, begun by Julius Cæsar, completed by Augustus, 13.	Sicilian War between the triumvirs and Sextus Pompeius, 38-36. War between Octavianus and Antonius, 31-30. Antonius and Cleopatra defeated at Actium, 31. Octavianus makes Egypt a Roman province after the suicide of Antonius and Cleopatra, 30. Roman Empire established; Octavianus, the first emperor, as Cæsar Octavianus Augustus, 31 B.C. -14 A.D. Spain conquered, 19. Birth of Christ, four years before our era, 4? B.C. Temple of Janus closed, about 4 B. C. Seneca, 3 B. C.-65 A. D.	Parthia ruled by ten monarchs from 37 B. C. to 107 A. D. Antonius makes war on Phrates IV., of Parthia, 36. Drusus conquers Rætia and Noricum, 15. Expeditions of Drusus from the Rhine, 12-9.
A. D.			
1	Strabo writes on geography, 5. Diodorus writes on history, 5. Philo of Alexandria, philosopher, flourishes, 20. Birth of Pliny, the Elder, 23. Persius, the poet, born, 34. Electricity used as medicine, 43. Bricks introduced into England by the Romans, 44. Magnifying power of convex glasses and concave mirrors, and the prismatic colors produced by angular glass, mentioned by Seneca, 50.	Forces of Quintilius Varus annihilated by the Germans under Arminius in the Teutoburg Forest, 9? Pannonia (southwestern part of Hungary) a Roman province, 10. Tiberius (Claudius Nero), second emperor of Rome, 14-37. Germanicus led three expeditions against the Germans, 14-16; recalled and sent to Armenia, 17-19. Caligula, third emperor of Rome, 37-41. Claudius or Tiberius Claudius Nero, 41-54. Conquest of Britain commenced (43) under command of A. Plautius and T. Flavius Vespasianus; southern part of Britain became a Roman province. Following provinces incorporated: In Africa, Tingitana, Mauretania, Mauretania Cæsariensis (42); in the east, Lycia (43), Judæa (44), Thracia (46). Claudius adopts L. Domitius and appoints him his successor; L. Domitius takes name of "Nero," at his adoption. Claudius poisoned by Agrippina, 54. Nero (54-68) proclaimed imperator by the prætorians; guided during the first five years of his reign by the præfectus prætorio Burrus and his teacher, Seneca. Law against informers. Nero poisoned his step-brother Britannicus (55), had Agrippina put to death (59); drove away his wife Octavia, whom he afterwards executed (62), and married Poppæa Sabina. War with Parthians and Armenians, 58-63. King Tiridates of Armenia forced to acknowledge supremacy of Rome. Suetonius Paulinus suppresses revolt in Britain, 61. Large part of Rome destroyed by fire (64); Christians and Jews accused by Nero of setting fire to the city. First persecution of the Christians, 64. Rome rebuilt on a large scale, 64, Conspiracy of Piso discovered (Seneca), 65. Revolt in Gaul (C. Julius Vindex) and in Hispania citerior, where the governor, Sulpicius Galba, was proclaimed and acknowledged imperator, 68. Nero flees and commits suicide on estate of one of his freedmen, near Rome, 68. Galba, 68-69. Otho, 69. Vitellius (69) proclaimed imperator by the legions on the Rhine; defeats Otho near Cremona, and enters Rome. The three Flavian emperors, 69-96. Vespasianus (69-79); proclaimed imperator first in Alexandria, then in Palestine, where he was directing war against the Jews, in revolt since 66; transferred military command to his son, Titus, and went to Rome, via Alexandria. Discipline in the army and order in the finances restored. Senate reorganized. Revolt of Batavians under Julius (Claudius?) Civilis, 69-71; suppressed by Cerealis. Jerusalem captured by Titus, 70. Triumphal arch of Titus in Rome. Amphitheatrum Flavium (Colosseum) erected. Agricola prepares for complete subjugation of Britain, 78. Titus, 79-81. Informers punished. Eruption of Vesuvius, 79; Herculaneum and Pompeii buried. Death (79) of the elder Plinius, leader of the Roman fleet at Misenum. Rome visited by fire and plague, 80. Domitianus (81-96), planned campaign against the Chatti (83). Roman boundary wall between the Rhine and the Danube begun. Agricola conducts successful campaigns in Britain (81-84), extending Roman power as far as Scotland; recalled by the jealous Domitian. Unsuccessful wars against the Dacians, 86-90; peace of Decebalus purchased by a yearly tribute. Death of Agricola, 93. Persecution of philosophers, Jews, and Christians, 93. Domitianus murdered by the freedman Stephanus, 96. Nerva and his adopted family, 96-192. Nerva (Marcus Cocceius Nerva) (96-98), a senator, raised to the throne by the murderers of Domitian; recalled exiles; reduced taxes; repealed the law of treason; adopted Trajan, whom he appointed his successor. Trajan (98-117), born in Roman colony of Italica in Spain; first person not an Italian to occupy the throne of the Cæsars.	Judæa becomes a part of the Roman provinces of Syria, 6. Expeditions of Germanicus to avenge Teutoburg massacre, 14, 15 and 16. Galilæa independent of Rome until 32. Peræa independent of Rome until 33. Judæa a dependent kingdom under Herod Agrippa I., 41-44. Judæa a Roman province in 44. Claudius reduces Britain south of the Avon and Severn, 43. Boadicea, Queen of the Iceni, defeated by the Romans, 58. Revolt of the Jews against Rome, 66-70. Jerusalem destroyed by Romans under Titus, 70. Keiko (71-130), twelfth mikado of Japan. Indo-Scythians defeated at the battle of Kahror by the Guptas and allies, 78. Agricola builds a wall from Firth of Forth to the Firth of Clyde, 78-84. Agricola carries Roman war into Scotland, 78-85. Armenia is lost to Parthia, 90.
	Glass used in making windows, 79. The monumental type of triumphal arch, invented by the Romans, first given in perfection in the Arch of Titus, 81. Library of Apellicon sent to Rome from Athens by Sulla, 88. Agricola, a Roman, sails around Britain, 84. Ulpian library of Trajan established in the Forum of Trajan, 98. The forum of Trajan built, 98-117.		

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A. D.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
100	Plutarch writes his "Lives." 100. Trajan's column, 115. Ptolemy writes a treatise on optics. 100 Detrianus, Greek architect, restored Pantheon, built mausoleum of Hadrian, bridge of St. Angelo. Aelian bridge built by Hadrian, 136. Temple of Venus and Roma; represents height of Roman art during Hadrian's reign. Samian ware, a glossy, red enamel made by the Romans, 150. Claudius Ptolemy (Egyyt.) completes his geography and atlas. Temple of Jupiter built at Baalbec. The places and distances of the planets discovered by Ptolemy, 161.	First war against the Dacians (101-102), caused by Trajan's refusal to pay the tribute promised by Domitian. Trajan captured fortress of the king Decebalus, forcing him to conclude peace and cede a part of his territory. Second war against the Dacians (105-107); stone bridge across the Danube built at Turnu Severinu by Trajan, who, crossing the river, conquered the Dacians. Decebalus committed suicide. Imposing games at Rome, in which it is said that 10,000 gladiators appeared. Dacia (eastern Hungary, Moldau, Wallachia, Transylvania) a Roman province. Many colonists (from whom the present Roumanians are descended) settle in Dacia. Judæa, to the northern end of the Red Sea, and the region east and south of Damascus taken possession of by the governor of Syria (105) and made the Roman province of Arabia (Arabia Petræa). Column of Trajan at Rome completed, 113. Wars of Trajan with the Parthians (114-116); Chosroës driven from Armenia. Mesopotamia, Armenia, Assyria (including Babylonia), made Roman provinces. Seleucia and Ctesiphon on the Tigris conquered by Trajan, who appointed a king over the Parthians. Death of Trajan at Selinus (Trajanopolis) in Cilicia. Hadrian (117-138); abandoned new provinces of Assyria, Armenia, and Mesopotamia; restored peace in Mœsia; began his progress through all the Roman provinces with a visit to Gaul, 121. Magnificent buildings in Rome, including the Athenæum. Wall of defense against Picts and Scots built in Britain. The jurist Salvius Julianus begins collection of edicts of the prætors (edictum perpetuum). Revolt of the Jews (132-135) because of the establishment of the colony of Ælia Capitolina. While ill, Hadrian adopted L. Ælius Verus, and appointed him Cæsar, who died first. Hadrian then adopted T. Aurelius Antoninus on condition that the latter should adopt his nephew, M. Annius Verus, under the name of Marcus Aurelius, and L. Commodus Verus, son of the deceased Cæsar, Ælius Verus. Antoninus Pius (Titus Aurelius Antoninus Pius), 138-161. Marcus Aurelius (161-180); a Stoic philosopher; reigned until 169 in common with Lucius Verus, his brother by adoption. War against the Parthians (162-165), under command of L. Verus, whose legatees burned Seleucia and Ctesiphon, conquered Artaxata, and appointed a king in Armenia. Part of Mesopotamia again became a Roman province. Famine and plague in Italy, 166. War with the Marcommani and Quadi, 166-180. Conquest of the rebel Avidius Cassius in Syria, 175. Triumph in Rome, 176. Death of Marcus Aurelius in Vindobona (Vienna), 180. Commodus (180-192); purchased peace of the Germans by a tribute; intrusted the government largely to the præfectus prætorio; murdered by his intimates. Imperators appointed mainly by the soldiers, 193-284. Pertinax murdered by the prætorians, 193. Didius Julianus placed on throne by the prætorians, 193. Septimius Severus (193-211) proclaimed by Illyrian legions, recognized by the senate, and maintained himself against Clodius Albinus in Gaul and Pescennius Niger in the East, the other pretenders. Through the jurist Papinianus, improvements were made in the administration of justice. Successful campaigns in Mesopotamia.	Splendid period of Palmyra, 105. Northern Korea conquered by the Chinese, 109. Hadrian's wall built from the Tyne to the Solway Firth, 121. Chosroës (Arsaces XXV.), king of Parthia (107-121), tries to retake Armenia and is punished by Romans under Trajan. Rebellion of Jews against Romans; great slaughter and dispersal of survivors, 132-135. Vologeses III. (Arsaces XXVII.) of Parthia (149-192), involved in war with M. Aurelius of Rome, is completely subdued. Legendary date of introduction of Christianity into Britain by the conversion of Lucius, king of the Trinobantes, 180. Parthia loses northern Assyria to Rome during reign of King Vologeses IV., 192-213.
200	Equestrian statue of Marcus Aurelius, 180. Temple of Sun, at Baalbec, built, 200. Triumphal Arch of Septimius Severus marks beginning of decline in Roman art, 203. Baths of Caracalla, 215. Herodian, the Greek historian, writes, 225.	Expedition to Britain against the Scots, 208; Roman wall restored. Death of Septimius Severus at Eboracum (York). Caracalla (211-217); murdered his half-brother and co-regent Geta: also Papinianus and thousands of others. That higher taxation might be imposed, Roman citizenship was conferred upon all inhabitants of the provinces, by the Constitutio Antoniana. Provinces systematically plundered; unsuccessful wars against the Goths in Dacia; inhabitants of Alexandria cruelly treated; plundering expedition against the Parthians. Caracalla murdered. Macrinus, 217; bought peace from the Parthians. Elagabalus (218-222); proclaimed imperator by the soldiers; government conducted by his mother and grandmother; murdered by the prætorians. Severus Alexander (222-235); advised by the jurists Julius Paullus and Domitius Ulpianus; the latter killed during a mutiny of soldiers. Severus Alexander conducts war in the East (226-233), caused by dissolution of the Parthian (Arsacidæ) monarchy and establishment of the new Persian empire of the Sassanidæ by Artakshatr (Artaxerxes). Murder of Severus Alexander. Maximinus Thrax (235-238), a Thracian, raised to the throne by the soldiers. German townships devastated. Gordianus I. (237), a senator; proclaimed imperator by the legions in Africa; his son, Gordianus II., co-regent. Both defeated by the præfect of Mauretania, the son falling in battle, the father committing suicide. Senate at Rome elected the senators Pupienus Maximus and Cælius Balbinus, Augusti, also the young grandson of Gordianus I. Maximinus Thrax killed by his own soldiers at siege of Aquileia. The two imperators appointed by the senate, Balbinus and Pupienus, murdered by prætorians at Rome. Gordianus III. (238-244), sole imperator. War with the Persians 241. Philippus Arabs, co-regent in 243, murdered Gordianus III., 244.	Jingu-Kogo (201-269), empress of Japan, led an army into Korea and subdued it. Severus adds to wall of Hadrian, 210. Artabanus III. (Arsaces XXX.), last king of Parthia, 215-226. Artaxerxes I., king of Persia (226-240), defeats and slays Artabanus, the last king of Parthia, at Hormuz, 226. Parthia absorbed by the Sassanidæ, or New Persian empire, 226-641. Epoch of the three kingdoms of China, 221-265. Religion of Zoroaster restored in Persia, 227. Sapor I., king of Persia (240-271), makes successful war against Rome, 241-244.

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A. D.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
200	Churches built under ground by Christians, in Rome, 250-260.	Philippus Arabs (244-249). Peace with Persia. Thousandth anniversary of foundation of Rome celebrated, 248. Mœsian and Pannonian legions revolt and proclaim one of their officers imperator.	
	Longinus, Greek author, writes his criticisms, 255.	Decius (249-251), sent by Philippus to subdue the mutiny, forced by the legions to accept title of imperator; defeated and killed Philippus in battle of Verona.	
		General persecution of Christians, 250.	
		Fabianus, bishop of Rome, a martyr.	
		Goths defeated by Decius, who fell in battle, 251.	
		Gallus (251-253), elected by the legions; has his co-regent, Hostilianus, son of Decius, put to death.	
		Fatal pestilence throughout the empire.	
		Gallus deposed by the conqueror of the Goths, Æmilianus (253), who four months later was killed by his soldiers.	
		Valerianus (253-260); general of legions in Germania and Gaul; his son, Gallienus, co-regent. War with the German bands. Unsuccessful expedition against the Persians. Valerianus defeated at Edessa, captured and made the slave of King Artaxerxes.	Wuti consolidates the Chinese Empire and founds the dynasty of Tsin, 265.
		Gallienus (260-268). Many pretenders to the throne. Invasions of the barbarians. "Time of the thirty tyrants." Tetricus pretender in Spain and Gaul, Odenathus (of Palmyra) in Syria. Mesopotamia won from Persia by Odenathus, whom Gallienus recognized as co-regent for the East. Murder of Odenathus (267), after which Palmyra was ruled by his consort, Zenobia.	
		Gallienus besieged Mediolanum, and was there murdered by the contrivance of the pretender Aureolus, who himself was put to death by Claudius II. (268-270), raised to the throne by the soldiers. Alamanni and Goths defeated.	
		Aurelianus (270-275). Province of Dacia sacrificed to the Goths. Many Roman colonists transported to Mœsia, a portion of which was now called Dacia (Aureliana). Alamanni and Marcomanni defeated (victory on the Metaurus). Aurelian, "Restorer of the universal empire," defeated Zenobia at Antiochia and at Edessa, conquered Syria, besieged and demolished Palmyra, captured Zenobia, and reconquered Egypt, 273; defeated and captured Tetricus at Chalons, 274; murdered on an expedition against the Persians.	Ojin (270-310), mikado of Japan, still worshiped as the God of War.
	Erection of a new wall around Rome, including the enlarged imperial city, commenced in 271, completed in 276.		Hormisdas, king of Persia, 271-272.
			Zenobia defeated by Aurelian, 272.
			Varahran I., king of Persia, 272-275.
		Tacitus (275) elected imperator by the senate; defeated the Alani; died after three months His brother Florianus, striving for the succession, was defeated by Probus, 276-282.	Varahran II., king of Persia, 275-292.
		Alamanni, Burgundians, Franks, and Vandals driven back by Probus, who entered Germany and strengthened the wall between the Rhine and the Danube.	Korean civilization introduced into Japan, 285.
		Many Germans enrolled as mercenaries in the Roman army.	
	Swamps drained and roads and canals built by the Roman soldiers, who in resentment against such work murdered Probus, 282.	Carus (282-283), the præfectus prætorio, succeeded; appointed his sons Numerianus and Carinus Cæsars, and later Augusti; overcame the Sarmatians; killed (by lightning?) on an expedition against the Persians, after the capture of Ctesiphon.	
		Numerianus (284) accompanied his father to the East; murdered by his father-in-law.	
		Carinus (284), who had stayed in the West, fought, at first successfully, against Diocletianus (284-305), whom the soldiers had proclaimed imperator. Carinus eventually murdered by his own troops.	Independence of Britain under Cerausius, 286-294.
	Beginning of Diocletian era, 284.	Diocletian ruled the East from his court at Nicomedia in Bithynia, intrusting the West to his co-regent, Maximianus, 285.	Varahran III., king of Persia, 292.
		Constantius Chlorus appointed a Cæsar by Diocletian, and given the government of Spain, Gaul, and Britain, Maximianus receiving that of Italy and Africa, 292. Galerius, also made a Cæsar by Diocletian, appointed to the government of Illyricum, including Greece and Macedonia, 292.	
		Revolt of Egypt quelled by Diocletian; and one in Britain, by Constantius, 296.	Narses, king of Persia (292-301), drives Tiridates from Armenia, 296; and is defeated by the Romans, 297.
		Galerius fought against the Persians, at first unsuccessfully, but gained an important victory in 297, and again extended the frontiers to the Tigris.	
		Insurrection in Africa put down by Maximianus.	Tigris, the general boundary between Persia and Rome, 297.
		The Alamanni defeated by Constantius.	
300	Some of the leading principles of optics known to the Platonists, 300.	General persecution of the Christians (303), but discouraged in his province by Constantius.	Monachism begins in Egypt, 305.
		Diocletian, having obliged Maximianus to resign, abdicated (305) and retired to Salonæ in Dalmatia.	Britain re-subdued.
		Constantius and Galerius raised to Augusti.	Early Christian martyrs in Britain, c. 310.
		Maximinus and Severus appointed Cæsars, the former receiving Syria and Egypt, the latter Italy and Africa.	
		Death of Constantius in Britain (306), following which his son, Constantine, assumed title of Cæsar and control of his father's provinces, Spain, Gaul, and Britain; fought successfully against the Bructeri and Franks.	
		Maxentius chosen imperator (306) by the prætorians at Rome, his father, Maximianus, resuming his previous dignity.	
		The Cæsar Severus, created Augustus by Galerius, proceeded to Italy (307) to attack Maxentius; but, deserted by his soldiers, he was slain at Ravenna. In his place Galerius appointed Licinius co-regent and Augustus, and Constantine assumed the same title.	
		Maximianus captured in Massilia and slain by order of Constantine, 310.	Hormisdas II., king of Persia, 301-309.

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A. D.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
300	Water system commenced in Rome by Appius Claudius, 313.	Death of Galerius, 311. War between Constantine and Maxentius. Constantine issues edict in favor of Christians, 311. Maxentius defeated by Constantine at Turin, and at Saxa Rubra, four miles from Rome, and drowns while attempting to cross the Tiber, 312.	Sapor II., king of Persia, 309-379(?)
	Foundation of the new temple at Jerusalem, 327.	Constantine became a protector of the Christians, but continued a catechumen until his death. Allianee between Constantine and Licinius, 313.	Edict of Milan, 313. Christianity introduced into Africa, 330.
	Glass first used in cathedral windows, 330.	Constantine fought against the Franks, Licinius against Maximinus, who was defeated and committed suicide in Tarsus. Constantine and Lucinius the only rulers in the empire (313-323), the first in the West, the second in the East. In a conflict (314) between the two, Licinius was defeated and forced to cede to Constantine Achaia, Illyricum, and Macedonia.	
	Constantinople becomes important center of art and literature, 330.	Second war between Constantine and Licinius, 323. Licinius, defeated at Adrianople and Chalcedon, surrendered in Nicomedia, and by order of Constantine was executed, 324. Constantine (the Great) sole ruler, 323-337. Christianity recognized by the State and favored at the cost of paganism.	
	Metrodorus, first Christian architect, 340.	First general (œcumenic) Council of the Church at Nicæa, in Bithynia, 325. Arianism rejected, and the doctrine of Athanasius of Alexandria declared a dogma of the Church by the Symbolum Nicænum. Constantine chose Byzantium (Nova Roma, Constantinopolis) for his capital, 330. Empire redistricted. Four great prefectures of Gallia, Italia, Illyricum orientale, Oriens, divided into 13 dioceses, these into 116 provinces. New hierarchy of officials, seven superior court officers. New arrangement of taxes. Council of state (consistorium principis). Constantine cruel in his family. Through the plots of his wife, Fausta, herself afterwards put to death, his eldest son, Crispus, and one of his nephews were executed. Before his death, Constantine divided the administration of the empire among his three sons as Augusti and two nephews as Cæsars; after his death (337), in Bithynia, his son Constantius caused the death of the two Cæsars. Empire divided at Constantinople by the three sons of Constantine, 337. Constantinus II. (337-340) given the West (prefectures of Gallia, Italia, and a part of Africa). Constantius (337-361) given the East (the prefecture Oriens). Constans (337-350) given part of Africa and prefecture of Illyricum orientale.	
	Art of miniature-painting, imperfect among the Greeks, applied to Christian uses, 350.	Constantius fought indecisively against the Persians. Constantinus II. attacked Constans and fell at Aquileia. Death of Constans, 350. Empire again united by Constantius, after defeat of the usurper Magnentius, 353. Julianus, appointed Cæsar, defeated the Ripuarian Franks and the Alemanni; assigned the Salian Franks lands in northern Gaul. Paganism restored, 361.	Persian war with Rome, 337-350.
		Death of Constantius (361) on an expedition against Julianus (361-363), whom the legions had proclaimed Augustus Julianus, known as the apostate for his adherence to the heathen philosophy; defeated the Franks and Alemanni; restored frontier fortresses which had been erected against them; defeated the Persians at Ctesiphon; on his return, died of a wound, 363. Jovianus (363-364), a Christian, raised to the throne by the soldiers. Christianity reinstated in the privileges granted by Constantine. Greater part of Mesopotamia ceded to the Persians.	Second Persian war with Rome, 359-363. Western shores of Britain ravaged by Scots from Ireland, 360. Great earthquake in Egypt, 365.
		Valentinianus I. (364-375) raised to the throne by the legions. Appointed as co-regent first his brother, Valens (364-378), who governed the East from Constantinople; later, his son, Gratianus (367-383), who governed the West. Upon the death of Valentinianus I., Gratianus acknowledged as co-regent for the West, his half-brother, Valentinian II. (375-392), whom the soldiers had proclaimed imperator. Beginning of migration of Teutonic tribes, 375. Death of Valens at Adrianople in battle against the West Goths, 378.	Third Persian war with Rome, 371-376. Beginnings of the migration of the northern Teutonic tribes, 375. Huns cross the Volga, 375. Huns conquer the East Goths. The Huns invade Russia, 376. Battle of Adrianople; Valens defeated and slain by the West Goths, 378.
		Theodosius (379-395), appointed co-regent by Gratianus, and given charge of the East; became a Christian; fought successfully against the West Goths, but was compelled to accept them as allies in their homes in Thrace and Mœsia. Death of Gratianus (383) in battle against Clemens Maximus (383-388), whom the legions in Britain had proclaimed imperator.	Artaxerxes II., king of Persia, 379-383. Sapor III., king of Persia, 383-388. Armenia divided between Persia and Rome, 385.
	Basilica of San Paolo fuori le Mura built at Rome, 388.	Theodosius recognized Maximus as co-regent on condition that Valentinian II. retain Italy. Valentinian, driven from Italy (387) by Maximus, fled to Theodosius, who returned with him, captured Maximus at Aquileia, and slew him. Paganism proscribed, 390.	Varahran IV., king of Persia, 388-399.
	San Lorenzo at Milan built, 390.	Uprising in Thessalonica (390) put down with great cruelty by Theodosius, for which he was excluded by bishop Ambrosius of Milan from Christian communion, until he had done penance. Valentinian II. murdered by Arbogastes, 392. Eugenius, set up by Arbogastes, killed in battle with Theodosius at Aquileia, 394. Arbogastes commits suicide. Empire reunited under Theodosius, 394-395. Death of Theodosius, 395.	Alaric, leader of the West Goths, lays waste Macedonia, Illyria, and Greece, 395. Stilicho attacks the West Goths, but they elude him, 396. War of Britons with Picts and Scots, 396.
		Division of administration into an eastern and a western section becomes a permanent division of the empire, 395. The eastern portion of the empire was ruled by Arcadius, with Rufinus, imperial vicar. Capital, Byzantium or Constantinople.	Isdigerd I., king of Persia, 399-419 or 420.

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A. D.	DISCOVERIES, ARTS, CRAFTS.	ROME.	OTHER COUNTRIES.
400	Triumphal arch of Theodosius built, 405. First use of bells in Europe, 405. Public schools established by Theodosius at Rome; attempted restoration of learning, 429.	The western portion was ruled by Honorius (395-423), and the Vandal Stilicho was appointed his guardian and chancellor. The enemies of Stilicho defamed him to Honorius, who caused him to be murdered (408). Rome was the capital, but after 402 Ravenna was the royal residence. Last triumph at Rome, 404. Alaric at Rome, 408-410. Romans leave Britain, 409. Sack of Rome by Alaric, 410. Disintegration of Roman Empire. Beginning of barbarian kingdom, 410-451.	Stilicho fights a drawn battle with Alaric at Pollentia, 402. Stilicho annihilated fighting bands of Germans under Radagais at Fæsulæ, 404-406. Burgundians settle on the Middle Rhine, 406-413. Salian Franks settle in northern Gaul, 408. Bands of Vandals, Suevi, and Alani, after defeat by the Franks, settle in Spain, 409. Honorius renounces the sovereignty of Britain and withdraws Roman legions, 409-420. Death of Alaric at Cosenza in lower Italy, 410.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	PERSIA.	ROME.		TEUTONIC TRIBES.			
		Western Empire.	Eastern Empire.	Britons.	Franks.	Visigoths (West Goths).	Vandals.
410	Varahran V., 419 (420)-440. The pretender Chosroës slain. Christians persecuted. War with Rome: peace (422), Varahran promising to end the persecution. Seven thousand Persian captives ransomed by Acacius, bishop of Amida. Beginning of wars with the Ephthialites, a people probably of Tibetic or Turkish stock, living beyond the Oxus. Invading khan surprised, defeated, and slain. Tatars punished in their own country. Isdigerd II., 440-457. War with Rome declared; peace immediately concluded. Nine years' war with the Ephthialites; their final defeat in their own country. Isdigerd's efforts to convert Armenia to Zoroastrianism caused religious war; Christians defeated, 455 or 456. Armenia forcibly converted. Isdigerd II. defeated by the Ephthialites. Civil war between Hormisdas and Perozes, sons of Isdigerd II.; Perozes (459-483?) victorious. Great famine, 466?. Unsuccessful war and ignominious peace with the Ephthialites, 464-465. Armenian revolt under Vahan.	Joannes, emperor, 424. Valentinian III., emperor, 425-455. Government by his mother, Placidia, as regent, at first. Origin of Venice, 452. Valentinian III. murdered by Petronius Maximus, 455. Petronius Maximus, emperor, 455; killed just before the capture and 14 days' plunder of Rome by the Vandals, 455. Eudoxia, widow of Valentinian, compelled to marry Petronius Maximus, 455. Genseric at Rome, 455. Avitus, usurping emperor (455-456), deposed by Recimir. Majorianus, emperor (457-461), placed on the throne by Recimir and deposed by him. Libius Severus, emperor (461-465), placed on the throne, and probably deposed by Recimir.	Theodosius II., 408-450. Government carried on by Pulcheria, sister of Theodosius II., 414-446. Death of Theodosius II., 450. Huns exact repeated contributions. Pulcheria again ruler with Marcianus, emperor, 450-457. Leo the Thracian, emperor, 457-474. Unsuccessful expedition against Vandals in Africa, 468.	Angles and Saxons summoned by the Britons to aid in repelling Picts and Scots, 449; founded eight states,—Sussex, Wessex, Essex, Kent, East Anglia, Mercia, Bernicia, Deira; last two later united to form Northumbria. Hengist and Horsa, Jute chiefs, land in Thanet, 449. Country between the Thames and Andredsweald gradually conquered. East and West Kent.	Treves taken from Rome. Large territories on the Meuse and the Scheldt held by the Franks as the suzerains of Rome. Franks fought under Aetius against Attila on the Catalaunian fields (Battle of Chalons), 451.	Led by Athaulf (410-415) to Gaul. Athaulf married sister of Honorius, in Narboune, 414. Athaulf, pursued by the imperial general Constantius, proceeded to Spain; subdued Barcelona; was murdered, 415; his successor, Sigric, murdered. Walja, king, 415-419. Treaty with Honorius concluded. Walja fought for Rome against Alani, Vandals, and Suevi; obtained a grant of southern Gaul under Roman supremacy. Kingdom of Tolosa (415-507) founded by Walja; capital at Tolosa (Toulouse); soon independent. Aid the Romans against Attila, 451. Theodoric I., king of the West Goths, slain in battle on the Catalaunian fields, 451.	Vandals and part of the Alani taken to Africa by King Genseric (Geiseric), 429. Genseric successful over Roman governor Bonifacius; brief peace, 435; conquest of Carthage, 439. Vandal kingdom in Africa, 429-534; capital, Carthage (St. Augustinus, bishop of Hippo Regius, d. 430). Plunder by their fleets the coasts of lower Italy and Sicily, 440. Pillage of Rome for fourteen days, 455. Control islands of the western Mediterranean and entire northern coast of Africa as far as Cyrene.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	PERSIA.	ROME. Western Empire.	ROME. Eastern Empire.	TEUTONIC TRIBES. Britons.	Franks.	Visigoths (West Goths).	Vandals.
410	Ephthalites again attacked by Perozes, who was defeated and slain. Balas (Persian, Valakhesh or Volgases), 483?-487. Tribute probably paid to Khush-newaz, the Ephthalite khan. Armenia pacified. Edict of toleration. Fire altars destroyed. Kobad, son of Perozes, first reign 487?-498. Victorious war with the Khazars, a people of uncertain race, living between the Don and the Volga. Kobad and many others converts to the ascetic and communistic doctrines of Mazdak, a high priest of Zoroaster, which causes disorders in Armenia and Persia. Kobad deposed. Zamasp (brother of Kobad), 498-501.	Government of Rome by Recimir, 465-467. Anthemius, emperor (467-472), placed on the throne by Recimir. Olybrius, emperor. 472. Death of Olybrius and Recimir, 472. Glycerius placed on the throne by the Eastern court, 473. Julius Nepos (474-475) appointed by emperor of the East. Romulus Augustulus (475-476), last of the imperial line in the West, placed on the throne by his father, Orestes, prominent among the mercenaries. Odovaker (Odoacer) deposed Romulus Augustulus, 476. War between Odovakar and Theodoric the Great, 489-493; Odovakar defeated. Battle of Aquileia (489); of Verona (489); of the Adda. (490). Theodoric takes the title of king of Italy (493-526), and makes Ravenna his capital,	Theodoric a hostage at the Eastern court, 462. Zeno, emperor (474-491), after a brief regency for his son Leo II. Zeno suppresses the rebellion of Basiliscus by the aid of the Ostrogoths, 475-477. Zeno encourages Theodoric to wage war on Odoacer, 488. Anastasius I., emperor, 491-518.	South Saxons (Ælle, Cymen, Cissa, Wlencing), land at Cissanceaster (477) and conquer region south of the Andredsweald. Ælle first Bretwalda of Britain. Storm of Anderida, 491; inhabitants massacred. West Saxons, under Cerdic and Cynric, found important settlement on southern coast, west of the Andredsweald, 495.	Childeric at Paris, 464. Battle of Soissons, 486; Roman governor Syagrius defeated by Salic Franks under the Merovingian Chlodwig (Chlodowech, Clovis, 481-511). Frankish kingdom in northern Gaul. Chlodwig sole ruler of all the Franks; victory over the Alamanni, 496. Chlodwig and the Franks converted to Catholic Christianity; Chlodwig baptized by Remigius, bishop of Rheims. 496.	Thorismund, 451-453. Theodoric II., 453-466. Euric, 466-483. Alaric II., 483-507.	Decay of kingdom after death of Genseric, 477. Hunneric (477-484), son of Genseric, persecutes the Catholics; wars against the Moors of Africa. Guntamund, 484-496. Thrasamund, 496-523. The Vandals aided by the Goths resist the Moors of Tripoli.
500	Escape of Kobad to the Ephthalites and return at head of an army. Voluntary resignation of Zamasp. Second reign of Kobad, 501-531. Support of Mazdak withdrawn. War declared against Eastern Empire for its refusal to fulfill its agreement to aid in the defense of the pass of Derbend, in the Caucasus, the common route of the nomadic tribes in their invasions of the Eastern Empire and Persia. Amida sacked, 502. Peace impelled by an Ephthalite invasion, 507. Anastasius, emperor of the East, erected fortress of Daras, twelve miles from Nisibis. Second war with Eastern Empire, 524-531; Persians at first victorious, but defeated by Belisarius in the battle of Daras, 528. Chosroës I., Anushirwan ("The Just"; son of Kobad), 531-579; possibly the greatest of the Sassanid kings.	Amalasuntha, daughter of Theodoric, becomes regent for her son Athalaric, 526-535.	Justin, emperor, 518-527. Justinian I., emperor (527-565); law codified in form known as the *Corpus Juris Civilis* (Tribonianus). Schools at Athens closed, 529. Code of Justinian published, 529. Parties of the circus: whites, reds, blues, greens; sanguinary contests ("Nika"), 532.	Royal title assumed by Cerdic and Cynric, 517. Battle of Mons Badonicus, 520; repulse of Saxons attributed by Cymric traditions to Arthur, king of the Silures. Saxons in Essex, 527. Angles, 527.	Chlodwig vanquished the Burgundians at Dijon, and made them tributary, 500; overcame the West Goths at Vouillé or Voulon, near Poitiers (507), but was defeated by them at Arles. Death of Chlodwig. Kingdom divided, 511. Theoderic I. (Thierry, 511-533), Childebert I. (511-558), Chlodomer (Chlodomir, 511-524), and Chlotar I. (Clotaire, 511-561), the four sons of Chlodwig, ruled from the court camps of Metz, Paris, Orléans, and Soissons. Theoderic I. conquered kingdom of the Thuringians, 530-532; northern part given to their allies, the Saxons; southern part retained by the Franks. Two younger brothers of Theoderic I. overcame the Burgundians, 530-532.	Defeated by the Franks at Vouillé or Voulon, near Poitiers, 507. Are victorious over the Franks at Arles, 507; retain control of Septimania (coast between the Rhone and Pyrenees). Spanish possessions and those in southern Gaul governed (507-526), by Theodoric the Great for his grandson, Amalaric, 507-531. West Gothic (Visigothic) kingdom in Spain, 507 (526)-711. Amalaric assassinated, 531. Theudis rules in Spain, to which the Visigothic empire was limited, 531-548.	Hilderic (523-530), son of Hunneric. Hilderic deposed by Gelimer, 530. Power in Africa destroyed by Belisarius (533-534), general of Justinian, Eastern emperor. Gelimer captured.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	DISCOVERIES, ARTS, CRAFTS.	PERSIA.	EASTERN EMPIRE.	TEUTONIC TRIBES.			
				Britons.	Franks.	Visigoths (West Goths).	Ostrogoths (East Goths).
500	Greek School of painting, 500. Boethius writes his geometry and arithmetic, which formed the basis of mediæval mathematics, 510. Pamirs and Punjab visited by Hoe-sing of China, 518-521. Anthemius of Lydia and Isidorus of Miletus build church of St. Sophia at Constantinople, 525-537. Benedict (480-543) forms his first monastery on Monte Cassino, in central Italy 529. Code of Justinian published, 529. Procopius says that eggs of silkworms were brought from China by monks, about 530. The *Aqua Paola* aqueduct at Rome restored by Belisarius, 537. Farm labor on Sunday prohibited by the Council of Orleans, 538. Earliest reference to wooden coffin in England, 542. Bells first known in France, 550. Notation by nine digits and zero called Arabic figures, known in Hindustan, 550. Silkworms reared in Constantinople 551. Quills used for pens, probably about 553. Fifth great council of the Church at Constantinople, 553. Monastery of Iona founded by St. Columba, in Scotland, 563.	Peace with Rome (533): 11,000 pounds of gold paid by Rome for fortification of the Caucasus; Daras to retain its fortifications, but not to be Roman headquarters; recent conquests surrendered by each; *eternal* friendship and alliance (causing this peace to be called the "endless peace"). War declared against Rome, 540. Antioch captured, 540. Ransom exacted from chief cities of western Asia Minor. Truce concluded, 545. War (549) with the Lazi (people of ancient Colchis), who were aided by Rome. Petra captured by the Romans and Lazi, 551. Chosroës's expedition to Arabia (562) against the Christian kingdom founded there early in the sixth century by the Abyssinians; Abyssinians expelled and country left to the control of Saïf, leader of the native Homerites, after whose murder Arabia became a Persian province. Expedition of Chosroës to India? Unsuccessful invasion of Dezabul, khan of the Turks, who had conquered the Ephthialites, and became an ally of the Eastern Empire. Peace with Rome (563): Rome to receive Lazica and to make an annual payment to Persia; Christians in Persia permitted exercise of their faith; commercial intercourse between the empires limited to certain marts and roads; diplomatic intercourse to be free; Daras to keep its fortifications; arbitration to settle future disputes; allies of either party included in the peace; Persia to maintain the Caspian Gates alone; the peace concluded for fifty years. Victorious wars with the Khazars and Ephthialites. Mohammed or Mahomet, 570-632.	Belisarius, 535-560 Campaigns of Belisarius against the Vandals in Africa, 533-534; and the East Goths in Italy, 540, 544-549. Church of St. Sophia, built by Constantine (Hagia Sophia), burned and magnificently rebuilt. Empire's decline under successors of Justinian. Persians, and, later, Arabs, conquer a part of the African and Asiatic provinces. Narses destroys kingdom of the East Goths, 555. Exarchate. Almost entire Exarchate conquered by Longobards (Lombards); Calabria, Naples, Venice, Ravenna, retained by Eastern Empire. Death of Belisarius and of the Eastern emperor Justinian, 565. Justin II. emperor, 565-578. War with Persia renewed, 572. Tiberius Constantinus, emperor, 578-582.	Modern Berkshire conquered by Cynric, 534-556. Wessex made powerful by Ceawlin (556-591 [3]), later called the second Bretwalda of Britain. Battle of Deorham, 577. Power of Ceawlin extended to the Severn. Cymry of Cornwall (Devraint) separated from those of West Wales. East Saxons settle north of the Thames. Camulodunum (Colchester) sacked. Small kingdom established near the Wash. Middle Saxons settle about London. East Angles occupy region north of the East Saxons, the forest, and the great fens about the Wash. North Angles settle Deira and Bernicia (547), north of the Humber. Central Yorkshire conquered. Under Ida, "the flame bearer," conquests of the Angles extended to the Esk. Angles occupied (early in sixth century), the present counties of Leicester, Lincoln, Northampton, Nottingham, and Warwick; later united in the kingdom of Mercia (Cridda), 582 ?.	Provence obtained, 536. Supremacy over Bavaria and Swabia upon fall of East Gothic kingdom, 555. Kingdom reunited under Chlotar I. (558-561), who survived his three brothers. Death of Chlotar I., 561. Kingdom divided (561) among grandsons of Chlodwig: Charibert I. (561-567), Chilperic I. (561-584), Guntram (561-593), Sigibert I. (561-575).	Theudis assassinated, 548. Kingdom of the Suevi in Spain united with that of the West Goths, 585. Converted to Roman Catholic Church, 587. Kingdom in Spain destroyed at battle of Xeres de la Frontera by Tarik, an Arabian general, 711.	Kingdom in Italy founded by Theodoric the Great (493-526); residence, Ravenna, sometimes Verona. Cassiodorus, the historian. A part of southern Gaul added (507) to the kingdom by Theodoric the Great, who also governed (507-526) the Spanish possessions and Gallic lands of the West Goths. Symmachus and Boëthius executed, 525. Death of Theodoric the Great, 526. Amalasuntha, daughter of Theodoric, regent for her son, Athalaric, 526. Death of Athalaric, 534. Amalasuntha made coregent with Theodahad, who murdered her. War with Eastern Empire, 535-555; King Vitiges carried captive to Constantinople. Belisarius, general of Eastern emperor, Justinian, offered Italian crown by the East Goths; declines. Under Totila, reconquered large part of Italy. Rome recaptured by Belisarius; taken a second time by Totila. Totila defeated and slain by Narses, general of Justinian, at Taginæ or Busta Gallorum, 552. Kingdom destroyed by Narses, 555.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	DISCOVERIES, ARTS, CRAFTS.	PERSIA.	EASTERN EMPIRE.	TEUTONIC TRIBES.			Other Countries.
				Britons.	Franks.	Lombards.	
500		War declared on Persia (572) by Justin, emperor of the East. Syria devastated by Chosroës, 572. Fall of Daras, 573. Empire divided into four governments. Fixed land tax in place of former variable tax on produce; tax collectors under supervision of the priests. Improved irrigation. Army reformed. Foreigners protected. Learning encouraged. Revision of laws of Artaxerxes. Shah-na-meh, or Book of the Kings, the basis of Firdusi's epic. Fables of Pilpay and game of chess introduced from India. Death of Chosroës in Mesopotamia, 579. Hormisdas IV. (Hormazd), 579-589; son of Chosroës; ruled wisely at first, but became the worst of Persian kings. Invasion by Maurice, emperor of the East, 579. Persians defeated at Constantia, 581. Alternate victory and defeat. Invasion (589) by Khazars, Arabs, and the great Khan of the Turks; the last defeated and slain by the Persian general, Bahram. Hormisdas invades Lazica and provokes war with Rome, 589. Defeat of Bahram on the Araxes. Bahram, insulted by the king, revolts. Hormisdas deposed and murdered, 589. Chosroës II., Eberwiz, 589-628. War with Bahram. Chosroës II. driven from the kingdom. Crown assumed by Bahram (Varahran VI.), 590-591. Chosroës II. restored to the throne by a Roman force. Flight of Bahram to the Turks.	Persians invade Byzantine territories, 572, and continue a war for 19 years. Maurice, emperor, 582-602. Period of decline caused by deficient or unfortunate rulers who drained upon the resources of the empire, and following the Persian War by a burden of taxation, and inroads by Slavs and Avars from the north. Gregory I. (the Great), bishop of Rome (590-604). Beginning of the Papacy.	Britain divided by 575 between Cymry and Teutons, by a line drawn almost north and south midway of the breadth of the land. Kingdom of Northumbria formed (588), by enforced union of Deira and Bernicia under Æthelric, king of Bernicia. Æthelbert, king of Kent, later named the third Bretwalda, ruler over East Anglia, Essex, Middle Britain, 590-616; married Catholic Christian princess Bertha, daughter of Charibert, king of the Franks. Augustine, legate of Pope Gregory the Great, arrived, 597. Kent converted. Quarrel between Augustine and the British church (form of the tonsure, date of Easter). East Saxons converted. Laws of Æthelbert. East Angles revolt against efforts for their conversion. Middle Britain subjugated (about 610-617) by Rædwald of East Anglia, later called the fourth Bretwalda.	Death of Charibert I., 567; his territory equally divided among his brothers: Austrasia, capital Rheims, population mostly German; Burgundy, capital Orléans; Neustria, capital Soissons; population of the two latter divisions Romano-Celtic or Romance. Family divisions and frightful wars. Feud of Brunhilde of Austrasia, daughter of Athanagild, king of the West Goths, and Fredegunde of Neustria (597), slave, and later wife, of Chilperic I. Decay of the Merovingian power following a period of anarchy. Entire kingdom united (613) under Chlotar II. of Neustria, great-grandson of Chlodwig.	Alboin (?-573) destroys kingdom of the Gepidæ on the lower Danube; leads the Longobards (Lombards) into Italy, which he conquers as far south as the Tiber, 568. Almost the entire exarchate of the Byzantines conquered. Kingdom of the Longobards in Italy (568-774) established. Cleph, son of Alboin, king (573-574?), pushes conquests to lower Italy and establishes independent Longobardian duchies, but rules helplessly amid anarchy. After an interregnum of about ten years Authari or Flavius, king (583-590), institutes an admirable form of government. Conversion of the Longobards to Christianity begun through the influence of Theodelinde, wife of Authari. Theodelinde, wife of Authari, unites the Lombards to the Church. Agilulf, (590-615). From his time may be dated the beginning of civilization among the Longobards.	Actual history in India remains practically blank from about 400 A. D. until the Mohammedan Period. Previous to 590 north China was ruled for about 200 years by a Tunguse family called Toba. Simultaneously with the growth of the Toba Tunguses in north China, a power called the Jeujen had sprung up in the desert region, and was at the height of its power probably about 585-590. Yang Kian, Chinese general of the Chow dynasty, succeeds (590) once more in unifying China by founding the Suy dynasty, which ruled 590-618.
	Suicide a crime, and those committing it denied funeral services and decent burial, 578. The eight musical modes begun by St. Ambrose and known as the "Gregorian modes" completed by Pope Gregory (590-604). Block-printing said to have been invented by the Chinese. Saddles were known in England, probably 595.						
600	Paper made from cotton, 600. The oath in judicial proceedings said to have been introduced into England, about 600.	War with Phocas, murderer of Maurice, 603-610; Daras captured; Armenia, Galatia, Phrygia, and Syria devastated; Antioch sacked.					Mohammed's flight (Hegira) from Mecca to Medina, 622.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	DISCOVERIES, ARTS, CRAFTS.	PERSIA.	EASTERN EMPIRE.	TEUTONIC TRIBES, Britons.	TEUTONIC TRIBES, Franks.	TEUTONIC TRIBES, Lombards.	Mohammed and the Caliphate.
600	Sugar brought into Europe from Asia, 625. Cotton cloth known in Arabia, 627. Bronze throne of Dagobert, now in the Louvre, made about 630. First convent in England erected at Folkestone, 630. Enameling on gold and metals carried to high degree of perfection, 630. Byzantine styles predominate in articles of furniture, 630. Carvings in ivory, including cups and vases, made with some degree of artistic excellence, 630. Consular diptychs or folded two-leaved tablets of ivory are known to date from this time and earlier, 630. During the dark ages many of the processes of industrial arts were lost; notably those of pottery and glass. An Alexandrian library said to have been burned by the caliph Omar I., 640. Latin first taught in England. Mass in Latin introduced into England. It is said that the caliph Omar opposed a plan for cutting a canal across the isthmus of Suez.	Cappadocia invaded, 612. Damascus captured, 614. Jerusalem sacked, 615. Persian general Shahr-Barz captures Alexandria and Pelusium; Egypt subjugated, 616. Chalcedon captured, 617. Persian camp within a mile of Constantinople. Rhodes and Ancyra captured, 620. Limits of empire under Darius I. again attained. Romans land in Gulf of Issus; Shahr-Barz defeated, 622. Heraclius, Eastern emperor, sails to Lazica and invades Armenia, 623. Retreat of Chosroës. Romans winter in Albania. Battle of the Sarus, 625; Shahr-Barz defeated. Alliance of Chosroës with the Avars. Unsuccessful attack on Constantinople. Battle of Nineveh, December 12, 627: Persians defeated. Flight of Chosroës. Persian troops at Ctesiphon, under two of the king's sons, mutiny. Chosroës captured and murdered, 628. Kobad II. (Siroës), 628-629 (?). Peace with Rome concluded on a basis of exchange of captives and conquests. Death of Kobad. The throne was usurped by Shahr-Barz, but before two months he was murdered by his own troops. Purandocht and Azermidocht, daughters of Chosroës II., reign. Period of anarchy; throne held successively by nine or ten nobles. Isdigerd III. (632-641 [651]), grandson of Chosroës II., last Sassanid king. Struggle against the caliphs Abu-Bekr and Omar. Kaled's expedition to Hira, 633; Persians defeated. Arabs capture entire region west of the Euphrates, their devastations extending throughout Mesopotamia.	Heraclius, emperor, 610-641. Jerusalem recovered from the Persians by Heraclius, 628. Constans II., emperor, 641-668. Pope Martin seized and banished by Constans, 653.	Battle of Chester, 607; Cymry of Strathclyde defeated by Æthelfrith of Northumbria, who, extending his realm to the sea, separated Strathclyde from Wales. Battle of the Idle; Æthelfrith defeated and slain by Rædwald. Eadwine of Northumbria (617-633) supreme over all Teutonic Britain except Kent; the fifth Bretwalda. Eadwine converted, 627. Mercians revolt under Penda (627-655); in alliance with Cadwallon of Wales are victorious over Eadwine at battle of Heathfield, 633. Death of Eadwine. Penda of Mercia supreme (633-655) over East Anglia, Essex, and Middle Britain. Battle of the Hevenfeld, 635; Cadwallon defeated by Oswald of Bernicia. Conquest of Deira. Oswald of Northumbria, later called the sixth Bretwalda, supreme over Kent, Sussex, Wessex, Essex. Conversion of Northumbria by Irish missionaries. Contest over East Anglia between Oswald and Penda; the former defeated and slain in battle of the Maserfeld, 642. East Anglia, Wessex, Deira, under Penda. Battle of the Winwæd, 655; Penda defeated and slain by Oswiu, brother and successor in Bernicia of Oswald. Oswiu of Northumbria, the seventh Bretwalda, supreme (655-659) over all Teutonic Britain except Kent, Sussex, and Wessex.	Brunhilde seized, tortured, and dragged to death by a wild horse, 613. Majores domus become powerful; at first, superintendents of the royal household; later, leaders of the feudal retainers; hereditary claim to the office acquired first in Austrasia, later in Neustria, by the Pipins (Carolingians), of pure German blood. Kingdom divided (622-678), with several temporary unions: (1) Austrasia, chiefly German, divided by the Scheldt from (2) Neustria (Romance, northern France to the Loire) and Burgundy. Bretagne independent, Vasconia and Aquitania nearly so. Dagobert, 628. Battle of Testri (near St. Quentin), 687; Pipin of Héristal, major domus of Austrasia, victorious over major domus of Soissons (Neustria), and made sole major domus of entire kingdom of the Franks.	Rothari (636-652) famous for declaring code of Lombard laws, 644. Lombards assimilate with and are refined by contact with the Italians.	Mohammed victorious in Arabia, 629. Death of Mohammed, 632. Abu-bekr, father-in-law of Mohammed, caliph, 632-634. Collection of the Koran, afterwards enlarged by the transcription of the Soona, an oral tradition. Believers separated into Soonees, who accepted this addition, and Sheeahs, who rejected it, and considered Ali, son-in-law of Mohammed, his only rightful successor. Wars with the Persians and the Eastern Empire. Omar (634-644), founder of Arabian domination in the East; assumed title of Emir-al-Mumenin ("Prince of the faithful"), afterwards held by all the caliphs. Syria (Damascus 635), Palestine, Phœnicia, subjugated. Empire of the Sassanidæ (New Persians) destroyed by the battle of Nehavend, 641. Egypt conquered by Amroo, general of Omar. Alexandria captured. Othman (Osman), 644-656. Northern Africa conquered. Rhodes captured. Othman murdered during an uprising, 656. Ali (Mohammed's son-in-law) (656-661); not generally recognized.

From the Death of Alaric to the Time of Charlemagne, 410-768 A. D.

A. D.	DISCOVERIES, ARTS, CRAFTS.	PERSIA.	Mohammed and the Caliphate.	EASTERN EMPIRE.	TEUTONIC TRIBES. Britons.	Franks.	Lombards.
600	Organs introduced into churches, 660. I-tsing, of China, travels through Java, Sumatra, India, 671-695. Bæda, 672?-735; "Historia ecclesiastica gentis Anglorum." French glass-makers installed at Wearmouth, England, by St. Benedict, 675. Greek glass workmen called to France, 677. Cædmon, ?-680. French glaziers at work in York, England, 699. Byzantine mosaics and marble used in churches.	Persian army of 120,000 levied. Battle of Cadesia, 636; Persians defeated by Sa'ad Ibn Abi Wakas; royal standard (Durufsh-kawani) lost. Mesopotamia invaded by Sa'ad, 637. Ctesiphon captured. Battle of Jalula; Persians defeated. Susiana and Persia proper invaded by Arabs, 639; Hormuzan, Persian general, captured. Sa'ad recalled. Persian army of 150,000 raised. Battle of Nehavend, 641. Fall of Sassanid power. Persia hereafter governed by the caliphs. Isdigerd III. a fugitive for ten years; murdered, 651.	Muawwiyah proclaimed himself caliph in Syria. Civil wars. Ali murdered. Sooneite or Sunnite Ommiads obtained caliphate, 661-750. Muawwiyah I., great-grandson of Omeyyah, 661-680. Residence of the caliphs transferred from Medina to Damascus. Caliphate made hereditary.	Constantine IV., emperor, 668-685. Sixth General Council of the Church at Constantinople, 680. Justinian II., emperor, 685-711. Justinian II., banished (695), and restored, 704. First doge of Venice elected, 697.	Revolt of Mercia under Wulfhere, 659. Kings of Northumbria henceforth sovereigns of local power only. Rivalry between Rome and the Irish missionaries. Oswiu convened a council which decided in favor of Rome. The English church organized by Theodore of Tarsus, archbishop of Canterbury, 669. Ine, king of Wessex, 688-726. Kent subjugated, 694.		
700	Embalming among the Egyptians probably ceased about 700. First mention made in history of the navy of Franks, 728. First public pharmacy erected by Al-Mansur, the Arabian, 745. A clock is said to have been sent by Pope Paul I. to Pipin, king of France, about 760. Astronomy and geography cultivated by the Arabs, 760.	Conquest of Byzantine Africa as far as Atlantic ocean completed by the governor Musa about 700. Islam accepted by the Berbers, who, with the inhabitants of Greek Punic, and Roman descent, became amalgamated with the Arabians under the name of Moors. Moors in Spain, 711-1492. Battle of Xeres de la Frontera on the plains of the Guadalquivir, 711; kingdom of the West Goths (Spain) destroyed by Tarik, a general of Musa. Province of the caliphate in Spain. Country of the Basques penetrated and Gaul invaded. Battle between Tours and Poitiers, 732; Arabians defeated by Charles Martel. Greatest extent of the caliphate under the last of the Ommiads, including southwestern Asia, northern coast of Africa, part of the Spanish peninsula, Narbona in southern France, Corsica, Sardinia, the Balearic Isles. Constant wars with followers of Ali. Merwan II., last Ommiad caliph, overthrown (750) by Abul Abbas, great grandson of an uncle of the prophet. The Abbassides, 749-1258. Residence, Bagdad. All the Ommiad princes (90) murdered except one, Abd-er-Rahman, who fled to Spain and founded there (756) the caliphate of Cordova.		Philippicus Bardanes, emperor, 711-713. Leo the Isaurian, 717-741. Worship of images prohibited. Contest over images, 726-842. Separation of Greek and Latin Churches, 729. Last confirmation of a Papal election by the emperor of the East, 731. Constantine V., emperor, 740-775.	Wars with the Cymry of Cornwall, 710. Laws of Ine, the oldest West Saxon code. Ine abdicated, 726. Boniface (Winfrith), apostle of the Germans. Willibrod, missionary to the Frisians. Cuthbert, bishop of Lindisfarne; Wilfrith, of York. Benedict Biscop, abbot of Wearmouth. Æthelbald of Mercia supreme (733-752) over all England south of the Humber. Battle of Burford (Oxfordshire), 752; the West Saxon Cuthred victorious over Æthelbald of Mercia. Teutonic Britain divided into three great kingdoms, Mercia, Northumbria, Wessex. Strathclyde conquered for Northumbria by Eadbehrt, 756. Offa, king of Mercia, 757-794.	Eudes, duke of Aquitaine, asks aid of Charles, son of Pipin, against Arab invaders. Arabs defeated near Tours by Charles Martel (major domus 714-741), 732. Pipin the Short (752-768), son of Charles Martel, raised upon the shield at Soissons, as king of the Franks. Pope recognized as head of the church by the Concilium Germanicum, 742. Childeric III., last Merovingian king, deposed and placed in a monastery, 751. Pipin and his sons Charles and Karlmann are anointed as kings of the Franks by Pope Stephen III., 752; Carolingians in France, 752-986. Pipin repulsed Aistulf, king of the Longobards, who threatened the Pope. Gift to the Pope of the Pentapolis (Ancona, Fano, Rimini, Pesaro, Sinigaglia), the Exarchate of Ravenna, Ferrara and Bologna; foundation of the papal states thus laid. Pipin patricius of Rome.	Grimoald duke of Beneventum, seizes the throne and completes conversion of the Longobards. Liutprand (712-744) raised the Lombards to highest prosperity. Aistulf (750-756); effort to conquer Rome defeated by Pipin, king of the Franks, who completes the extinction of the exarchate of Ravenna. Pipin, the Short, invades Italy and restrains the Lombards, 754-755. Charlemagne sends his wife back to her father, King Desiderius, 756-774. Charlemagne invades Italy and overthrows Lombardy, 774.

From the Time of Charlemagne to the Death of Hildebrand, 768-1085 A. D.

A. D.	Discoveries, Arts, Crafts.	Franks Under Carolingians.	England.	Eastern Empire.	Caliphate.	Other Countries.
768	In the eighth century the progress in discoveries, arts, and crafts was very slight, especially during the last half of the period. The Byzantine and Basilical styles of architecture which rose in the sixth century, the one in the East and the other in the West, continued to flourish side by side, the Byzantine style undergoing some minor changes in its development. In sculpture, painting, science, and invention, the century is practically a blank.	Charles the Great (Charlemagne), 768-814; sole ruler after the death of his brother Karlmann, 771. War with the Saxons, 772-804. Eresburg captured, Irminsul destroyed, 772. Sons of Karlmann fled to Desiderius, king of the Longobards, who, upon refusal of the Pope to crown them, occupied the Pentapolis and threatened Rome. Pavia captured. Desiderius placed in a monastery. Charlemagne king of Italy (i. e., the kingdom of the Longobards, northern and central Italy), 774. Sigiburg captured, 775. Saxons west of the Elbe conquered. Eresburg destroyed by the Saxons, who were resubjugated, 776-777. First May-field (assembly) in the Saxon land at Paderborn. Wars with Spain, 778. Saragossa subdued. Frankish rear-guard defeated upon return by Roncevaux, or Roncesvalles. Death of Roland, margrave of the Breton coast. Fresh outbreak of the Saxons upon news of Charlemagne's defeat in the Pyrenees, 778; put down by an army of Alamanni and East Franks. Battle of Bocholt on the Aa, 779; Charlemagne victorious. Saxons subdued, 780; accept Christianity. General revolt of the Saxons under Widukind or Wittekind. Frankish army defeated.	Mercia: Oxfordshire won from Wessex, 777 (?); Welsh kingdom of Powys conquered; Offa's dyke from mouth of the Dee to that of the Wye; laws of Offa.	Boundaries extended both in Asia and Europe; administration reformed; commerce encouraged; and colonies planted by Constantine V., 741-775. Monasteries dissolved, 770. Leo IV., son of Constantine, emperor, 775-779. Constantine, son of Leo, emperor (779-797), with Irene, his mother, as regent. Irene has her son blinded and deposed, 780, and reigns until 803. The accession of a woman a pretext for transferring the crown from the Eastern Empire to the Western.	Abd-er-Rahman I. (756-788) receives the caliphate of Cordova in Spain from the Arab chiefs. Saracens expelled from Southern Gaul, 759. Caliphate in Spain divided into six provinces. Residence of Abbasside caliphs transferred from Damascus to Bagdad, 750. Al-Mahdi, caliph at Bagdad, 775-785. Spanish march established by revolting Christians, after 778. Al-Hadi, caliph at Bagdad, 785-786. Harun-al-Rashid, caliph at Bagdad, 786-809. Bagdad the center of learning and civilization. The height of power and splendor of the eastern caliphate.	Military feudalism in Japan. Persia becomes the center of Abbasside rule after 750. Arabia loses the pre-eminence which Mohammed had given it and yields to Persian greatness. Many principalities enjoying complete independence arise in Arabia. Inroads of the Tatars in China almost incessant from 763 to 780.
	Cynewulf, early English author, writes two short poems.	Slaughter of 4,500 Saxons on the Aller, 782; result, a formidable uprising, 783. Charlemagne successful at Detmold and on the Hase. Surrender (785) of Wittekind, who became a Christian. First landing of Danes, 787.				Mohammedan invasion of India.
	Christianity introduced into Saxony by Charlemagne, 785.	Second revolt of the duke Tassilo; result, duchy of the Bajuvariæ (Bavarians) disestablished, 788. Wars with the Slavs and the Northmen. Wiltzi defeated by Charlemagne, who proceeded to the Peene, 789.	First recorded landing of the Northmen in Britain on coast of Devonshire, 787; invasion, 789-866.			
	Learning encouraged by Charlemagne, who founded schools, monasteries, and cathedrals, 790. Irish monks visit Iceland, 795.	War with the Avars, 791-799. Uprisings among Saxons in the North, who took refuge with the Danes. War with the Danes, 793-804. Frankish march invaded by Gottfried, king of Denmark. Coasts of the German Ocean harassed by Danes. King's Ring, principal camp of the Avars, stormed, 796.			Hisham I., ruler of caliphate at Cordova, 788-796. Al-Hakem I., ruler of caliphate at Cordova, 796-812.	Capital of the Japanese empire, the home of the mikado and the kuge, permanently fixed at Kyoto, near Lake Biwa, 794.

From the Time of Charlemagne to the Death of Hildebrand, 768-1085 A. D.

A. D.	Discoveries, Arts, Crafts.	Franks Under Carolingians.	England.	Other Countries.
768		Frankish empire annexed the country between the Raab and the Ems, 796. Kingdom of the Avars soon destroyed. Pope Leo III., driven from Rome (799) by relatives of his predecessor, went to Charlemagne's camp at Paderborn; re-established in Rome by Charlemagne.		Western Africa or Mauretania separated from Egypt and formed into a Mohammedan kingdom by Idris, 789.
800	Couriers instituted by Charlemagne, 800. Canonization instituted by Pope Leo III., 800. St. Mark's at Venice begun, 800.	Office of Emperor of the West revived by Charlemagne, who was crowned emperor by Leo III., on Christmas Day, 800. Ludwig, son of Charlemagne, strengthened the Spanish march, 801. Charles, eldest son of Charlemagne, repulsed the Danes, who retreated beyond the Eider, 808. Charlemagne conducted in person war against Gottfried, king of Denmark, 810. Gottfried murdered by his own servants. Peace with the Danes. Saxony north of the Elbe retained by the Frankish kingdom. Wends conquered. Charlemagne's residences were Aachen (Aix-la-Chapelle), in Austrasia, Ingelheim, and Nymwegen. Imperial rescripts (capitularii). Men of all rank, both laymen and churchmen, members of the assemblies. Alcuin a resident at the court of Charlemagne.	Ecgberht, king of Wessex, 802-837; Cornwall made tributary; Beornwulf of Mercia defeated at battle of Ellandune, 825; Essex and all England south of the Thames subjugated. Ecgberht overlord of Northumbria and Mercia, 828; submission of Wales, 828. All England south of the Forth, except, possibly, Strathclyde, united under Ecgberht.	Barcelona taken from the Moors by the Franks, 801. Nicephorus I., Eastern emperor (802-811), tributary to Harun-al-Rashid. Bulgarians invade the Eastern Empire and slay Nicephorus I., 811. Leo V., the Armenian, Eastern emperor (813-820), defeats the Bulgarians. Michael, the Amorian, Eastern emperor (820-829), loses Crete to the Saracens. Beginning of the Moslem conquest of Sicily, 827. Theophilus, Eastern emperor (829-842), in constant war with the Caliphs. Mohammedans conquer Messina in Sicily, 833. Netherlands invaded and Utrecht sacked by the Northmen, 835. Antwerp burned and Flanders sacked by the Northmen, 836.
	The emperor Charlemagne establishes postal service, 807.	Counts of the border districts; governors of counties; imperial messengers, who periodically visited different parts of the empire to hear complaints, which they reported, with suggestions and observations, to the emperor.		Northmen make their first expedition up the Rhine, 837. Asia Minor invaded by the Caliph Motassem, 838. Amorian War, 838.
	Clergy large owners of land, and dominant in state affairs.	Ludwig the Pious (Louis le Débonnaire), son of Charlemagne, 814-840. Bernhard, nephew of Ludwig, king of Italy under supremacy of Ludwig, revolted, was captured and slain. Empire divided among sons of Ludwig, 817; Lothar given the imperial crown and the greater portion of the empire; Pipin, Aquitania; Ludwig, Bavaria.		Woo-tsung, emperor of China (841-847); temples destroyed, nunneries and monasteries closed; all foreign priests banished. Northmen sail up the Seine and sack Rouen, 842. Theodora, empress of the East, 842. Michael III., Eastern emperor, 842-867.
	Romualdus, French architect, flourishes, 830. He built the cathedral at Rheims.	New division of the empire (829) giving Karl, youngest son of Ludwig, the royal title and Alamannia. Rebellion of three elder sons of Ludwig; civil war. Ludwig the Pious deserted by his troops on the Field of Lies, near Colmar, Alsace, 833; captured (public penance in the church at Soissons); soon liberated by his son Ludwig, and established upon the throne, 834.	England under West Saxon kings, 828-1066. Sheppey devastated by the Northmen, 834. Ecgberht repulsed by the Danes, 834. Battle of Hengestesdun, 836; Ecgberht victorious over Danes and Welsh.	Ludwig, the German, 843-876. Wars with the Slavs, Charles the Bald, and Northmen. Simultaneous attack by Northmen upon all three Frankish kingdoms. Dublin taken by the Northmen under Olauf, 852. Eastern or Byzantine Empire ruled by the Macedonian line (867-1057). Magyars, Bulgarians, and Arabs attack the empire.
	Catechisms said to have been compiled in the ninth century, perhaps as early as 835.	Death of Pipin, 838; his part of the empire divided between Charles and Lothar, at which Ludwig rebelled.	Death of Ecgberht, 837. Æthelwulf, son of Ecgberht, 837-858.	Jarls or Vikings defeated at Hafurstfjord, 872. Rolf Ganger in Neustria, 876.
	Arabian literature at its height, 840.	Death of Ludwig the Pious, 840.	Picts and Scots united, 843. Kenneth II., Scotland.	Charles the Fat, son of Ludwig, 876-887; emperor, 881; king of the West Franks, 884; united again the monarchy of Charlemagne, except Burgundy; deposed by East and West Franks; abdicated, 887. Syracuse captured by the Saracens, 878.

From the Time of Charlemagne to the Death of Hildebrand, 768-1085 A. D.

A. D.	Discoveries, Arts, Crafts.	Franks Under Carolingians.	England.	Other Countries.	Caliphate.	Scandinavia.
800	Norsemen explore Faroe Islands and round the North Cape of Europe, 860. Naddod, Norseman, discovers Iceland, 861. Coast of Greenland explored by Gunnbjörn, a Norseman, 870. Drunkenness made an offense punishable by death by Constantine, king of Scots, 870. Time was measured in England by burning candles which lasted twenty-four hours, 886.	Battle of Fontanetum (Fontenay or Fontenaille), 841; Lothar defeated by Ludwig and Charles. Bi-lingual oath of Strassburg, 842. Treaty of Verdun, 843; imperial dignity retained by Lothar, who received the central Frankish lands (bounded by the Alps and Rhine in the east, the Rhône, Saône, Meuse, Scheldt in the west, and Frankish Italy); Ludwig the German given eastern part of the Frankish lands (between the Elbe and the Rhine), from which in time the German nationality developed: Charles the Bald given western part of Frankish lands, from which the French nationality gradually developed. **FRANCE.** Carolingian kings of the Franks, 843-987. Charles the Bald, 843-877. Jura, Meuse, Ourthe, French-German boundary. Normans in France, 860-932. Fiefs made hereditary, 877. Ludwig the Stammerer (Louis II., le Bègue), 877-879. Ludwig III. (Louis III.), in northern France, 879-882. Karlmann (879-882) in Aquitaine. Rebellion of Boso, duke of cisjurane Burgundy, 879. Ludwig victorious (881) over Northmen at Saucourt (Ludwigslied). Ravages of Northmen increase. Karlmann ruler of entire kingdom, 882-884. Charles the Fat of Germany (884-887) chosen king by the nobles; whole empire united. Deposed.	London and Canterbury captured by Danes, 851. Danes winter in Sheppey for the first time, 855. Æthelbald, son of Æthelwulf, 858-860. Æthelberht, brother of Æthelbald, 860-866. Æthelred I., brother of Æthelberht, 866-871. Northmen invade and conquer different parts of the country, 866-1003; settlement in Northumbria. Danes in East Anglia, 866; in Mercia, 868; conquer and settle East Anglia, 870. St. Edmund, king of the East Angles, a martyr. Croyland and Peterborough sacked. Danes in Wessex, 871. Nine battles with the Danes (871), who were defeated at Æscendun by Æthelred and his brother Ælfred. Ælfred the Great, 871-901. Guthorm, Danish king in East Anglia, entered Wessex, 876. Danes settled in Northumbria, 876. Lands in Mercia divided among the Danes, 877. Wessex ravaged by Danes, 878; defeated at Ethandun. Treaty of Wedmore between Ælfred and Guthorm; Danes abandoned Wessex, but received East Anglia and a part of Mercia; London retained by Ælfred. The greater part of England held by the Danes; called "Danelagh." Peace in Wessex, 880-893. Laws revised; judicial department separated from the executive. Fleet created, 882. Several Welsh provinces submit. Danes invade Kent, 893; defeated at Buttington.	Arnulf of Carinthia, 887-899, grandson of Ludwig, the German, defeated Northmen at Löwen, 891; allied with Magyars in invasion of Hungary, 893; crowned emperor, 896; founder of kingdom of Moravia. Ludwig, the child, Arnulf's grandson, 899-911; internecine feuds in Franconia. Conrad successful. Image worship fully restored in Eastern Empire.	Al-Mamun, son of Harun-al-Rashid, caliph at Bagdad, 813-833. Abd-er-Rahman II. (821-852), caliph at Cordova. Government of Mohammedan Spain was the best in Europe at the time.	Godfrey, king of Jutland, in contest with Charlemagne. Halfdan the Black, king of Norway, 841-863; subjugated many petty kings. Dublin conquered by Olauf of Norway, 852. Discovery and settlement of Iceland, by Norwegians, 860-875, etc. Gorm the Old (about 860-935), first king of all Denmark; persecuted Christianity until forced by Henry I. of Germany to desist. Harald Haarfager, king of Norway, 860-933; son of Halfdan; completed conquest of Norway and introduced feudal system. The Jarls defeated at Hafurstfjord, 872. Great migration of the Jarls, the most famous of the vikings. Erik Emundsson, king of Sweden, made important conquests in the East; died 885 ?. Slavs subjugated by Swedes. Settlement of Swedes around Novgorod, the foundation of the future Russian Empire.
900	Alfred the Great establishes a mint at Oxford (879), and builds a fleet of galleys, 897. Arabic figures brought into Arabia from Hindustan, 900. Horn used for window lights in England, 900. Mints established in England, 928.	Northmen under Rolf (Rollo) obtain permanent foothold on the Seine (Normandy), 911?; feudal sovereignty over Brittany. Treaty of St. Claire sur Epte. Rollo baptized under name of Robert. Battle of Soissons, 923; Robert, duke of France, brother of Eudes, previously proclaimed king, slain. Charles III. imprisoned by Herbert of Vermandois; died, 929. Flight of Eadgyfu (Edwina), wife of Charles III., with her son Ludwig IV., to her brother Æthelstan, king of England. Death of Rudolf of Burgundy, 936. Louis IV., 936-954.	Death of Ælfred, 901. Eadward the Elder, son of Ælfred, 902-925. Fortresses erected along Mercian frontier. The Five Boroughs (Derby, Leicester, Lincoln, Nottingham, Stamford) conquered by Æthelflæd, "Lady of the Mercians," daughter of Ælfred the Great. Mercia added to Wessex. Essex and East Anglia conquered. Strathclyde and all the Scots submit, 924. Eadward lord of all Britain; died, 925. Æthelstan, son of Eadward, 925-940. League of Danes, Scots, and Welsh crushed, 926. League renewed, but shattered by defeat of the allies at battle of Brunanburh, 937. Eadmund, brother of Æthelstan, 940-946. Scots and Danes revolt. The Five Boroughs and the Danelagh reconquered. Malcolm, king of Scots, given Cumberland as a fief.	Mohammedan invasion of India, 900. Five Chinese dynasties (Later Leang, Later Tang, Later Tsin, Later Han, Later Chow), 907-960. Independent states in Szechuen, Ho-nan, and other provinces of China. Conrad I. of Franconia, 911-918, elected by nobles. Henry I., the Fowler, 919-936. Otto, the Great, king, 936.	Abd-er-Rahman III., ruler of Cordova, 912-961; assumed title of caliph, 929. The *emir al omra* (935) given entire secular power; the caliph the spiritual head. Egypt independent under Fatimites, 969. Seljuk Turks (Togrul Bey, Alp Arslan, Malek Shah) become *emirs al omra*, Seljuk supremacy.	Erik Blodöxe king of Norway, 930-934. Haakon, king of Norway, *c.* 930-961. Harold Bluetooth (Blaatand), king of Denmark, 935-985. War between Norway and Denmark.

From the Time of Charlemagne to the Death of Hildebrand, 768-1085 A. D.

A. D.	Discoveries, Arts, Crafts.	France.	England.	Italy and Germany.	Scandinavia.
900	Triangular masonry bridge at Croyland abbey, probably built about 930. Cotton grown and manufactured in Spain, about 950. Linens and woolens manufactured in Holland, 950. Candlesticks used in Britain in the days of king Edgar, 959.	Ludwig from Beyond Seas (Louis IV., d'Outremer), 936-954; recalled by the nobles. Civil war between the king, Hugh the White, or Great, and Otto, king of Germany. Lothar, (954-986); son of Ludwig; influenced by Hugh Capet, son of Hugh the Great. Invasion of Otto II. of Germany. Ludwig V. (Louis le Fainéant), 986-987. With his brief and troubled reign the direct line of Charlemagne is extinct.	Eadmund murdered, 946. Eadred, brother of Eadmund, 946-955. Rebellion of the Danes quelled, 954; final submission of the Danelagh. Eadwig, nephew of Eadred, 955-959. Dunstan, abbot of Glastonbury, driven from the country. Eadgar, the under king of Mercia, 958-975; brother of Eadwig; Dunstan, the true ruler, recalled, 958. Large fleet maintained. Laws revised. Edward the Martyr, son of Eadgar, 975-978. Æthelred II., the Unready, son of Eadgar, 972-1016.	Magyars ravage Germany, 908; defeated Ludwig near the Lech, 910. Tribute paid to the Magyars. Deadly feuds in Franconia; Rudolph, bishop of Würzburg, of the family of Conrad of Hesse, against Adalbert of Babenberg. Conradines victorious. Adalbert slain in front of his castle. Death of Ludwig the Child, 911. Crown refused by Otto the Illustrious, duke of Saxony. Conrad I. of Franconia, 911-918; elected by the nobles. Incursions of Slavs, Magyars, and Danes. Incessant war between Conrad I. and West Franks and with his own subjects in the effort to obtain their acknowledgment of his sovereignty. Lotharingia, except Alsace, annexed to kingdom of the West Franks. Kings and emperors of the Saxon house, 919-1024. Henry I., the Fowler, 919-936; unificator of the German empire. Arnulf, duke of Bavaria, and Burkhard, duke of Alamannia (Swabia) forced to recognize Henry's supremacy. Fresh invasion of the Magyars (Hungarians), 924. Nine years' truce with Magyars: peace in Thuringia and Saxony procured by payment of tribute. Lotharingia recovered, 925. Otto I., the Great, 936-973.	Harold of Denmark forced by Otto II. of Germany to consent to introduction of Christianity, 975. Svend Forked Beard (Tveskjaed), king of Denmark, 985-1014. Greenland discovered and settled by Erik the Red of Norway, 985. Vinland (America) seen by Bjarne, visited by Leif and others, 986-1011. Harald Graafell, Hakon Jarl, king of Norway, 988-995. Tributary Wends successfully revolt against Denmark. Olaf, the Lapp king, 993-1024; first Christian king of Sweden. Svend of Denmark in England, 994. Olaf Tryggvasson, king of Norway, 996-1000.
	A "London bridge" said to have existed in 978. Arabic numerals introduced into Spain, 980. Greenland rediscovered (983) by Erik the Red, who colonizes Greenland, 985. Arabic numerals introduced into France by Gerbert, 991.	Capetian dynasty, direct line, 987-1328. Hugh Capet, 987-996. In 987, six great principalities (later called Lay Peerages): Aquitaine, Burgundy, Champagne, Flanders, Normandy, Toulouse. Feudal nobles very powerful. Paris the new capital. Charles the Carolingian captured. Robert II., 996-1031. Incessant wars with the nobles. Rising of the serfs, 997.	Beginning of Danish invasions, 980. Death of Dunstan, 988. Battle of Maldon against the Danes, 991; Brihtnoth, ealdorman of the East Saxons, slain. Ten thousand pounds raised by a special tax (Danegeld) to buy off the Danes, 991. Kent devastated (994) by Swegen (Svend) and Anlaf (Olaf Tryggvasson), who were paid 16,000 pounds. Almost incessant ravages of the Northmen, 997-1015.		War of Swedes with St. Olaf of Norway.
1000	The clock escapement said to have been invented in the eleventh century; sometimes ascribed to Gerbert, about 1000. Newfoundland, Nova Scotia, coast of New England, discovered by Leif Erikson, son of Erik the Red, 1000?. Feudal system introduced into Scotland, 1008. A London bridge built of wood, 1014; partly burned, 1136. Buschetto da Dulichio, Italian, architect of the cathedral of Pisa; flourished, 1016.	Suffering of the entire country as a result of the papal edict upon Robert II. because of his marriage with his cousin, Bertha of Burgundy.	Northmen given 24,000 pounds, 1002. All (?) Danes in England massacred (November 13, 1002), by order of Æthelred. Northmen given 36,000 pounds in 1007, 48,000 pounds in 1012. Death of Swegen, 1014; succeeded by his son Cnut (Canute). Danes again in possession of that part of England acquired in 878 by treaty of Wedmore. Death of Æthelred, 1016. Cnut chosen king by Danish party in England. Eadmund Ironside, son of Æthelred, chosen king by English party. Many battles between Danes and English, 1016. Eadmund defeated at Assandun; peace concluded. Eadmund given East Anglia, Essex, Wessex, London, and nominal overlordship of England; Cnut given Mercia and Northumbria. Death of Eadmund, 1016. Cnut king of England, 1016. Danish supremacy over England, 1016-1042. Cnut, 1016-1035. England divided into four governments: Wessex, under Cnut; East Anglia, Mercia, Northumberland under jarls or earls. Huscarls, Cnut's personal following. Cnut in Rome, 1027. Laws of Cnut, 1028. Malcolm, king of Scots, subjugated, 1031. Harold, son of Cnut, 1035-1040.	Hungary a kingdom, 1000. Roman revolt, 1001. Death of Otto III., 1002. Henry II. (the Saint), 1002-1024; son of Henry the Quarrelsome of Bavaria; elected king after the murder of his rival Eckard, margrave of Meissen. First expedition to Italy against Ardoin of Ivrea, 1004. Henry crowned king of Italy at Pavia, 1004. Wars with Boleslav, king of Poland, 1004-1018; Poland retained Lusatia, but was forced to give up Bohemia. Bishopric of Bamberg founded, 1007. Power of the church increased. Monasteries reformed. Public peace vigorously enforced. Henry crowned emperor at Rome, 1014. Ardoin submits, 1014; dies in a monastery, 1015. Normans settle in Italy, 1015. Rudolf III., last king of Burgundy (Arles), resigned in favor of Henry, who to secure this inheritance, went to war, 1016-1018. Wars with the Grecians in lower Italy, 1022. Death of Henry II., July 15, 1024. Franconian or Salian emperors, 1024-1125. Princes of all the tribes present for the first time at an election, 1024. Conrad II., 1024-1039. Rebellion (1025-1030) of Ernest, duke of Swabia, who claimed Burgundy (Arles) as the personal heir of Henry II. Conrad II. crowned king of Italy at Milan, 1026; Ravenna and Pavia compelled to submit. Conrad II. crowned emperor, 1027. The Eider made the boundary between Denmark and Germany, the former receiving Schleswig.	Knut the Great (1016-1035), king of Denmark and England; most of his time spent in England. Norway reunited under St. Olaf (II.), 1015-1030. Unsuccessful attempt of Ulf-Jarl to make Hardeknut king in Denmark; Ulf-Jarl afterwards killed by order of Knut. Christianity introduced into Norway. Knut proclaimed king of Norway, 1028. Magnus the Good, son of Olaf, king of Norway, 1035-1047. Hardeknut (Hathacnut) succeeded Knut, his father, in Denmark, 1035-1042. The Graagaas, or book of the law (Norway). War of Danes with Magnus of Norway concluded by the agreement that whoever outlived the other should inherit his kingdom.
	Science of optics greatly advanced by Alhazen, 1025. The scale of musical intervals, the *gamut*, mentioned by Guido Aretino, a Tuscan monk, 1025.	Famine, 1030-1032. Normandy given the Vexin on the Seine. Henry I., 1031-1060.			

From the Time of Charlemagne to the Death of Hildebrand, 768-1085 A. D.

A. D.	Discoveries, Arts, Crafts.	France.	England.	Italy and Germany.	Scandinavia.
1000	Mohammedan architecture reaches final fixed types, eleventh century; the golden age of the architecture of this people dates from the tenth century.	Truce of God (Treuga Dei), limiting the days available for warfare to eighty a year, introduced by the clergy, 1041.	Harthacnut, son of Cnut, 1040-1042. Godwine, earl of Wessex. Siward, earl of Northumberland. Leofric, earl of Mercia. Eadward, the Confessor, son of Æthelred, 1042-1066. Norman influence supreme at court. Godwine exiled, 1051; recalled (1052) and caused a general banishment of the French; died, 1053. Wales subjugated by Harold, earl of Wessex, 1063. Harold, earl of Wessex, shipwrecked on coast of Normandy (1064), became vassal of William, duke of Normandy, and promised to secure to him the succession to the English throne? Death of Eadward, 1066. Harold, earl of Wessex elected king, 1066. Succession claimed by William, duke of Normandy. Yorkshire invaded by Harold Hardrada, king of Norway, and Tostig, brother of Harold of England; invaders defeated and slain at battle of Stamford Bridge, September 25, 1066. Battle of Hastings or Senlac (October 14, 1066), between William of Normandy and Harold of England; Harold defeated and slain. Eadgar Ætheling, grandson of Eadmund Ironside, chosen king; soon submitted, with the chief men, to William. Norman kings, 1066-1154. William the Conqueror (1066-1087) elected king. Anglo-Saxons ill-treated and robbed of their estates. Northumbria and Mercia unsubmissive. Rebellion in the north aided by a Danish fleet under Swegen, 1068; Danes bought off by William, and insurgents crushed. Northumberland devastated by fire and sword. English revolt (1071) under Eadwin and Morkere; Eadwin defeated and slain; Morkere sought refuge with the outlaw Hereward at Ely, which was captured. The four large earldoms abolished, 1071. Shire the largest political division; sheriffs in each appointed by the king. Continental feudalism induced. Norman barons placed over lands of the English nobility. English Church reformed and organized by William. Mutiny of Norman barons in England soon quelled, 1075-1076. Rebellion of the conqueror's son Robert in Normandy, 1077-1080. Odo, bishop of Bayeux, William's brother, imprisoned for intrigue. Invasion from Denmark and Norway averted, 1085.	Poles under Mieczeslav II. devastated Germany to the Saale, and carried 10,000 prisoners to Poland. Hungarians unsuccessfully attacked, 1030. Ernest, duke of Swabia, slain in battle, 1030. Conrad II. victorious over the Poles, forcing them to surrender their prisoners; Lusatia restored to the empire, 1031. Mieczeslav a vassal of Conrad II., 1032. Death of Rudolf III. of Burgundy, 1032. Burgundy won from Odo, count of Champagne, heir of Henry II., and united with the empire; later the Romance portions along the Durance, Isère, Saône, and Rhône, were annexed to France. Small fiefs made legally hereditary in Italy; this was the custom in Germany. Second expedition of Conrad II. to Italy, 1036. Death of Conrad II. at Utrecht, 1039. Henry III. ("the Black"), son of Conrad II., 1039-1056. Imperial power at its height. Henry III. also, for a time, duke of Bavaria, Franconia, and Swabia; ducal throne in Carinthia long unoccupied. Peter, king of Hungary, reinstated by Henry III., became a vassal of the empire. Bavarian Eastmark extended to the Leitha. First expedition of Henry III. to Rome, 1046-1047. Synod compelled by Henry III. to depose the three rival popes (Sylvester III., Gregory VI., Benedict IX.), each accused of simony. Suidger, bishop of Bamberg, appointed Pope as Clement II. Henry III. crowned emperor by Clement II., Christmas, 1046. Three German popes in succession after Clement II. appointed by Henry III. Drogo, son of the Norman Tancred of Hauteville, invested with Apulia. Rebellion of Godfrey the Bearded, duke of upper Lotharingia; his province given (1049) to Alsatian count Gerhard, ancestor of house of Lorraine. Second Roman expedition, of Henry III., 1055; death at Gozlar, 1056. Henry IV., 1056-1106; his mother, Agnes of Poitou, regent. Carinthia given to Berthold of Zähringen; Bavaria to Saxon count Otto of Nordheim; Swabia to Rudolf of Rheinfeld. Henry IV., abducted from Kaiserswert to Cologne by Archbishop Anno, 1062. Archbishop Anno compelled to share administration of the empire with Adalbert, archbishop of Bremen (1065), against whom the princes conspired. Imperial Diet at Tribur, 1066. Adalbert banished from court for three years; death, 1072. Otto of Nordheim, duke of Bavaria, deposed; Bavaria given to his son-in-law Welf, son of Azzo of Este. Magnus, duke of Saxony, a prisoner. Saxon uprising; Henry's flight from the Harzburg, 1073; humiliating peace; the Harzburg destroyed. Contest with Pope Gregory VII. (Hildebrand), 1075-1085. Celibacy of the clergy strictly enforced.	Magnus, king of Denmark, 1042-1047. Svend Estridsen, king of Denmark, 1047-1074; nephew of Knut. Emund Gammle (the Old), last king of the Upsala line, in Sweden; died about 1056. Stenkil, king of Sweden, 1056-1066.
	Rise of Romanesque style of architecture in the eleventh century; it began in Germany, Italy, and France, later extending into England and Spain. Vow of celibacy required of all priests, 1073.	Philip I., 1060-1108. Normans conquer England, 1066.			Seventeen years' war of Denmark with Harold Hardrada of Norway ended in 1064. Harald III., Hardrada, king of Norway, founded Opslo (Christiania); slain at battle of Stamford Bridge, England, 1066. Magnus II., king of Norway, 1066-1069.
	Tide mills in use in Venice, 1078.				
	Omar Khayyám, a Persian astronomer, proposes a reform of the calendar similar to that later accomplished by Pope Gregory XIII.; error in this proposed calendar, one day in 5,000 years; error in Gregorian calendar, one day in 3,325 years, 1079.				Wars for two hundred years between the Gauta and the Svea, Sweden. Taking of Malta by the Normans, 1091. War of Danes with the Wends. Olaf, king of Norway, 1069-1093.
	Church of St. Mark's at Venice completed, 1085.				Harold Heyn, king of Denmark, son of Svend, 1077-1080. St. Knut, son of Svend, king of Denmark, 1080-1086.

Death of Hildebrand to the Fourteenth Century, 1085-1300 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1085	Compilation of the Domesday book, the record of a statistical survey of England in 1085-1086. It contains populations, information regarding ownership, state and area of cultivation, etc.	Oath of fealty from all under tenants to the king direct, 1086.	Normandy invaded by William II. of England, 1090.	Hermann of Salm set up as king by the Saxons; abdicates and dies, 1088.	Peter of Amiens (the Hermit, *c.*1050-1115) preaches the Crusade, 1095.	Nobles of Sweden attain supremacy in the Diet.	Seljuk supremacy in the East, 1080.
		William II., the Red, 1087-1100: second son of William the Conqueror.		Saxons, assured of their ancient privileges, submit.	Bands led by Peter, Walter of Pacy, Walter Senzaveir, and others, nearly annihilated in Hungary and Bulgaria.		
		Death of Lanfranc, 1089.	Peace with England, 1091.		First Crusade, 1096-1099.	Olaf Hunger, king of Denmark, 1086-1095.	
	A history of the kings of England from 449 to 1125 by William of Malmesbury, who was born 1095.	Revolt of the Norman barons in favor of Robert, eldest son of the Conqueror, quelled by aid of the English, 1090.	Normandy again invaded by William II., 1094.	Third expedition of Henry IV. to Italy, 1090-1097; generally unsuccessful except capture of Mantua.	Bishop Adhemar of Puy, first to take the cross at Clermont, papal legate.		
	Norwich cathedral, Anglo-Norman architecture, begun 1096.	Donald Bane, 1093-1098.			Nicæa surrendered, 1097.		
	Church of St. Saturnian, Romanesque style of architecture, dedicated, 1096.	Policy of confiscation, lessening power of the nobles, begun by William II., 1095.	Philip I. excommunicated, 1095.		Crusaders victorious over sultan Kilij Arslan at Dorylæum, 1097.	Erik Ejegod, king of Denmark, 1095-1103.	
	The first formal duel in England between William, count d' Eu, and Godfrey Baynard, 1096.	Edgar, nephew of Eadgar Ætheling, king of Scotland, 1098-1107.			Antioch besieged 1097-1098.		Empire of the Seljuks separated into several small sultanates, 1092.
		William II. partially successful in attempt to conquer Maine, 1098.			Crusaders in Antioch besieged by Kerboga.		
	Painting on glass practised in France and Germany, 1100.		Normandy pledged by Robert to William II. of England for 10,000 marks, 1096.	Rebellion of Conrad, son of Henry IV., 1092.	Seljuk army defeated.		
		William II. is threatened with excommunication, 1099.			Death of Bishop Adhemar of Puy, 1098.	Magnus III., Barfod, king of Norway, 1095-1103.	Portugal becomes a Castilian fief under Henry of Burgundy, 1095.
					Storm of Jerusalem; terrible massacre, July 15, 1099		
					Kingdom of Jerusalem established.		
					Sultan of Egypt defeated at Ascalon by Godfrey of Bouillon, Protector of the Holy Sepulcher, 1099.		Wars in Spain of Ruy Diaz, called by Arabs the Cid; died 1099.
	England's public records first regularly kept by order of Henry I., 1100.	Henry I., Beauclerc, 1100-1135.	Disastrous crusade of French princes and knights, 1101.	First crusaders, under Peter the Hermit and Walter of Perejo, cross Germany, 1096.		Orkneys, Hebrides, and Dublin conquered by Norwegians.	
1100		Charter issued, restoring the "Law of Edward the Confessor."		War with Conrad (dies, 1101).	Death of Godfrey, 1100.	Death of Magnus of Norway in Ireland, 1103.	
	Basilica of St. Clement's at Rome rebuilt, 1108.	Invasion of Robert of Normandy, son of the Conqueror, 1101.	War with Henry I. of England and Normandy, 1101-1119.	Henry V., son of Henry IV., 1106-1125.		Ejsten, Sigurd, Olaf, sons of Magnus, rule in conjunction in Norway.	Alphonso I. of Aragon, 1105-1134.
	It is said that tolls were first paid by vessels passing the Stade on the Elbe, 1109.	Rebel barons punished.	Louis VI., the Fat, 1108-1137.	Henry V. excommunicated.		Niels, king of Denmark, 1105-1135.	John the Good, Byzantine emperor (1118-1143), fought the Seljuks, Hungarians, Servians, and Armenians.
	Stone bridge erected at Bow, near Stratford, about 1109.	Henry invaded Normandy, 1104.	Battle at Brenneville, 1119; Louis VI. defeated by the English.	German princes revolt; Saxons victorious at Welfesholze, 1115.	Baldwin I., king of Jerusalem.	Pilgrimage to Jerusalem by Sigurd of Norway, 1107-1110.	
	Moorish tiles introduced into Italy, 1115.	Battle of Tinchebrai, 1106; Robert defeated and imprisoned.		War of the investiture ended, by Concordat of Worms, 1122.		Death of Ejsten and Olaf of Norway.	
	Cathedral of Pisa, Italy, completed, 1118.	Death of Henry's son William by sinking of the "White Ship," 1120.	Count of Flanders murdered, 1127.	Lothar of Saxony, 1125-1137; crowned by Pope Innocent II.		Sigurd sole ruler of Norway, 1122.	
	Tournaments were probably introduced into England, about 1125.	David I., Scotland, 1124-1153.	Letters of franchise granted to cities and towns by Louis VI., 1135.	Feudal homage of Bohemia.	Acre, Berytus (Beirut), Sidon, Tripolis, conquered with the aid of Genoa and Pisa.	Magnus the Blind, son of Sigurd, king of Norway, 1130.	
	Mint said to have been established at Winchester by Henry I., 1125.	Death of Henry I., 1135.	Marriage of the king's son Louis (VII.) with Eleanor, heiress of Gascony, Guyenne, and Poitou, 1137.	Wends driven back.		Wars over the succession in Denmark.	
	Granting of charters in England by Henry I., 1132.	Stephen of Blois, 1135-1154.		Mittelmark conquered by Albert the Bear, and called Brandenburg.		Erik Emun, king of Denmark, 1134-1137.	
		Charter of Oxford, 1136.		House of Hohenstaufen, 1138-1254.		Half the kingdom of Norway ceded (1134) to Harald Gille, who comes from Ireland and claims to be a son of Magnus Barfod.	
		Battle of the Standard, 1138.		Conrad III., 1138-1152.	Death of Baldwin I., 1118.		
		Matilda landed in England, 1139.		Ghibellines and Guelfs, 1140-1495.			
		Civil War, 1139-1142.	Louis VII., 1137-1180.	Death of Henry the Proud, 1139; Saxony claimed by his son, Henry; Bavaria, by his brother, Welf VI.			
		Battle of Lincoln, 1141; Stephen defeated and captured.			Baldwin II.; dies, 1131.	Civil war in Norway.	Aragon and Catalonia united, 1137.

Death of Hildebrand to the Fourteenth Century, 1085-1300 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1100	Cistercians in England.	Matilda elected "Lady of England" by the clergy.	Second Crusade, 1147-1149.	Battle of Weinsberg, 1140; Conrad victorious.	Fulco of Anjou; dies, 1143.	Erik Lamb, king of Denmark, 1137-1147.	Saladin, 1137-1193.
		War between Stephen and Matilda.		Death of Leopold of Austria, Oct. 18, 1141; Bavaria given to his brother, Henry Jasomirgott.	Edessa conquered (1144) by Emadeddin ('Imaded-Deen) Zenki, emir of Mossul; conquered and destroyed by his son Noureddin (Noored-Deen), 1146.	Sven III. made king of Denmark, 1147.	Tatars spread over China.
		Death of Robert of Gloucester, 1147.	Eleanor divorced; married Henry of Anjou (later king of England), conveying to him Gascony, Guyenne, and Poitou, for which Henry did homage to Louis.	Frederick of Swabia, nephew of Conrad, elected by the princes.	Second Crusade, 1147-1149; without result; leaders, Conrad III. of Germany, Louis VII. of France.	Bonder dynasty, Sweden, 1150-1250.	The kingdom of Portugal rounded, 1139.
	Chemistry introduced into Spain by the Moors, about 1150.	Henry of Anjou landed in England, 1153.		Frederick I., Barbarossa, 1152-1190.		Erik IX., the Saint, king of Sweden, 1150-1162.	Manuel Comnenus, Byzantine emperor (1143-1180), left the affairs in bad condition.
		Henry recognized as heir to the crown.		Diet at Merseburg.	Louis and the French nobility sail from Pamphylia for Antiochia.	Christianity introduced in every part of the kingdom of Sweden.	
		House of Anjou (Plantagenet) in the direct line, 1154-1399.		Convention of Constance between Frederick and the Papal See, 1153.			
	Edrisi of Sicily produces his geography, 1154.	Henry II., 1154-1189.		First expedition to Italy, 1154-1155.		Waldemar I., the Great, king of Denmark, 1157-1182.	Wars of Gen and Hei, rivals in Japan, 1156-1185.
	The exchequer (bureau for assessing and collecting taxes), reëstablished.	Resumption and restoration of estates.	Louis VII. married Constance of Castile (his second wife), 1154.	Frederick crowned king of Italy in Pavia; emperor at Rome.			
	Manufacture of silk encouraged in Sicily, *c.* 1146.	Ireland given to Henry II. by a bull of Adrian IV., 1157.		Diet at Würzburg, 1157.	Common soldiery reach Cilicia by land, and are annihilated by hunger and the enemy.		
	Convent church at Alcobaça, Portugal, built, 1148-1222.	Unsuccessful Welsh war, 1158.		Homage to the imperial power (Holy Roman empire) by nearly all states of the West.		Wends conquered by the Danes.	
		Scutage introduced.		Royal crown given by Frederick to the Bohemian duke Vladislav.			
		Second Welsh war, 1163.		Second expedition to Italy, 1158-1162.	Conrad goes by sea from Constantinople to the Holy Land (1148) and, with the French, unsuccessfully attacks Damascus.	Magnus V., king of Norway, 1161-1184.	
		Contentions between Henry II. and Becket.		Milanese revolt.			
		Danegeld abolished.		Quarrel between the emperor and the pope.			
		Constitution of Clarendon, 1164.		Alliance between Alexander III. and the Lombard cities.			
	Large quantities of sugar brought into Europe from Asia, 1150.	Becket tried and condemned; fled to France.		Third expedition (1163) to Italy, without an army.		Archbishopric of Upsala, Sweden, established, 1163.	
		Third Welsh war, 1165.		Fourth expedition to Italy, 1166-1168; Paschal III. conducted to Rome by Frederick.	Baldwin III., king of Jerusalem; dies 1162.		
		Assize of Clarendon, 1166.		Lombard League (1167) between cities of Lombardy and those of the Veronese March.			
		Dermod, king of Leinster, Ireland fled (1167) to Henry II.		Guelfs and Ghibellines united.	Amalric; dies, 1173.	Ancona, on island of Rügen, captured by the Danes, 1168.	
		Becket returned to England; quarreled with the king; murdered by knights of Henry's court, 1170.		Waldenses, 1170.			Leon and Castile separated again, 1157.
	Notre Dame cathedral of Paris built, 1163-1214.	Henry's expedition to Ireland, 1171.		Great Council of Venice, 1172.			
		Richard of Clare (Strongbow) made earl of Leinster.		Fifth expedition to Italy, 1174-1177; Lombardy entered over Mont Cenis.		Revolt in Skaania subdued by the Danes.	
		Southeastern part of Ireland submitted to Henry.			Pilgrimage to Jerusalem by Henry the Lion, 1172.		William the Lion, Scotland, 1165-1214.
	Origin of the public funding system in Venice, 1171.	Absolution of Henry, 1172.		Battle of Legnano, 1176.			
		Revolt of Henry's eldest son, Henry, and general league of English and French lords, William the Lion of Scotland, and Louis VII., against the king.		Reconciliation of the emperor and the pope, 1177.			Strongbow in Ireland, 1169-1170.
		Scotch invasion, 1173.		Henry the Lion put under ban of the empire and his fiefs declared forfeited, 1180.			
	The leaning tower of Pisa built, 1174-1350.	Penance of Henry II. at Becket's tomb, 1174.		Peace with the Lombard cities at Constance, 1183.			
		William captured; released upon acknowledgment of Henry's suzerainty, 1175.		Bremen, Hamburg, Lübeck, in time become free cities.			
	The Canterbury cathedral choir rebuilt, 1174-1184.						

Death of Hildebrand to the Fourteenth Century, 1085-1300 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1100	Chapter house at Bristol, Anglo-Norman architecture, built, 1155-1170. Football first mentioned in England, 1175. Late old *London Bridge* commenced by Peter of Colechurch, 1176. A bridge 3,000 feet long, with 18 stone arches, built over the Rhône at Avignon, 1180. Paris streets first paved by Philip Augustus, 1184. Church of San Michele at Lucca, Italy, built, about 1188. Mosque of Old Delhi, India, commenced, about 1190. Insurance said to have been in use in Italy, 1194. Standard weights and measures provided for England by the sheriffs of London, 1197.	Assize of arms, 1181. Militia service restored. Death of Henry the Younger, 1183. Conspiracy of Henry's sons, Richard and John, with Philip of France, 1189. Humiliation and death of Henry II., 1189. Richard I., Cœur-de-Lion, 1189-1199; away from England during most of his reign. Scotch king released, 1189. Eleanor, Richard's mother, regent during his crusade and imprisonment by the emperor. Jews persecuted. War caused by intrigues of the king's brother John and Philip of France; quickly suppressed after Richard's return, 1194. Richard in France at war with Philip. John Lackland, 1199-1216; recognized in England, secured Normandy.	Philip II., Augustus, 1180-1223. War with the count of Flanders, 1185; county of Vermandois and city of Amiens won by Philip II. (Third) Crusade with Richard Cœur-de-Lion. Philip attacked Normandy (1190), but with little success. Death of Richard Cœur-de-Lion, 1199. Philip took up but did not prosecute the claims in Normandy of Arthur, Richard's nephew, against Richard's younger brother John.	Sixth expedition to Italy, 1184-1186; peaceful. War between Henry, son of Frederick, and Henry the Lion; concluded, 1189. Henry VI., son of Frederick, 1190-1197. First expedition to Italy, 1191. Henry goes to Naples to rescue from Tancred the inheritance of his wife, Constance. Naples unsuccessfully besieged. War with Henry the Lion, 1192-1194. Second expedition to Italy, 1194. Henry threatened with excommunication (1194) for withholding from the pope the estates of Matilda. Diet at Würzburg, 1196. Third expedition to Italy, 1197. Philip of Swabia, youngest son of Frederick Barbarossa, 1198-1208. Otto IV. of Brunswick, son of Henry the Lion, 1198-1215 (1218). War for the crown between the house of Hohenstaufen and of Welf, 1198-1215.	Baldwin IV.; death, 1184. Baldwin V.; death, 1186 (not of age). Veit (Guy) of Lusignan; captured at Tiberias. Acre and Jerusalem conquered (1187) by Saladin (Salah-ed-Deen). Guy of Lusignan regains freedom and besieges Acre for two years, 1189-1191. Third Crusade, 1190-1192; conquest of Acre (St. Jean d'Acre) or Ptolemaïs; leaders, emperor Frederick I., his son Frederick of Swabia. Frederick I. conquered Iconium; drowned in the Calycadnus, Cilicia, 1190. Richard Cœur-de-Lion, king of England, and Philip II. of France go by sea to the Holy Land, 1190; reach Acre, 1191. Death of Frederick of Swabia, 1191. Acre compelled to surrender, July 1191. Philip quarrels with Richard; returns to France, 1191. Armistice with Saladin. Coast from Acre to Joppa given to the Christians.	Sverre, king of Norway, 1177-1202. Knut VI., king of Denmark, 1182-1202; son of Waldemar. Wends aided by the emperor Frederick I., 1184. Hither Pomerania and part of Mecklenburg submit to the Danes. Knut, "king of the Slavs." Expedition of the Danes to Esthonia. Lübeck and Hamburg conquered by the Danes. Adolf of Holstein captured by the Danes.	Alexius II., Byzantine emperor, 1180-1183. Andronicus I., Byzantine emperor, 1183-1185. Cyprus an independent sovereignty, 1184. Battle of Danno-ura in Japan; the downfall of the house of Hei, 1185. Angelus dynasty in the Byzantine empire, 1185-1204. Isaac II., Byzantine emperor, 1185-1195. Bulgaria, led by John Asen, revolts against the Byzantine empire and founds a new realm, capital at Tirnova, 1186. Alexius III., Byzantine emperor, 1195-1203.
1200	Troubadours flourish in England, Spain, and Italy, 1200-1300. Chimneys introduced in England, 1200. The *London Bridge* (begun, 1176) completed, 1209. Heavy cavalry covered with coat of mail; some horsemen had visors and skullcaps. Franco of Cologne invents "rests" in music, 1220. Robert de Lusarche, French architect, designed cathedral of Amiens; flourished, 1220.	Death of Arthur while in John's power, 1203. John lost Anjou, Maine, Normandy, Touraine, and a part of Aquitaine; restricted henceforward to his English kingdom. Death of Hubert Walter, archbishop of Canterbury, 1205. Disputed election. Stephen Langton elected archbishop of Canterbury by command of Innocent III., 1207; refused by John. Interdict upon England, 1208. John finally submits, receives Langton, and accepts his kingdom as a fief of the papacy, 1213. Barons refuse to follow John to France, 1213. John defeated at Bouvines, Flanders, 1214.	Quarrel between Philip II. and Innocent III.; Philip submitted, 1200. Philip again attacked Normandy. Fall of Château Gaillard. Normandy submitted, 1204. Summons to appear for trial on account of the murder of Arthur disobeyed by John; his fiefs declared forfeit. Storming of Beziers, 1207. County of Toulouse, conquered by Simon of Montfort, 1211-1215. War in Flanders with the feudal lords, supported by Otto of Germany and John of England; Philip, assisted by the cities, victorious at Bouvines, 1214.	Philip assassinated at Bamberg by the count palatine, Otto of Wittelsbach. Otto IV. crowned at Rome by Innocent III., 1209. Quarrel with the pope, who put forward Frederick, son of Henry VI., as anti-emperor, 1212. Battle at Bouvines, 1214; Otto IV., in alliance with England, defeated by Philip II., Augustus. Death of Otto IV. at the Harzburg, May 10, 1218. Frederick II. (also king of the two Sicilies), 1212-1250; opposes spiritual supremacy; was crowned German king in Aachen, 1215; promises to undertake a crusade. Henry, son of Frederick II., given Swabia, 1217; elected king of Rome, 1220.	Fourth Crusade, 1200-1204; Latin empire, 1204-1261; directed originally against Egypt; undertaken at instance of Pope Innocent III.; leaders, powerful French barons. Baldwin, count of Flanders, Boniface, marquis of Montferrat. Crusaders besiege Zara, in Dalmatia. Constantinople captured. Emperor unable to fulfill promise to the crusaders of union of Greek Church with that of Rome and large payments of money. Constantinople on fire. Greek populace revolt. Death of Isaac. Alexius murdered by Greeks. Constantinople again captured, partly burned.	Waldemar II., the Conqueror, king of Denmark, 1202-1241. Haakon III., king of Norway, 1202-1204. Guttorm the Child, king of Norway, 1204. Inge Baardsen, king of Norway, 1204-1217. Holstein granted as a fief to Waldemar's nephew, Albert of Orlamund. Oesel and a large part of Prussia conquered by the Danes. Waldemar II., of Denmark recognized Frederick II. as emperor and received a cession of all conquests in Germany, north of the Elbe and the Elde. Haakon IV., king of Norway, 1217(1223)-1262; crushes rivals.	Hojo family supreme in Japan, 1200-1333. Isaac II., Byzantine emperor (restored), 1203-1204. Alexius IV., Byzantine emperor, 1204. Alexius V., Byzantine emperor, 1204. Constantinople taken and sacked, 1204; Latin empire established (1204-1261). Latin line of Byzantine emperors, 1204-1261. Baldwin I., Latin emperor, 1204-1205. Mongols subjugate southern Russia, 1206. King John invades Ireland, 1210.

Death of Hildebrand to the Fourteenth Century, 1085-1300 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1200	Guido of Siena, first recognized Italian painter, flourishes, 1221.	Alexander II., Scotland, 1214-1249.	Philip's son Louis made unsuccessful expedition to England, 1216.	Frederick leaves Germany for fifteen years; renewed promises made to Innocent III. (feudal supremacy of papal chair over his hereditary domain, crusade); crowned at Rome by Honorius III.	Latin empire established, 1204; Baldwin, emperor.	Expedition of the Danes to Esthonia, 1219.	Genghis Khan (1206-1227) invades the Kin provinces of China, 1213; died, 1227.
		London occupied by the confederated lords, 1215.			Venetians given many coast districts and islands.		
		Magna Charta granted by John at Runnymede, June, 1215.			Marquis of Montferrat made king of Thessalonica.	The Danneborg, or national standard of Denmark, 1219.	Kublai Khan, 1216-1294.
		Pope declared the Magna Charta null and void.	Siege of revolted Toulouse; death of Simon of Montfort, 1218.	Henry, son of Frederick, crowned king at Aachen, 1222.	French dukes in Achaia, Athens, etc.		Arabians defeated at Tolosa, 1212.
	Franciscans arrive in England, 1224.	Langton suspended.			Greek empire established at Nicæa by Theodore Lascaris.		
		Crown declared forfeited by the French party among the barons and bestowed by them upon Louis, son of Philip of France.	Louis VIII., 1223-1226.	Promise of a crusade renewed, 1225.		Power of the clergy weakened in Norway.	Henry of Flanders, Latin emperor, 1206-1216.
		Louis comes to England, 1216.	Fresh crusade against the count of Toulouse, whose lands had been declared forfeit.	Diet at Cremona, 1226.	Empire of Trebizond established on coast of the Pontus Euxinus by a descendant of the Comnenes.		Peter of Courtenay, Latin emperor, 1216-1219.
	Drainage of London first provided for by legislative enactment, 1225.	Death of John Lackland, October 19, 1216.		Disputes with the Lombard cities, 1226.		Erik Eriksson Læspe, king of Sweden, 1223-1250; Birger Jarl the actual ruler.	Yolande, Latin emperor, 1219-1221.
		Henry III., of Winchester, 1216-1272; son of John; coronation secured by the English party.		Crusade begun, but broken up by a contagious disease, 1227.			Robert, Latin emperor, 1221-1228.
		William Marshall regent, 1216-1219.		Emperor placed under the ban by Gregory IX., 1227.			
		French fleet defeated off Thanet.	Louis IX. (St. Louis), 1226-1270.	Battle of Bornhövede, 1227. Danes are decisively defeated.	Children's Crusade, 1212; thousands of French and German boys, many of whom died on the way, many sold into slavery.	Waldemar II. of Denmark and his son captured (1223) by Henry, count of Schwerin, and imprisoned for three years in the castle of Danneborg, Hanover.	Ogdai, son of Genghis Khan, Mongol emperor in China, 1227-1241.
	Zinc mentioned by European writers, 1231.	Louis gives up contest and returns to France.		Crusade of Frederick II., 1228-1229.			
		Magna Charta twice reissued in a modified form.		Papal (key) troops driven by Frederick from his dominions, 1229.			
		Death of William Marshall.	Blanche, mother of Louis, regent during his minority; quelled revolt of the barons.	Peace with the pope at San Germano; ban removed, 1230.	Fifth Crusade, 1216-1220; Jerusalem regained for a short time; leader, Frederick II., emperor of the West.		
		England governed by Peter des Roches, Pandulf the papal legate, Hubert de Burgh the justiciary, and Archbishop Langton.		Legislation of Frederick in his Sicilian kingdom, 1230-1240; feudal relations regulated; representation of the cities.		Waldemar of Denmark obtained release from imprisonment by the count of Schwerin, by renunciation of his conquests south of the Elbe and in the Slavic countries and by payment of a large ransom.	John of Brienne, Latin emperor, 1229-1237.
	Gunpowder first used in cannon by the Chinese, 1234.			Rebellion of King Henry, in alliance with the Lombard cities and the lower German nobility, 1234.	Crusade of Andrew II., king of Hungary, 1217; without result.		Ferdinand III., Leon, and Castile, 1230-1252.
		Second coronation, 1220.	Inquisition as regular tribunal established by Pope Gregory IX.	Henry submits; imprisoned.			Fall of the Kin dynasty in China, 1232.
		Langton superseded Pandulf as legate, 1221.		Reconciliation with the Welfs.			
		Third reissue of the charter, 1223.		Diet at Mainz.			
			County of Toulouse between the Rhone, the sea, and the Pyrenees, acquired, 1229.	Enactment of a public peace; first law published in German as well as in Latin.	Egypt unsuccessfully attacked (1218-1221) by John of Brienne, "king of Jerusalem."	Renunciation of Waldemar of Denmark annulled by the pope.	Baldwin II., Latin emperor, 1237-1261.
	Church of San Antonio, at Padua, built, 1237-1307.	Beginning of Henry's personal government, 1227.		Successful campaign against the Lombards, 1236.			Retreat of Moors to Granada, 1238.
			Unsuccessful wars in France, 1232.	Frederick the Warlike of Austria, a follower of the rebel Henry, deposed and put under the ban, 1236.	Frederick II. goes by sea to Acre; receives from sultan Kameel (El Kámil) Jerusalem (where he crowned himself), Nazareth, a strip of land to the coast, and Sidon, on condition of a ten years' truce, 1229.	Battle of Bornhœved (Bornhövede), 1227; Waldemar of Denmark defeated in his attempt to regain Holstein.	Kiev devastated by the Mongols, 1239
			Sancerre, Chartres, Blois, ceded by Theobald of Champagne and Navarre, 1234.	Diet at Speier, 1237.			
		Fall of Hubert de Burgh, 1232; of Peter des Roches, 1234.		Conrad, second son of the emperor, crowned German king, 1237.			
	Wall tiles, domestic pottery, and vases mentioned in a charter of James I. of Aragon to the Saracens of Xativa, 1239.			Battle of Cortenuova, 1237.		Kingdom of Denmark divided among Waldemar's three sons, Abel receiving Schleswig.	Mongols defeat the Germans in the battle of Wahlstatt, 1241; then ravage Hungary.
		Great council henceforward called Parliament.	Macon purchased, 1239.	War of Frederick II. with Popes Gregory IX. and Innocent IV., 1239-1250.			

Death of Hildebrand to the Fourteenth Century, 1085-1300 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1200	A pharmacopœia and a list of equivalent drugs published by Nicholas Præpositus, 1240-1250.	Enormous sums of money exacted by the pope.	War with the nobles and their ally, Henry III. of England, 1242-1243; Louis IX. victorious.	Frederick excommunicated, 1239.	Jerusalem captured by the Kharesmians, 1244.	Death of Waldemar II. of Denmark, 1241.	Novgorod becomes important as a commercial republic, in fact, almost independent of Russia, though continuing to assert allegiance; only part of Russia to withstand the invasions of the Mongols (1239); finally submitted.
	Cathedral of Siena, Italy, begun.	Only Aquitaine and Gascony of the French possessions of the Angevines retained by Henry.	Albigenses exterminated, 1244.	Death of Gregory IX., 1241.		Civil war, strife for the succession, in Denmark,	
	Tiles first made by the English, probably about 1246.			Flight of Innocent IV. (1243-1254) to Lyons.			
	The first concordance of the Bible made under Hugo de St. Caro, 1247.	Alexander III., Scotland, 1249-1285.		Emperor deposed by the pope.		Erik, king of Denmark, 1241-1250.	
	Arnolfo, Florentine architect (1232-1310), began abbey and church of Santa Croce, Florence.	Return of Simon of Montfort, earl of Leicester, from the government of Gascony, 1253.	Marriage of Charles of Anjou, the king's brother, and Countess Beatrice, 1246.	Spiritual princes elect Heinrich Raspe (1246-1247), landgrave of Thuringia.			
	Cotton cloth made by the Chinese, 1250.	Richard, of Cornwall, king of the Romans, 1256-1271.		Heinrich defeated at Ulm by Conrad; dies, 1247.	Sixth Crusade, 1248-1250; without result; leader, Louis IX. of France (St. Louis).	Clergy become powerful in Sweden; forbidden to take oath of allegiance to the king, 1248; celibacy introduced.	
	The mariner's compass was known to the Swedes, 1250.	Parliament of Oxford, 1258.	(Sixth) Crusade of St. Louis, 1248-1250; Blanche regent.	William of Holland (1247-1256), second anti-king; no authority in Germany.		Folkunger dynasty, Sweden, 1250-1365.	
		Provisions of Oxford, a list of grievances presented by the barons.		Frederick defeated before Padua, 1248.			
		War between the king and the barons, 1262; arbitration of Louis IX., 1264.		Battle of Fossalta, 1249.	St. Louis captures Damietta, 1249; defeated by the Ayoubite sultan Toorán-sháh (Almoadan) on an expedition against Cairo, 1249; cut off from Damietta; captured with entire French army, April, 1250.	Waldemar, king of Sweden, 1250-1275; son of Birger Jarl.	Alfonso X., the Learned (1221-1284), king of Castile and Leon (1252-1282), author of the code of laws known as *Las Siete Partidas;* not officially promulgated as national law until 1348. The Alfonsine astronomical tables compiled under his direction.
		Provisions of Oxford annulled.		Treason (?) of Frederick's chancellor, Peter of Vinea, 1249.		Abel, king of Denmark, 1250-1252.	
	Earliest complete clock made by a Saracen mechanic, probably about 1250.	War renewed.	Henry of England given Périgord, the Limousin, and southern Saintonge; renounced claim to Normandy, Anjou, Maine, Poitou, northern Saintonge, Touraine.	Death of Frederick II., 1250.		Towns of Denmark began to send representatives to the council (Danehof).	
		Battle of Lewes, 1264; Henry III. and his son Edward defeated.		Conrad IV., son of Frederick, 1250-1254 (anti-king: William of Holland).		Christopher, king of Denmark, 1252-1259.	
	The police system in London may be said to have begun about 1253.	Treaty (Mise of Lewes), 1264; native counselors presented; new council arranged by a parliament in which there were added to the clergy and nobility four knights from each shire.		Conrad fought for his realm in Italy since 1252.	Treaty of peace delayed by overthrow of the Ayoubites by the Mamelukes.	War in Denmark concerning Schleswig, the king claiming it to have been a personal fief, the descendants of Abel, an hereditary fief.	
	Rubruquis reaches Karakorum, the ancient seat of the Mongol empire, 1254.	Council of Nine.	Wager of battle prohibited.	Hanseatic League (union of seaports and cities between the Baltic and the Elbe), 1241-1669.		Stockholm founded, 1255.	Lahore taken by the Moguls with great carnage, 1241.
	An association of French surgeons, Collége de St. Côme, organized by Jean Pitard, 1254.	Parliament of Simon of Montfort, January 20, 1265; first parliament to which representatives of the boroughs were called.	Feudal jurisdiction limited.	Separate alliance between Lübeck and Hamburg.	St. Louis coasts along Palestine; fortifies Acre and other coast cities; returns to France, 1254.	Large duchies assigned by Birger of Sweden to his other sons.	
		Edward released.		William of Holland slain in battle with the Frisians, 1256.		Contention in Denmark with the Archbishop Jacob Erland.	
		War renewed.	Right of appeal to the king from the feudal courts in all cases established.	Interregnum in Germany, 1256-1273.	Latin empire destroyed by Michael Palæologus of the Nicæan empire, 1261.	Erik Glippingsen, king of Denmark, 1259-1286.	End of caliphate at Bagdad, 1258.
		Battle of Evesham, August 4, 1265; Earl Simon defeated and slain.		Richard, earl of Cornwall (England), elected by a part of the princes; crowned at Aachen; recognized only along the Rhine.		Norway made influential among European nations.	
		Death of Henry III., November 16, 1272.	Arles, Cahors, Foix, and Forcalquier acquired, 1262.	Alfonso X. of Castile elected by the other princes; never came to Germany.	A new crusade openly preached, 1263.	Iceland conquered by Norway, 1260.	Seat of government in China transferred to Pekin, 1264.
	Marco Polo visits central Asia, China, India, Persia, 1271-1295.	Edward I., Longshanks, 1272-1307; devotes a year to Gascony; crowned in England, 1274.		Manfred, son of Frederick II., chancellor of the two Sicilies for the minor king Conradin, son of Conrad IV.; later (1258), king.	Mohammedans take Antioch, 1268.	Submission of Greenland to Norway.	
	St. Peter's College, Cambridge, founded by Hugh de Balsham, 1284.	Court separated (1275) into three tribunals: Exchequer, King's Bench, Common Pleas.	Second (seventh) crusade and death of St. Louis, 1270.	Charles of Anjou given the crown by the pope.	Seventh Crusade, 1270; without result; leader, Louis IX. of France (St. Louis).	Haakon of Norway defeated in expedition against Scotland; died, 1262.	Byzantine empire restored by the Palæologi, 1261-1453.
				Battle at Beneventum, 1266; Charles of Anjou conquers and slays Manfred.		Magnus Lagabœter, son of Haakon IV., king of Norway 1262-1280.	Michael VIII., Byzantine emperor, 1261-1282.
				Charles of Anjou king of Naples and Sicily.			Andronicus II., Byzantine emperor, 1282-1328.

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A. D.	Discoveries, Arts, Crafts.	England.	France.	Italy and Germany.	Crusades.	Scandinavia.	Other Countries.
1200	Andrea da Pisa, Italian architect (1273-1349), designed castle of Scarperia, and the bronze doors of the Baptistry at Florence.	Financial, legal, and legislative reforms.	Philip III., le Hardi (the Rash), 1270-1285.	Conradin accompanied Frederick of Baden (Frederick of Austria) to Italy; defeated on Lago di Celano, 1268; put to death at Naples.	Nazareth captured by Prince Edward (later king Edward I.) of England, 1271.	The Hebrides and Isle of Man ceded to Scotland by Norway.	Henry Crassus, king of Navarre, 1270.
		Conquest of Wales, 1276-1282.	Philip IV., le Bel (the Fair), 1285-1314.			New code of Norwegian laws collected and published, 1264-1279.	The Mongol or Yuen dynasty established in China, 1275.
	Florence Academy of Fine Arts founded, 1270.		Civil (Roman) law introduced and developed.			Death of Birger Jarl of Sweden, 1266.	
	Velvet was known probably as early as 1272.	Prince Llewellyn forced to cede the coast as far as Conway, 1277.	Ecclesiastics ineligible to parliament, 1287.	Genoa powerful under Doria, 1270-1284.		Waldemar, king of Sweden, imprisoned (1275) by his brother Magnus, duke of Södermanland.	Missionaries introduced into China by Marco Polo, 1275.
			Edward I., of England, renounces his claims to Normandy and receives 10,000 livres from Philip.	Death of Richard, earl of Cornwall, 1271.			Nicholas III., 1277-1280.
	England's first commercial treaty signed with the Flemings, 1272.	Llewellyn and his brother David rebel, 1282.	Strife between English and Norman sailors, 1292-1293.		At Tunis, Louis IX. and the greater part of the army are victims of disease.	Magnus, king of Sweden, 1279-1290.	Peter III., king of Aragon (1276-1285); conquers Sicily, 1282.
	First English gold coin struck, probably about 1275.	Death of Llewellyn, 1282.		Rudolf of Hapsburg, 1273-1292.			
	Cathedral of Strassburg, Germany, nave finished, 1275.	David hanged, drawn, and quartered, 1283.	La Rochelle sacked.			Erik, priesthater, king of Norway, 1280-1299.	Reign of Diniz or Dionysius I. in Portugal, 1279-1325; "the father of his country"; he built 44 cities or towns.
	Clock placed in the old palace yard, London; it remained until the 16th century.	Wales annexed to England, 1284.	Edward I. of England surrenders Guienne to Philip as security.	Ottocar of Bohemia defeated in the battle of Marchfeld, 1278; the result was the establishment of the Hapsburg dynasty in Austria.		War between Denmark and Norway over dowry of Ingeborg, mother of Erik of Norway.	
		Title "Prince of Wales" hereafter given to heir of the crown.					
		Over 16,000 Jews expelled from England, 1290.	Edward's fiefs declared forfeited.				Sancho IV., king of Leon and Castile, 1284-1295.
	Spectacles said to have been invented about this date by Salvinus Armatus of Pisa, 1280.	Interregnum, 1290-1292.				War (1284-1285) between Norway and the Hansa towns. Erik of Norway defeated.	
		Baliol, heir to Scottish throne, becomes king of Scotland, 1292.		Papal states recognized by the emperor Rudolf of Hapsburg, 1278.			Joanna of Navarre marries Philip the Fair of France, 1284.
		Revolt of Madoc in Wales, 1294.	England (1292-1297) defeated in Gascony and Flanders.				
	The great conduit," the first cistern of lead in London, built, 1285.	War with France, 1294.					Crown of Navarre united to that of France, 1284-1328.
		War with Scotland, which joined France.			Mamelukes storm Acre (Ptolemaïs), 1291.	Erik Menved, king of Denmark, 1286-1319.	
		Berwick captured, 1296.	Quarrel with Pope Boniface VIII., 1296-1304.	Sicilian vespers, 1282; all the French in Sicily massacred.			Margaret of Scotland, 1285-1290.
		Scots defeated at Dunbar, 1296.					
		Crown resigned by Baliol, 1296.				The queen mother regent in Denmark, 1286.	The last sultan of the Afghan slave dynasty assassinated, and sultan Jelal-uddin ascends the throne, 1290.
	Clock costing £30 put up at Canterbury cathedral, 1292.	Scotch coronation stone carried to London, 1296.	Ecclesiastical property taxed.				
		Scots under Sir William Wallace revolt, 1296-1298.					
		Barons refuse to follow Edward to Flanders, 1297.		Naval power of Pisa destroyed by Genoa, 1284-1299.		Birger, son of Magnus, king of Sweden, 1290-1319.	
	Roger Bacon said to have been familiar with the magnet's property of pointing to the north, 1294.	Reissue of the Great Charter and the forest charter, 1297.	The Flemings defeated at Furnes, 1297.				League of the Forest Cantons, Switzerland, 1291.
		Truce with France, 1298.					
		Scotland invaded by Edward, 1298.	Peace with England concluded, 1299.	Peter of Aragon king of Sicily; Charles of Anjou limited to kingdom of Naples.		Torkel regent in Sweden, 1290-1306.	James II., king of Aragon; surnamed the Just, 1291.
		Battle of Falkirk, 1298; defeat of Scots.					
	The camera-obscura said to have been constructed by Roger Bacon.	Appeal to the pope, who claimed suzerainty over Scotland.	Flanders annexed to France.	Boniface VIII., 1294-1303.	Christians abandon their last possessions in Palestine (Berytus, Sidon, Tyre), 1291.	Haakon V., king of Norway, 1299-1319.	Ferdinand IV., king of Leon and Castile, 1295-1312.

Fourteenth Century to the Invention of Printing, 1300-1450 A. D.

A. D.	Discoveries, Arts, Crafts.	England and Scotland.	France.	Germany.	The East.
1300	Paper made from rags, 1300. Glass mirrors first made at Venice, 1300. Introduction of Arabic figures into England, about the year 1300. Oldest known Chinese work treating of ceramic art, 1325. Glass windows, 1345. First gold wire made in Italy, 1350. William de Wykeham, English architect, flourishes. Built New college, Oxford; rebuilt part of Winchester cathedral; and planned a portion of Windsor castle, 1375.	Bruce, king of Scotland, 1306-1329. Edward II., 1307-1327. Bannockburn, 1314. Edward II. deposed and murdered, 1327. Edward III., 1327-1377. Mortimer and Queen Isabella rulers until 1330. Peace of Northampton. David II., Scot., 1329-1370. Edward III. claims the French crown. Baliol seizes crown of Scotland, 1332. War renewed, 1332-1363. David Bruce gains Scottish throne, 1341. Battle of Neville's Cross, 1346; Crécy, 1346. Black Death, 1348-1349. Battle of Poitiers, 1356. Peace of Bretigny, 1360. Robert II., Scotland, 1370-1390. Black Prince dies, 1376. Richard II., 1377-1399. Tyler's rebellion, 1381. Robert III., Scotland, 1390-1406 Richard II. deposed and imprisoned, 1399. House of Lancaster, 1399-1461.	Quarrel between Philip IV. and the pope renewed, 1301-1305. Parliament of Paris, 1302-1771. Papal residence removed to Avignon, 1309-1376. Order of Knights Templars abolished, 1312. Louis X., the Quarrelsome, 1314-1316. Philip V., the Tall, 1316-1322. Charles IV., 1322-1328. House of Valois, 1328-1498. Philip VI., 1328-1350. Hundred Years' War with England, 1339-1453. English victory at Sluys, 1340. Calais captured by English, 1347. John II., the Good, 1350-1364. Charles V., 1364-1380. Du Guesclin, constable of France, 1370. Charles VI. (1380-1422) king when 11 years old; being seized with madness, the dukes of Burgundy and Berry are regents, 1392.	Henry VII., 1308-1313. Conflict for 12 years between Ludwig of Bavaria (1314-1347) and Frederick the Fair of Austria (1314-1330) for the crown of the Holy Roman Empire, at the end of which time they are joint sovereigns until the death of Frederick. The Swiss Cantons rebel against the claims of Austrian supremacy; battle of Morgarten (1315); Swiss independence. Emperors of the Luxemburg Bohemian line, 1347-1437. Charles IV., 1347-1378. Persecution of the Jews, 1349. The Golden Bull of Charles IV. made the fundamental law of the empire, 1356.	Osman I. founded the supremacy of the Osman (Ottoman) Turks in Asia Minor about 1300. Urchan, son of Osman I., 1326-1359. Tamerlane, 1336-1405. Murad I., 1359-1389. Adrianople residence of the sovereigns, 1365. Bajazet I., son of Murad I., 1389-1403. Battle at Nicopolis, 1396; Bajazet victorious over the allied French, Hungarians, and Poles.
1400	Beginning of the period of the "Renaissance," culminating with Michelangelo and Raphael. Prince Henry of Portugal, encourages Portuguese voyages of discovery, 1415-1460. London streets paved, 1453.	Henry IV., 1399-1413. Battle of Shrewsbury, 1403. Prince James of Scotland captured, 1405. Henry V., 1413-1422. War with France, 1415-1420. James I., Scotland, 1423-1437. Henry VI., 1422-1461. Wars between England and Scotland, 1434-1436.	Henry V. of England captures Harfleur, and wins the battle of Agincourt (1115). Rouen captured (1417); treaty of Troyes (1420); Henry marries daughter of Charles VI. and becomes regent and heir of France. Charles VII. (1422-1461), at first recognized south of the Loire only; in the north, Henry VI., infant son of Henry V., is acknowledged king, the duke of Bedford regent. Siege of Orleans (1428); raised by Joan of Arc (1429); Charles crowned at Rheims (1429). Joan of Arc burned at Rouen, 1431.	Wenzel, eldest son of Charles IV. (1378-1400), deposed, 1400. Rupert, count palatine, 1400-1410. Sigismund, 1410-1437. Council of Constance, 1414-1418. John Huss burned, 1415. Hussite War, 1419-1436. Battle of Prague, 1426. Emperors of the House of Hapsburg, 1438-1740. Albert II., son-in-law of Sigismund, 1438-1439. Frederick III., last emperor crowned at Rome, 1442-1493 Printing practised by Gutenberg, 1450.	Battle at Angora, 1402. Bajazet I. defeated and captured by Timur Lenk (Tamerlane). Death of Bajazet I. in Tamerlane's camp, 1403. Mohammed I., 1413-1421. Murad II., 1421-1451. Mohammed II., 1451-1481. Conquest of Constantinople by Mohammed II., 1453; Eastern Empire destroyed.

From the Invention of Printing to the Reformation, 1450-1517 A. D.

A. D.	Discoveries, Arts, Crafts.	England and Scotland.	France.	Germany.	America.
1450	Cut metal type invented by Gutenberg of Mentz, 1450. Cast metal type first used, 1450. First certain date of copper-plate engraving, 1461; said to have been known in Germany, 1450. Arquebus, an old form of hand firearm, in use, 1465. Gunther Zainer introduces printing in Augsburg, 1468.	Cade's rebellion, 1450. Wars of the Roses (Red Rose of Lancaster, White Rose of York), 1455-1485. Battle of St. Albans, 1455. Battle of Bloreheath, 1459. Battle of Northampton, 1460; York victorious. Battle of Wakefield, 1460. Battle of Mortimer's Cross, 1461. Second battle of St. Albans, 1461. House of York, 1461-1485. Edward IV., 1461-1483. Battle of Towton, 1461. Hedgeley Moor and Hexham, 1464. Battle of Stamford, 1470. Battle of Barnet, 1471. Battle of Tewkesbury, 1471. Death of Henry VI. in the Tower, 1471.	English expelled from France, 1453. Louis XI., 1461-1483. Pragmatic Sanction of Charles VII. revoked. Conspiracy of League of Public Weal (1464); battle of Montlhéry; treaty of Conflans, 1465. Edward IV. of England, in alliance with Burgundy, invaded France, 1475. Bayard, 1476-1524. War of Charles the Bold with the Swiss cantons. Charles the Bold defeated in the battles of Granson, 1476; Murten (Morat), 1476; defeated and slain in battle of Nancy, 1477.	Wars with France caused by the marriage (Aug. 18, 1477) of Frederick's son, Archduke Maximilian, with Mary, daughter and heiress of Charles the Bold, duke of Burgundy. Duchy of Burgundy lost to France, 1477. War with the Netherlands.	

Fourteenth Century to the Invention of Printing, 1300-1450 A. D.

A. D.	Spain and Portugal.	Italy.	Russia.	Scandinavia.	Other Countries.
1300	Peter IV., king of Aragon, 1336-1387; suppressed the power of the nobles. In Castile, war between Peter the Cruel (1350-1369) and his brother, Henry of Trastamara (1369-1379); Peter aided by England, Henry by France. Peter the Cruel of Castile defeated and slain by his brother Henry, 1369. The Schism, 1378. Legitimate line of Burgundy in Portugal became extinct, 1383. Illegitimate Burgundian line in Portugal, 1385-1580. John of Gaunt in Spain, 1386. Ceuta and Tangiers captured by Portugal. Voyages and discoveries under the patronage of the Infant, Henry the Navigator (1394-1460) of Portugal.	Dante Alighieri banished from Florence, 1302. Milan under the Visconti as imperial viceroys from the time of the emperor Henry VII., 1308-1313. Death of Dante Alighieri at Ravenna, September 14, 1321. Struggle of Venice and Genoa, 1350-1381. Conspiracies in Venice; the doge Marino Falieri executed, 1355; the Council of Ten. Tyrants in Italy, 1364-1380. Naples under the elder line of Anjou until the death of Joan I., 1382; under the younger (Durazzo) until the death (1435) of Joan II., 1386-1435. Decline of Genoa. Venice powerful. Corfu acquired by Venice, 1387. Florence powerful. Milan under the Visconti as dukes since 1395.	Kiev conquered by the Lithuanians, 1320. Moscow the national center. War with the Tatars, 1380. Moscow burned, 1383. Tamerlane invades Russia, 1395.	Magnus Smek, king of Sweden, 1320-1363; of Norway, 1320-1350. Christopher II., king of Denmark, 1320-1334; driven out by Geert, count of Holstein, but returns. Waldemar IV., king of Denmark, 1340-1375. Haakon VI., king of Norway by his father's gift, 1350-1380. Copenhagen plundered by the Hanseatic League. Albert of Mecklenburg, king of Sweden, 1365-1388. Olaf, king of Denmark, 1375-1387; his mother, Margaret, regent; king of Norway, 1380-1387. Margaret, queen of Norway and Denmark, 1387; and of Sweden, 1388-1397. Union of Calmar, 1397; uniting Norway, Sweden, and Denmark.	Woo-tung, emperor of China, 1307-1311. Jin-tsung, emperor of China, 1311-1320. Hojo family in Japan exterminated, 1333. Casimir the Great of Poland, 1333-1370. Poland a power in Europe under Casimir. Louis the Great of Hungary, 1342-1382; period of greatest power. Swiss Confederation, 1351. Hung-woo (1368-1398), founds the Ming dynasty in China. Turks buy off the Mongols from the Punjab. House of Luxemburg in Hungary, 1387-1437. Austro-Swiss war, 1385-1460. Winkelried at Sempach, 1386. Tartary subjugated by China.
1400	Alphonso V., of Aragon and Naples, 1416-1458. Porto Santo and Madeira discovered by Portuguese, 1418-1419; Cape Verde, 1445; Azores, 1447.	Medici family acquired princely rank in Florence about 1400. Sicily again united with Aragon, 1409. Naples conquered by Alfonso V. of Aragon, 1435. Venice, the three terrible state inquisitors, since 1439. Line of the Visconti in Milan became extinct, 1447. Milan a republic; power seized by Francesco Sforza (husband of a daughter of the last Visconti), who became duke of Milan, 1450.		Erik, king, 1412-1439. Danes renounce allegiance, 1438; and the Swedes in 1439. Flight of Erik to Gothland, 1439. Christopher of Bavaria elected by the Danes, 1439-1448. Union of Calmar broken by Sweden after the death of Christopher, 1448. Christian I., king of the Union, 1448-1481.	Yung-lo, emperor of China, 1403-1425. Philip the Good, duke of Burgundy, 1419-1467. Vladislav III., king of Poland (1440-1444), defeated and slain by the Turks at Varna. Vladislav Postumus, king of Poland with John Hunyadi regent, 1444-1458. Ching-tung, emperor of China (1436-1465), captured by Tatars, 1450. Swiss confederacy practically independent, after the victory over the Germans at Ragaz, 1446.

From the Invention of Printing to the Reformation, 1450-1517 A. D.

A. D.	Spain and Portugal.	Italy.	Russia.	Scandinavia.	Other Countries.
1450	Marriage (1469) of Ferdinand the Catholic of Aragon (1479-1516) and Isabella of Castile (1474-1504), before either ascended the throne. Ferdinand and Isabella joint rulers, 1479-1504.	Ferdinand I., king of Naples, 1458. Death of Cosimo (Cosmus) de' Medici, "father of his country," 1464.	Ivan III., the Great, 1462-1505; founder of the united monarchy.	Danes elect Christian of Oldenburg, while the Swedes elect Charles Knutson. Charles compelled to resign Norway to Denmark. Charles Knutson loses Sweden through an insurrection, 1457. Christian I. crowned king of the three kingdoms, but obliged to contend with Charles Knutson for the throne of Sweden, and, after the death of Charles, with Sten Sture to whom had been committed the administration of the kingdom of Sweden, 1470.	Constantinople taken, 1453. Turks defeated at Belgrade by John Hunyadi of Hungary, 1456. Hungary powerful. Matthias Corvinus, king of Hungary, 1464-1490. Ching-hwa, emperor of China, 1465-1488. First regular assembly of the states-general in the Netherlands, 1477; followed by the "Groot Privilegie" or Magna Charta of Holland.

From the Invention of Printing to the Reformation, 1450-1517 A. D.

A. D.	Discoveries, Arts, Crafts.	England and Scotland.	France.	Germany.	America.
1450	Caxton's press in England, 1474.	Edward V., April-June, 1483. Richard, duke of Gloucester, regent.	Death of Louis XI., 1483.	Frederick III., at war with Matthias Corvinus, king of Hungary, driven from Austria; restored by Maximilian after the death (1490) of Corvinus.	Landing of Columbus on Guanahani, one of the Bahama Islands, Oct. 12, 1492; Cuba, Oct. 28.
	Printed musical notes first used, 1476.	Richard III., 1483-1485.	Extinction of the House of Anjou.		First colony (Navidad) on Haiti.
	Watches first made at Nuremberg, 1477.	Murder of the princes in the Tower, 1483.	Charles VIII., 1483-1498.		Second voyage of Columbus, 1493-1496.
	A kind of large pistol, called the "petronel," came into use, 1480.	Battle of Bosworth Field, 1485.	Charles marries Anne of Brittany, 1491.	Death of Frederick III., 1493.	Land—Prima Vista, Cape Breton Island (?), Newfoundland(?)—discovered by John and Sebastian Cabot, 1497.
		House of Tudor, 1485-1603.			South America discovered by Vespucci, 1497.
		Henry VII., 1485-1509.		Maximilian I., 1493-1519; first took the title of "Roman emperor elect."	Third voyage of Columbus, 1498-1500.
		Battle at Stoke, 1487.			Second voyage of Vespucci, 1499-1500.
		James IV., of Scotland, 1488-1513.			Columbus accused at court, sent in chains to Spain (1500), but released immediately upon his arrival, and treated with distinction.
		War with France caused by the annexation of Brittany by Charles VIII., 1491.	Houses of Orléans and Angoulême, branch line of house of Valois, 1498-1589.	Diet of Worms, 1495; perpetual public peace.	
1500	The clock first made use of in astronomy, 1500?	Henry VIII., 1509-1547.	Louis XII., 1498-1515.		Newfoundland discovered by Cortereal, 1500.
		War with France, 1512-1514.	Naples conquered (1501) by Louis XII.	Aulic Council established, 1501.	Voyage of Vespucci under a Portuguese commander, 1501.
	First coach brought from Scotland to France, 1501?		French defeated on the Garigliano, 1504.		
	Sugar refining introduced into Europe by a Venetian, 1503.	Battle of Guinegate, France, 1513; Henry VIII. and Emperor Maximilian victorious.	Holy League formed (1511) by Venice, Ferdinand, and the pope, to drive the French from Italy.	League of Cambray (1508) between Maximilian, Pope Julius II., Ferdinand the Catholic, and Louis XII., against Venice.	Fourth and last voyage of Columbus, May 11, 1502-Nov. 7, 1504.
	English shillings first made, 1503-1504.		Battle of Novara; French defeated by the Swiss.		Columbus shipwrecked at Jamaica, 1503.
	Discovery of Madagascar by the Portuguese, 1506.	Battle of Flodden Field, 1513; James IV. of Scotland (allied with France) defeated and slain.	Peace with the pope, Spain (1513), the emperor, and Henry VIII., 1514.	Pope's withdrawal from League of Cambray.	Death of Columbus at Valladolid, 1506.
		James V., of Scotland, 1513-1542.	Francis I, 1515-1547.		Florida explored by Juan Ponce de Leon, 1512.
	Solis, Spaniard, reaches La Plata, 1516.	Thomas Wolsey made cardinal and chancellor, 1515; papal legate, 1517.	Swiss defeated and Milan reconquered by the victory of Marignano, 1515.	Diet of Cologne, 1512.	Pacific ocean discovered by Vasco Nuñez de Balboa, 1513.
			Treaty of Geneva, 1515.	Maximilian joins the Holy League against France, 1513.	
			Treaty of Fribourg, 1516.		
			Concordat with the pope, 1516.		

From the Reformation to the Abdication of Charles V., 1517-1556 A. D.

A. D.	Discoveries, Arts, Crafts.	England and Scotland.	France.	Germany.	America.
1517		Henry VIII. given title "Defender of the Faith," by Pope Leo X.	Meeting of Francis I. and Henry VIII. near Calais, 1520; "Field of the Cloth of Gold."	Beginning of the Reformation, 1517.	Hudson Bay discovered by Sebastian Cabot, 1517.
	Circumnavigation of the globe by Magellan's expedition, Sept. 20, 1519-Sept. 6, 1522.	Wolsey sentenced; pardoned; died, 1530.	Order of Jesuits founded by Ignatius Loyola, 1534.	Luther's ninety-five theses nailed upon the church at Wittenberg, 1517.	Cortez, Spaniard, conquers Mexico, 1519-1521.
		Henry's divorce from Catharine of Aragon pronounced by Cranmer, Archbishop of Canterbury; annulled by the pope.	Wars with Charles V.	Charles V., 1519-1556.	
	The musket said to have been used in the armies of Charles V., 1521.	Henry VIII. married Anne Boleyn, Jan. 25, 1533; excommunicated.	Political rights of the Parliaments restricted.	Luther excommunicated, 1520.	Magellan Strait sailed through by Magellan, 1520.
		Act of Supremacy, 1534.	Calvin at Paris, 1532-1534.	Diet of Worms, 1521.	
	Insurance policies first used in Florence, 1523.	Reformation in England.	Brittany annexed to France, 1532.	Ban of the empire pronounced against Luther.	
		Mary, queen of Scotland, 1542-1567.	Protestants persecuted.	First war of Charles V and Francis I., 1521-1526.	
	Manufacture of soap begun in London, 1524.	Ireland made a kingdom, 1542.	Death of Francis I., 1547.	Battle of Pavia, 1525.	
		Battle of Solway Moss, 1542.	Henry II., son of Francis I., 1547-1559.	Peasants' War, 1525.	
	Ballot box said to have been used in electing aldermen in London, 1526.	France invaded, 1545.	Growing power of house of Guise.	War with the Turks, 1526-1532.	Pizarro conquers Peru, 1532-1533; rules, 1533-1536.
		Edward VI., 1547-1553.	War with Charles V., 1552.	Louis II., king of Hungary, slain in battle of Mohacs, 1526.	
		Mary the Catholic, 1553-1558.	War with Charles V., 1552.	Second war of Charles V. and Francis I., 1527-1529.	
	Spinning wheel invented by Jergens, 1530.	Catholic bishops restored.		Peace of Cambray, 1529.	Canada discovered by Jacques Cartier, 1534.
		Execution of Lady Jane Grey (1554) and her husband.		Diet at Augsburg, 1530.	
		Protestants persecuted, 1555.		Peace of Nuremberg.	
	First portable clock made, 1530?	Cardinal Pole, Archbishop of Canterbury and papal legate, 1556.	Bishoprics of Metz, Toul, and Verdun seized.	Fourth war of Charles V. and Francis I., 1542-1544.	
				Peace of Crespy, 1544.	
				Council of Trent, 1545-1563; not attended by Protestants.	
				Battle of Mühlberg, 1547.	
				Peace of Augsburg, 1555.	
				Abdication of Charles V. at Brussels, 1556.	

From the Invention of Printing to the Reformation, 1450-1517 A. D.

A. D.	Spain and Portugal.	Italy.	Russia.	Scandinavia.	Other Countries.
1450	Spanish inquisition, 1481-1525. Conquest of Granada (capital of the last Moorish kingdom in the peninsula), Jan. 2, 1492. Golden Age of Portugal. Acquisitions in America for the crown of Castile. That part of world not possessed by any Christian prince divided between Spain and Portugal by a bull of Pope Alexander VI., 1493. Emanuel the Great of Portugal, 1495-1521. Discovery of the ocean route to the East Indies by Vasco de Gama, 1498.	Cyprus given to Venice by Catharine Cornaro, 1489. Alexander VI., pope, 1492-1503. Death of Lorenzo de' Medici, 1492. Invasion by Charles VIII. of France, 1494. Peter de' Medici driven from Florence. Savonarola excommunicated; executed, May 23, 1498.	Republic of Novgorod subjugated, 1478. Mongol supremacy in Russia overthrown by Ivan Vasilovitch, 1480.	Sten Sture, administrator of Sweden, 1470-1520. Battle of Brunkeberg; Christian defeated, 1481. Death of Christian I., 1481. Succession of John of Denmark (1481-1513). Union of Calmar renewed (1483), but John could never establish himself firmly in Sweden. Birth of Gustavus Vasa, 1496.	Hung-che, emperor of China, 1488-1506. Hungary and Bohemia united under Ladislaus II., 1490-1516. Philip the Handsome, sovereign of the Netherlands, 1493-1506. Ching-tih, emperor of China, 1506-1522.
1500	Conquest of Cuba, 1500. Conquest of Naples for the crown of Aragon, 1501-1504. Death of Isabella, 1504. Conquests on the coasts of Barbary, 1505-1510. Treaty of Villafafila: Philip regent, 1506. Death of Philip, 1506. The League of Cambrai, 1508-1509. Ferdinand again regent. Holy League against France, 1511-1513. Conquest of Navarre, 1512-1515. Death of Ferdinand, 1516. Charles I. (V.), 1516-1556.	Naples conquered by Louis XII. of France and Ferdinand the Catholic, 1501-1504. Julius II., pope, 1503-1513. Naples an appanage of Spain since 1504. The Medici restored in Florence by victory of the Holy League, 1512. Leo X., pope, 1513-1521.	Ivan IV., Russian czar, 1533-1584.	Christian II., king of Denmark and Norway (1513-1532), seeks allies for the purpose of reducing Sweden.	Louis II., last king of Hungary and Bohemia, 1516-1526.

From the Reformation to the Abdication of Charles V., 1517-1556 A. D.

A. D.	Spain and Netherlands.	Italy.	Scandinavia.	India.	Other Countries.
1517	Revolt in Castile suppressed; absolute monarchy established, 1518-1522. Charles I. of Spain, king of Germany and emperor-elect, as Charles V., 1519 1556. Reformation in the Netherlands, 1521-1555; severe measures for repression instituted 1523. Persecution and extermination of the Moors in Spain, 1524. The Pragmatic sanction, 1549. Abdication of the throne of the Netherlands by Charles V.; the accession of Philip II., 1555.	Medici a second time expelled from Florence, 1527. Genoa freed from French supremacy (1529) by Andrea Doria, who gave the republic a new constitution. Alexander de'Medici appointed hereditary ruler in Florence by Charles V., 1530. Cosimo (Cosmus) de' Medici, duke of Florence, 1537. Inquisition established by Pope Paul III., 1542. Unsuccessful conspiracy of Fiesco in Genoa, 1547. Pope Paul IV. (Caraffa), 1555-1559.	War waged upon Sten Sture by Trolle, who was captured, 1517. Christian II. and French allies repulsed near Brännkirka, 1518. Massacre of Stockholm, 1520. Successful insurrection by Gustavus Vasa, 1521-1523. House of Vasa in Sweden, 1523-1654. Gustavus I., Vasa, king of Sweden, 1523-1560. Throne of Sweden made hereditary. Christian II. deposed. Frederick I. (his uncle), king of Denmark and Norway, 1523-1533. Union of Calmar dissolved, 1523. Denmark and Norway united. Spread of Reformation. Feuds of the counts in Denmark, 1533. Christian III., son of Frederick I., king of Denmark, 1536-1559.	Mughal (Mogul) Empire, 1526-1761 (1857). Battle of Panipat, 1526; sultan of Delhi defeated by Babar, a descendant of Tamerlane. Rajputs of Chittor defeated, 1527. Humayun, son of Babar, 1530-1556. Sher Shah, Afghan ruler of Bengal, expelled Mughals from India. Return of the Mughals under Humayun's son Akbar, 1556. Afghans defeated by the Mughals at Panipat, 1556.	Soliman II., the Magnificent, sultan of Turkey, 1520-1566. Turks at war with the Hungarians, 1521-1526. Portuguese established at Macao, China, about 1522. Battle of Mohács, August 29, 1526. Turks at war with Charles V., 1526-1532. Rival kings of Hungary, 1527. Turks before Vienna, 1529. After 1541 Hungary divided into three parts. Tatars under Yen-ta invade China in the reign of Kea-tsing, 1542. Japanese fleet harasses the coast of China.

Abdication of Charles V. to the Assassination of Henry IV. of France, 1556-1610 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Germany.	America.
1556	First step in photography—effect of light on horn silver observed by Fabricius, 1556. Tobacco brought into Europe possibly from Mexico, 1559. Copper mines discovered in England, 1561. Peaches brought from Persia into England, 1562.	Loss of Calais, 1558. Elizabeth, 1558-1603. Thirty-nine articles adopted, 1563. Abdication of Mary, queen of Scots, 1567. Drake sails around the world, 1577. James VI., of Scotland, 1578-1625. Risings in Ireland, 1579-1580. Battle of Zutphen; death of Sir Philip Sidney, 1586. Babington conspiracy against Elizabeth, 1586. Mary, Queen of Scots, beheaded, 1587. Defeat of the Spanish Armada, 1588. Rebellion in Ireland, 1597.	War with Philip II. of Spain, 1556-1559. Francis II., 1559-1560. Charles IX., 1560-1574. Catharine de' Medici regent. Wars of the Huguenots, 1562-1598. Night of St. Bartholomew, 1572. Henry III., 1574-1589. Holy League, 1576. War of the Three Henrys, 1585-1589. House of Bourbon, 1589-1792. Henry IV., 1589-1610. Battle of Ivry, 1590. Edict of Nantes, 1598.	Ferdinand I., emperor, 1556-1564; king of Hungary and Bohemia since 1526. Constant warfare over Hungary, a great part of which was lost to the Turks. Maximilian II., 1564-1576. War with the Turks and with Zapolya, prince of Transylvania. Death of Sultan Soliman II. before Sigeth, 1566. Truce with Selim II., 1566. Reaction against Protestantism.	Slaves brought by the English to America, 1563. Frobisher's voyages, 1576, 1577, 1578. Drake touches the west coast of North America and claims the country between 38° and 42° N. for England, 1579. Sir H. Gilbert claims Newfoundland for England in right of the discovery by the Cabots, 1583. Raleigh's settlement on Roanoke Island, 1585; expedition to Guiana, 1595.
1600	Forks in use on Continent about 1600. Dutch reach Australia, 1601. Silk cultivated in England, 1604. The telescope introduced into England, 1608.	House of Stuart, 1603-1649. Union of the crowns of England and Scotland James I. of England and VI. of Scotland, 1603-1625 Gunpowder plot, 1605. Pilgrims to Delft, 1609.	Henry IV. assassinated by Ravaillac, 1610.	Rudolf II., 1576-1612. Protestant Union (1608) led by Frederick IV., elector Palatine. Catholic League (1609) led by Maximilian, duke of Bavaria. Rudolf forced by his brother Matthias to cede Austria, Hungary, and Moravia.	Champlain sails up St. Lawrence, 1603; founds Quebec, 1608; discovers Lake Champlain, 1609. Port Royal, Nova Scotia, founded by French, 1605. Jamestown settled, 1607. Hudson skirts coast from Newfoundland to Chesapeake Bay: sails up Hudson River in search of a northwest passage, 1609.

From the Assassination of Henry IV. to the Death of Cromwell, 1610-1658 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	France.	Germany.	America.
1610	Logarithms invented by Napier, 1614. W. Baffin, of England, enters Baffin Bay, 1616. Napier perfects the theory of decimal fractions, 1617. First horses in Massachusetts, 1629-1630.	Weakening of loyalty by the unpopularity of James. Charles I., 1625-1648. Petition of Right, 1628. The Long Parliament, 1640-1653. Battle of Edgehill, 1642. Marston Moor, 1644. Naseby, 1645. Charles I. beheaded, 1649. Montrose beheaded, 1650. Commonwealth under Oliver Cromwell, 1653-1658.	Louis XIII., 1610-1643. Maria de' Medici, regent, 1610-1617. Cardinal Richelieu, 1624-1642. The French Academy founded, 1635. War with Spain, 1635. Louis XIV., 1643-1715. Cardinal Mazarin, 1643-1661. Disturbances in the Fronde, 1648-1653.	Matthias, 1612-1619. Thirty Years' War, 1618-1648. Ferdinand II., 1619-1637. Battle of Prague, 1620. Wallenstein, 1625-1634. Siege of Stralsund, 1628. Battle of Lützen, 1632. Ferdinand III., 1637-1657. Treaty of Westphalia, 1648.	St. Johns, N.F., settled, 1613 Dutch on Hudson, 1614. Pilgrims at Plymouth, 1620. Dover, N. H., settled, 1623 English in N. Scotia, 1624 Maine settled, 1625. Swedes in Delaware, 1627. Salem settled, 1628. Maryland settled, 1634. Connecticut settled, 1635. Providence settled, 1636. Delaware settled, 1638. Montreal founded, 1642. N. Carolina settled, 1653.

From the Death of Cromwell to the Death of Louis XIV. of France, 1658-1715 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	America.	France.	Germany.
1658	Versailles built, 1661-1687. Marquette and Joliet discover upper sources of Mississippi, 1673. Rebuilding of St. Paul's cathedral begun by Wren, 1675. La Salle sails on the Great Lakes, 1679; Father Hennepin sails up the Mississippi, 1680; La Salle takes possession of the valley for Louis XIV., and calls it Louisiana, 1682.	Richard Cromwell, protector, 1658-1659. Restoration of monarchy, Charles II., 1660-1685. Corporation act, 1661. Act of uniformity, 1662. War with Holland, 1665-1667. Great Plague in London, 1665. War with France, 1666-1667. Treaties of Breda, 1667. Declaration of Indulgence, 1672. Test act, 1673. Titus Oates plot, 1678. Habeas Corpus act, 1679. Whigs and Tories, 1679. Rye House plot, 1683. James II. king, 1685-1688. Monmouth's rebellion, 1685.	François de Laval, bishop of New France, 1659. South Carolina settled, 1659. Charter of Connecticut granted, 1662. Grant of Carolina to Earl of Clarendon, 1663. Charter of Rhode Island and Providence Plantation, 1663. Grant to James, duke of York and Albany, of the New Netherlands, from the Connecticut to the Delaware, 1664. New Amsterdam surrendered and name changed to New York, 1664. Acadia restored to France, 1667. Hudson Bay Company incorporated, 1670. Kingston, Canada, founded, 1673. King Philip's War, 1675-1676. Bacon rebellion in Virginia, 1676. La Salle in the West, 1678. New Hampshire separated from Massachusetts, 1680. Hennepin's discoveries on the Mississippi, 1680. Pennsylvania granted to William Penn, 1681.	Peace of the Pyrenees ends war with Spain, 1659. Louis XIV. assumes personal government on the death of Mazarin (1661). Colbert controls the finances, 1662-1683. War with Spain over the Netherlands, 1667-1668. Triple Alliance of England, Holland, and Sweden compels Louis to sign peace of Aix-la-Chapelle, 1667. War of conquest against Holland, 1672-1678. Peace of Nimeguen restores Dutch possessions and establishes peace of Europe, 1678-1679. Louis at the height of his power, 1680. Revocation of the Edict of Nantes, 1685.	Leopold I., emperor, 1658-1705. First war with the Turks (1661-1664) ended by a truce for twenty years. War of the empire against Louis XIV., 1674-1679. Second war with the Turks, 1682-1699. Hungarian conspiracy foiled, 1683. Vienna unsuccessfully besieged by the Turks, 1683. Turks defeated at Mohacs, 1687.

Abdication of Charles V. to the Assassination of Henry IV. of France, 1556-1610 A. D.

A. D.	Spain and Netherlands	Italy.	Scandinavia.	India.	Other Countries.
1556	Philip II., 1556-1598 Moors and Protestants persecuted, War of liberation of Netherlands, 1568-1648. Battle of Lepanto, 1571. Pacification of Ghent, 1576. The Union of Utrecht, 1579. Independence of Netherlands declared, 1581. Spanish Armada, 1588. Philip III., 1598-1621.	Venice lost commercial supremacy through the discovery of sea route to India. Galileo Galilei (1564-1642) taught at Florence. Turks took Cyprus from Venice, 1573. Gregory XIII. (1572-1585) revised the calendar. Sixtus V. (1585-1590) suppressed the bandits in the papal states.	Erik XIV. of Sweden. John III. of Sweden. Augsburg Confession was received at Upsala, 1530. Christian III. (1534-1559) of Denmark and Norway, completes the work of the reformation. Frederick II. of Denmark and Norway, 1559-1588. Christian IV., of Denmark and Norway, 1588-1648.	Akbar the Great of India, 1556-1605. Akbar's empire includes India north of the Vindhya Mountains, 1594.	Oki-Machi, mikado of Japan, 1558-1588. Turkish power declines after the death of Soliman II., 1566. Lung-King, emperor of China, 1567-1573. Poland seizes Livonia. Moscow burned by the Crim-Tatars, 1571. Western Siberia conquered by Russia. Jesuits ordered from Japan, 1588. Feodor (1584-1598), last sovereign of the House of Rurik. Boris Godunoff chosen czar of Russia by the nobles (1598-1605).
1600	Moors (500,000) expelled from Spain. Twelve years' truce with Holland, 1609.		Sigismund of Poland in Sweden, 1593-1604. Charles IX., of Sweden, 1604-1611.		Christianity preached in China by Ricci the Jesuit, 1603. Iyeyasu (1603-1616), first Tokugawa shogun of Japan (1603-1868). Demetrius, the imposter, crowned in Russia, 1605. Revolt and civil war in Russia, 1606-1610. Moscow taken by Ladislas of Poland, 1610.

From the Assassination of Henry IV. to the Death of Cromwell, 1610-1658 A. D.

A. D.	Spain and Netherlands.	Italy.	Russia.	Scandinavia.	Other Countries.
1610	Spanish-Netherlands War renewed, 1621. Philip IV., 1621-1665. Death of Maurice, 1625. Frederic Henry, 1625-1647. John DeWitt grand pensionary of Holland, 1653.	War of the Mantuan succession, 1627-1631. Venice struggles with the Ottomans.	Michael Feodorovitch (1613-1645) founds the house of Romanoff. Growth of Russian and decrease of Polish power. Alexis, 1645-1676. Code of laws introduced by Alexis. Victories of Russians over Polish, 1654.	Gustavus Adolphus, 1611-1632. Oxenstierna, 1583-1654. Sweden obtains Riga and Livonia from Russia, 1617-1621. Tilly defeated by Gustavus, 1631. Christina, 1632-1654. Charles X., 1654-1660.	Waning power of Turkey. Independence of Portugal, 1640. Fall of the Ming dynasty in China, 1644. Cretan War with Turkey, 1645-1669.

From the Death of Cromwell to the Death of Louis XIV. of France, 1658-1715 A. D.

A. D.	Spain and Portugal.	Italy.	Scandinavia.	Russia.	Other Countries.
1658	By the Peace of Pyrenees war with France is ended, and Louis XIV. marries Maria Theresa, daughter of Philip IV., 1659. Death of Philip IV., 1665. Charles V. of Spain, 1665-1700. Louis XIV. claims the Spanish Netherlands, and declares war (1667-1668), by which Spain loses 12 fortified towns. Peace of Lisbon, 1668. By the second war (1672-1678) Spain lost to France several possessions.	Turks defeated by the Venetians, 1661 and 1662. Germany and France help Venice. Turks retain Candia, 1669. Savoy makes war on Genoa, 1670. Dutch and Spanish fleets in the Mediterranean, 1676.	Charles X., Gustavus of Sweden, invades Denmark successfully, 1658; unsuccessfully, 1658-1659. Frederick III. (1648-1670) of Denmark receives absolute authority, 1660. Charles XI., king of Sweden, 1660-1697. Peace of Oliva between Sweden and Poland, 1660. Peace of Copenhagen between Sweden and Denmark, 1660, by which Denmark cedes all of the southern peninsula. Peace of Kardis between Sweden and Russia, 1661. Sweden, an ally of France, defeated by the elector of Brandenburg at Fehrbellin, 1675. Sweden, by the treaty of St. Germain-en-Laye, receives all conquests made by Brandenburg in Pomerania, 1679.	House of Romanoff gives Russia strength and influence. Feodor III., 1676-1682. Little or White Russia reconquered from Poland. Death of Feodor, 1682. Ivan and Peter, czars, 1682-1696. Sophia, elder sister, guardian. War with China, 1684-1689. First Russo-Turkish War, 1687. Death of Ivan, 1696. Peter sole ruler, 1696-1725.	Aurungzebe (1658-1707), Mughal emperor in India. Hindu kingdom of the Mahratas formed in the Dekkan, 1660 and later. Kang-he (1661-1721), emperor of China, conquers Tibet and Formosa. Bombay ceded to England in the dowry of Catherine of Braganza. John Casimir of Poland abdicates, 1668. John Sobieski, king of Poland, 1674-1696. Tsunayoski, emperor of Japan, 1681-1708.

From the Death of Cromwell to the Death of Louis XIV. of France, 1658-1715 A. D.

A. D.	Discoveries, Arts, Crafts.	England.	America.	France.	Germany.
1658	College of William and Mary chartered, 1692. Bank of England, 1694. University of Halle, 1694. First fire insurance office, 1696	Revolution; landing of William of Orange, and flight of James, 1688. Declaration of Rights, 1689. William III. (1689-1702) and Mary, 1689-1694. War with France, 1689-1697. Bill of Rights, 1689. Battle of the Boyne, 1690. Massacre of Glencoe, 1692. Peace of Ryswick ends war with France, 1697.	Charter of Massachusetts forfeited, 1684. Sir Edmund Andros governor of New England, 1686-1689. King William's War with the French, 1689-1697. Port Royal seized by Sir William Phips, 1690. Salem witchcraft persecutions, 1692. Andros governor of Virginia and Maryland, 1692. Frontenac's expedition against the Iroquois, 1693, 1696, 1697.	France opposed by the League of Augsburg in a war against the Palatinate, 1688-1697. Mastery of the sea passes to England from France by the victory of La Hogue, 1692.	Eugene victorious at Zenta, 1697. Peace of Carlowitz (1699) gives Hungary and Transylvania to Austria and Morea to Venice.
1700	Yale College founded, 1701. Newcomen's steam engine, 1705. Discovery of Herculaneum, 1708.	Act of Settlement, 1701. War of the Spanish succession, 1701-1714. Anne, queen, 1702-1714. Gibraltar taken, 1704. Victory at Blenheim, 1704. England and Scotland united as Great Britain, 1707. Peace of Utrecht, 1713. House of Hanover or Brunswick, 1714. George I. king, 1714-1727.	Peace with the Iroquois, 1701. Queen Anne's war with the French, 1702-1713. Province of Pennsylvania erected, 1703. Port Royal taken by an English fleet, and name changed to Annapolis, 1710. Louisburg founded, 1713, Hudson Bay and Straits, Nova Scotia, Newfoundland, and St. Christopher ceded to England by France, 1713.	French and Bavarians defeated at Blenheim by Eugene and Marlborough, 1704. Villeroi defeated at Ramillies, 1706. French excluded from Italy, 1706. Vendome defeated at Oudenarde, 1708. French humbled at Malplaquet, 1709.	Frederick III. takes the title of Frederick I., king of Prussia, 1701. Joseph I., son of Leopold, emperor, 1705-1711. Charles VI., 1711-1740. War of Turks with Venice, 1714-1718.

From the Death of Louis XIV. to the Coming of George Washington, 1715-1775 A. D.

A. D.	Discoveries. Arts, Crafts.	Great Britain.	America.	France	Germany.
1715	First ships built at Quebec, 1715. First stage between Boston and New York, 1732. College founded at Princeton, New Jersey, 1738. First paper in Canada, 1752. Franklin's electrical experiments, 1752. England adopts the Gregorian calendar, 1752. British Museum founded, 1753.	Jacobite rebellion in Scotland, 1715-1716. Septennial parliaments instead of triennial, 1716. First Septennial parliament, 1717. Triple alliance of England, France, and Holland against the Pretender, 1717. Quadruple alliance of England, France, the emperor, and Holland to enforce the Peace of Utrecht, 1718. War with Spain, 1718. South Sea Bubble bursts, 1720. George II., king, 1727-1760. Porteous riot in Edinburgh, 1736. War with Spain, 1739-1748. Battle of Fontenoy, 1745. Second Jacobite rebellion, 1745. Battles of Prestonpans (1745) and of Culloden (1746). Peace of Aix-la-Chapelle, 1748. Clive in India, 1750. Seven years' war with France, 1755-1763, carried on in America, Europe, India, and at sea. Black Hole at Calcutta, 1756. Battle of Plassey, 1757	New Orleans founded, 1718. Government by proprietors overthrown in Carolina, 1719-1729. William Burnet, governor of New York (1720) obstructs trade of the French. New England wars with Indians, 1724. Abenakis take Berwick; colonists burn Norridgewock, 1724. Treaty of peace between Massachusetts and eastern Indians, 1726. Burnet governor of Massachusetts, 1728. Carolina divided into North and South Carolina, 1729. Georgia settled in 1733, under Oglethorpe. King George's War between England and France, 1744-1748. Louisburg taken by Pepperell, 1745. Cape Breton restored to the French by the treaty of Aix-la-Chapelle, 1748. Ohio Company formed, 1748. Halifax founded, 1749. Peace with the Six Nations concluded by Governor Clinton of New York, 1751. Georgia becomes a royal colony, 1752. Washington treats with French regarding settlements in the west, 1754. Union of the colonies proposed by Franklin at Albany, 1754. Old French and Indian War, 1755-1763. Massachusetts troops take Forts Beausejour and Gaspereaux in Acadia, 1755. Exile of the Acadians ("Evangeline") from Acadia, 1755. Defeat and death of Braddock at Fort du Quesne, 1755. French defeat at Lake George, 1755. Massacre at Ft. William Henry, 1757. Battle of Plains of Abraham (Quebec); Death of Wolfe and Montcalm, 1759.	Louis XV., king (1715-1774), Philip, duke of Orleans, regent (1718-1723). Policy of Louis XIV. abandoned. Joins the triple alliance with England, 1717. Joins the quadruple alliance, 1718. War with Spain, 1718-1720. Financial distress through the South Sea Bubble, 1720. Duke of Bourbon administers affairs, 1723-1726. Cardinal Fleury in control, 1726-1743. Joins Spain and Sardinia in support of Stanislaus, in the war of Polish succession, 1733-1735. Joins Bavaria and Spain in the war of the Austrian succession against Austria (1741-1745). With Bavaria invades Austria and Bohemia and takes Prague, 1741, but was there besieged. Louis XV. invades Holland, 1744. With the Bavarians takes Munich, 1745. Victorious at Fontenoy, 1745.	War of Turks with the emperor, 1716. Eugene conducts the war in Hungary; Belgrade taken, 1717. Peace of Passarowitz, 1718. Emperor joins the quadruple alliance, 1718. Pragmatic sanction planned to secure a succession, 1720. Short-lived alliance with Austria and Spain to support it, 1725. War of the Polish succession, 1733-1735. Peace of Vienna, 1735. Unsuccessful war with the Turks, 1736-1739; Peace of Belgrade, 1739. Death of Frederick William I., of Prussia, 1740. Frederick II., the Great, 1740-1786. Male line of Hapsburgs broken by death of Charles VI., 1740. Maria Theresa, 1740-1780. War of the Austrian succession, 1741-1745. First Silesian war, 1740-1742. Charles VII., 1742-1745. Battle of Dettingen, 1743. Second Silesian war, 1744-1745. Francis I. (Lorraine-Tuscany), 1745-1765. Peace of Dresden, 1745; of Aix-la-Chapelle, 1748.

From the Death of Cromwell to the Death of Louis XIV. of France, 1658-1715 A. D.

A. D.	Spain and Portugal.	Italy.	Scandinavia.	Russia.	Other Countries.
1658	Spain joins the Augsburg League against France, 1689.	Peloponnesus or Morea taken by Venice, 1685-1687.	Charles XII., king of Sweden, 1697-1718.	First Russo-Turkish War, 1687.	Calcutta founded, 1686.
			Frederic IV., king of Denmark, 1699-1730.	Sophia sent to a convent by Peter the Great, 1689.	Augustus II., king of Poland, 1697-1733.
	First Partition Treaty divides the Spanish possessions, 1698.			Peter I., the Great, journeys in Europe, 1697-1698.	Fall of the Ottoman power in Europe began with the treaty of Carlowitz, 1699.
1700	Second Partition Treaty, 1700.	Italy a seat of war in the War of the Spanish Succession.	Northern War (1700-1721) between Sweden and Russia.	St. Petersburg founded, 1703.	Jesuits in China, 1700
	Death of Charles II., 1700.	Eugene invades Italy, 1701.	Secret alliance of Russia, Denmark, and Saxony against Sweden.		
	Philip V., 1701-1746.	Battle of Luzzara, 1702.	Peace of Travendal between Sweden and Denmark, 1700.	Charles XII. of Sweden invades Russia, 1708.	Bahadur Shah, Mogul emperor in India, 1707-1712.
	War of the Spanish succession, 1701-1713.	Eugene victorious at Turin and French driven from Italy, 1706.	Swedes victorious at Narva, 1700.	Russia victorious at Pultowa, 1709.	Jahandar Shah, Mogul emperor in India, 1712-1713.
	Spanish monarchy dismembered, 1713.	War of Turks with Venice, 1714-1718.	Peace of Altranstädt, 1706. Swedes defeated at Pultowa, 1709. Charles in Turkey, 1709 1714. Prussia, Saxony, Denmark, Hanover, and Russia in league against Sweden, 1714.	Peace of the Pruth with Turkey, 1711.	

From the Death of Louis XIV. to the Coming of George Washington, 1715-1775 A. D.

A. D.	Spain and Portugal.	Italy.	Scandinavia.	Russia.	Other Countries.
1715	Philip punished adherents in Spain of Charles, archduke of Austria.	Dukes of Savoy and Piedmont called kings after the peace of Utrecht.	Pomerania taken, 1715; and Wismar, 1716.	Finland conquered, 1715.	Rajputana independent of the Moguls, 1715.
	Old constitutions and old rights withdrawn.	Savoy compelled by the quadruple alliance to exchange Sicily for Sardinia.	Charles XII. assassinated, 1718.	Peter the Great visits Denmark, Holland, and France, 1716.	Muhammad Shah, 1719-1748.
	Sardinia seized (1717) and Sicily (1718) caused the quadruple alliance to be formed against Spain, 1718.				Dekkan independent under the governor, 1720-1748.
	Sicily and Sardinia evacuated, 1720.		Ulrica Eleanora, queen of Sweden, 1719; placed the power in the hands of her husband, Prince Frederic of Hesse-Cassel, 1720-1751.		Yung-ching, emperor of China, 1721-1735.
	Spain supports the Pragmatic sanction of Emperor Charles VI.			Russia restored Finland to Sweden, 1721.	Yoshimune, Japanese shogun, 1717-1744.
	Spain supports Stanislaus in the war of the Polish succession, 1733-1735.	Revolt of Corsica against Genoa, 1730.	Christian VI. of Denmark, 1730-1746.	Peter succeeded by his wife, Catherine I., 1725-1727.	Christians expelled from China, 1723.
	Don Carlos secures Naples and Sicily, 1738.	Baron Neuhof of Westphalia took the title of King Theodore I. of Corsica, 1736.		Menschikoff in control.	Turks unite with Russia in an attack on Persia, 1723.
	Spain joins France and Bavaria against Austria in the war of the Austrian succession, 1740-1748.	Medici family extinct in 1737.		Peter II., 1727-1730.	Oudh enjoys independence, 1732-1743.
	Ferdinand VI., 1746-1759.	Paoli's Corsican revolt, 1755.	Sweden's unsuccessful war with Russia, 1741-1743.	Anna Ivanovna, 1730-1740.	Kien-lung, emperor of China, 1735-1795.
			Peace of Abo, 1743.		Nadir Shah, of Persia, drives out the Turks, 1736; invades India and sacks Delhi, 1739.
	Joseph I., Emmanuel, king of Portugal, 1750-1777.	Naples and Sicily governed by the Spanish Bourbons; Ferdinand receiving them in 1759.		Ivan IV., 1740-1741.	
	Carvalho, marquis of Pombal, minister to Joseph.				Turks defeated at Kars, 1744.
					France and England carry the war to India, 1744-1748.
					French take Madras (1746) and hold it until the peace of Aix-la-Chapelle.
					Mogul emperors mere puppets after 1748.
					Ahmad Shah, emperor in India, 1748-1754.
					Clive defends Arcot against the French, 1751.
					Ahmad Shah Durani, Afghan ruler at Kandahar, makes five invasions of India.
	Lisbon earthquake, 1755.	Genoese call in the French to subjugate Corsica, and cede it to them in 1768.			French and English at war in India, 1756-1763.
	Jesuits banished from Portugal, 1759.		Adolf Frederic, king of Sweden, 1751-1771.		Black Hole of Calcutta, 1756.
					Battle of Plassey, 1757.
					Clive, governor of Bengal, 1758.

From the Death of Louis XIV. to the Coming of George Washington, 1715-1775 A. D.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	America.	France.	Germany.
1715	Potatoes planted in France, 1761. Spinning-jenny invented by Hargreaves, 1767. Arkwright's invention for spinning, 1769. Cut nails introduced, 1774. Mule spinner invented by Crompton, 1779.	George III., king, 1760-1820. Peace of Paris, 1763. Stamp Act passed, 1765. Townshend Acts, 1767. Lord North, minister, 1770-1782. Boston Port Bill passed, 1774.	Montreal and all Canada surrendered to England, 1760. Peace of Paris, 1763. Pontiac's conspiracy, 1763. Twenty-eight delegates meet in New York to resist the Stamp Act, 1765. Stamp Act repealed, 1766. Boston massacre, 1770. Destruction of 342 chests of tea in Boston harbor, 1773. Kentucky settled by Daniel Boone, 1773. Continental Congress at Philadelphia passes a declaration of rights, 1774.	Seven Years' War with England, 1756-1763. France beaten almost everywhere and loses all Canada. Corsica annexed, 1769. Dauphin marries Marie Antoinette, 1770. Louis XVI., king, 1774-1793. Turgot minister of marine and finance, 1774-1776.	England allied with Prussia, 1755. Seven Years' War, 1756-1763. Battle of Minden, 1759. Joseph II., emperor, 1765-1790.

Time of Washington and Development of Canada, 1775-1799.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	Germany.
1775	Gas balloon by Montgolfier, 1783. Fitch's steamboat, 1786. First mechanical patent in the United States, 1790. Whitney's cotton gin, 1792. Rocky Mountains crossed by Mackenzie, 1793. Vaccination, 1796. First French newspaper in Canada, 1798.	War of Independence of the Colonies in North America, 1775-1783. War between Great Britain and France, 1778-1783. Gibraltar defended by Elliott, 1779-1782. War between Great Britain and Spain, 1779-1783. Lord George Gordon riots, 1780. Russia, Denmark, Sweden(1780), Prussia, Austria (1782), Portugal (1783), Spain, and France, form the Armed Neutrality against British Right of Search. War between Great Britain and Holland, 1780-1783. Surrender of Lord Cornwallis at Yorktown, 1781. Peace of Versailles and Paris, 1783. Representative institutions granted to Canada, 1791. United Irishmen, 1792. French republic declares war, 1793. Jay treaty with the United States, 1794. England seizes Dutch possessions in the East, 1795. Spain declares war, 1796. Battle of the Nile (Abukir Bay), 1798. Great Irish Rebellion, 1798.	Battles of Lexington and Concord, 1775. Ticonderoga taken by Ethan Allen, 1775. Mecklenburg Convention, 1775. Washington commander in chief at Boston, 1775. Battle of Bunker (Breed's) Hill, 1775. Siege of Boston, 1775. Evacuation of Boston, 1776. Declaration of Independence adopted July 4; signed August 2 and after, 1776. Battle of Trenton, 1776. Battles of Princeton, Bennington, Saratoga, Brandywine, 1777. Burgoyne surrenders, 1777. Articles of Confederation are adopted, 1777. Alliance with France, 1778. British leave Philadelphia, 1778. Battle of Monmouth, 1778. Paul Jones victorious at sea, 1779. Treachery of Benedict Arnold, and hanging of Major Andre as a spy, 1780. Battle of King's Mountain, 1780. Battle of Cowpens, 1781. Siege of Yorktown and surrender of Lord Cornwallis, 1781. Independence of the United States recognized by Holland (1782); Sweden, Denmark, Spain, and Russia, 1783. Treaty of Versailles, 1783. Washington's farewell to the army, 1783. Shays's Rebellion in Massachusetts, 1787. Constitutional Convention meets at Philadelphia, 1787. Constitution signed (1788) except by North Carolina (1789), and Rhode Island (1790). First Congress meets at New York, 1789. Washington, president; John Adams, vice-president, 1789-1793. Indian war, 1790-1795. Vermont admitted, 1791; Kentucky, 1792. Washington and Adams re-elected, 1792. Washington proclaims neutrality in the war between France and England, 1793. Whisky insurrection in Pennsylvania, 1794. Tennessee admitted, 1796. Washington's farewell address, 1796. John Adams, president; Jefferson, vice-president, 1797. X. Y. Z. affair in France, 1797. Death of Washington, 1799.	Necker, minister of finance, 1776-1781. Benjamin Franklin, United States minister to France, 1778. Rochambeau sent with 6,000 men to aid America, 1780. Calonne, minister of finance, 1783-1787. Great extravagance at court and enormous debt. De Brienne, minister of finance, 1787-1788, when Necker was recalled. Beginning of the French Revolution, 1789. National Assembly formed from States-General, 1789-1791. Tennis-court oath, 1789. Bastille stormed and destroyed, 1789. Lafayette commands the new National Guard, 1789. Tricolor adopted, 1789. Emigration of nobles begins, 1789. Peasant uprisings in the provinces, 1789. Outbreak of Paris mob; royal family, saved by Lafayette, go to Paris, 1789. Constitution accepted by the king, 1790. Flight and capture of the king, 1791. Legislative Assembly, 1791-1792. Tuileries stormed, 1792. War with the First Coalition, 1792-1797. Massacre of royalists, 1792. National Convention, 1792-1795. Monarchy abolished; France a republic, 1792. King executed, 1793. Committee of Public Safety, 1793. Reign of Terror, 1793-1794. Queen executed, 1793. Government of the Directory, 1795-1799. Napoleon commands the army, 1795.	War of the Bavarian Succession, 1778-1779. Peace of Teschen, 1779. Joseph II. reigned alone, without his mother, Maria Theresa, as co-regent, 1780-1790. Joseph's attempted reforms were revolutionary and stirred up much opposition; the League of German Princes, 1785. Frederick William II. of Prussia, 1786. Leopold II., emperor, 1790-1792. Belgians in the Austrian Netherlands revolted at Joseph's reforms, but were put down by Leopold, 1790. Old constitution and privileges restored by Leopold. Prussia concludes a treaty with the Turks to force favorable concessions from Austria and Russia, 1790. Austria and Prussia form an alliance against the French disturbances, 1792. Francis II., 1792-1806. French revolutionists declare war against Austria, 1792. Lafayette, fleeing from Paris, imprisoned by Austrians in Olmütz until 1796. Austrians victorious at Neerwinden, 1793. Austrians defeated by Pichegru, 1793.

From the Death of Louis XIV. to the Coming of George Washington, 1715-1775 A. D.

A. D.	Spain and Portugal.	Italy.	Scandinavia.	Russia.	Other Countries.
1715	Charles III., 1759-1788.	Tuscany controlled by Austria, 1765-1859.		Elizabeth, 1741-1762.	Battle of Plassey, 1757.
	War between Spain and Portugal, 1762-1778.			Peter III., 1762.	
				Catherine II., 1762-1796.	
				Catherine's war against the Turks, 1768-1774.	
	Jesuits expelled by Aranda, 1767.		Gustavus III., king of Sweden, 1771-1792.		
			Crushed power of the nobles, 1772.		
		Jesuits expelled from Rome, 1773.		First division of Poland, 1772, among Russia, Austria, and Prussia.	Warren Hastings governor of Bengal, 1772-1774; governor general of India, 1774-1785.

Time of Washington and Development of Canada, 1775-1799.

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1775	Spain allies with France and declares war on England, 1779.	Tuscany concludes peace with France, 1795.	Invasion by Americans, 1775.	Russia proposes the armed neutrality at sea (1780) for the protection of commerce during the American war.	Lord Pigot governor and commander in chief of Madras, 1775.
					Hastings repels Hyder Ali's invasion of the Carnatic, 1780; defeats the alliance of the Nizam, the Mahratas, and Hyder Ali.
		Savoy and Nice annexed to France, 1796.	Americans driven out of Canada, 1776.	Russia takes Crimea, 1783.	
	Spain retained Minorca and Florida by the Peace of Paris, 1783.		Boundary between Canada and United States first settled, 1783.	Catherine's second war with the Turks, 1787-1792.	
		Napoleon's campaign in Italy, 1796.			
	Charles IV., king, 1788-1808.		Migration of British Loyalists to Canada, 1784.	Sweden's war with Russia, 1788-1790, concluded without gain to Sweden.	Kokaku, mikado of Japan 1780-1816.
		Whole of Lombardy conquered, 1796-1797.			Tippoo Sahib, 1782-1799.
					Hastings recalled, 1785; impeached, 1788; acquitted, 1795.
			St. John, N. B., incorporated as a city, 1785.		Conquest of the Gorkhas and Nepaulese by China, 1792.
				Suwarrow takes Ismail, 1790.	War on Tippoo, sultan of Mysore, by Lord Cornwallis, 1794.
		Peace with the Pope at Tolentino, 1797; Romagna, Bologna, and Ferrara given to France.	New Brunswick made a separate province, 1785.	Peace of Jassy, 1792.	
	Revolutionists in France declare war against Spain, 1793.			Gustavus III. assassinated, 1792.	
			Canada divided into Upper and Lower, 1791.	Second division of Poland, 1793.	
		Mantua surrenders, 1797.			
				Kosciuszko leads a Polish revolt, 1794.	
		Bonaparte crosses the Alps, 1797.	First election in Canada, 1792.		
	Spain loses Santo Domingo to France, 1795.	End of republic of Venice, 1797.		Third and last division of Poland, 1795.	
			Abolition of slavery, 1793.		
		Roman republic, 1798.			
				Kurland added to Russia, 1795.	
			Jay's treaty with United States, 1794.		
					Kiaking, emperor of China 1796-1820.
		Kingdom of Naples becomes the Parthenopæan republic, 1799.		Paul I., czar of Russia, 1796-1801.	Napoleon's war in Egypt, 1798.
					Seringapatam captured and Tippoo slain, 1799.

Beginning of the Nineteenth Century to the Introduction of the Railway, 1799-1830.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	Germany.
1799	Webs of paper, 1798.			War with the Second Coalition, 1799-1802. Government of the Consulate, 1799-1804. Napoleon consul for 10 years.	Austria, in the Second Coalition, opposes Napoleon, 1799-1801. Archduke Charles defeats Jourdan and compels him to lay down his command, 1799.
1800	Volta's electric battery, 1800. Steel pens, 1803. Trevithick's locomotive, 1804. Fulton's *Clermont*, first successful application of steam to navigation, 1807. McGill University founded, 1811. Storage battery, 1812. Stephenson's locomotive, 1814. Davy's safety lamp, 1815. Lachine canal built, 1821-1825. Erie canal finished, 1825. Quincy, Mass., railway finished, 1827. Friction matches, 1827.	Malta taken, 1800. Legislative union of Great Britain and Ireland, forming the United Kingdom, 1801. Battle of Copenhagen, 1801. Peace of Amiens, 1802. War with France renewed, 1803. Emmet's rebellion in Ireland, 1803. England, Russia, Austria, and Sweden, form Third Coalition against France, 1805. Battle of Trafalgar, 1805. Ministry of All the Talents, 1806-1807. Berlin Decree, 1806. Abolition of slave trade, 1807. Orders in council, 1807. Russia declares war, 1807. Convention of Cintra, 1808. Peninsular War, 1808-1814. Prince of Wales regent, 1811. War with the United States, 1812-1814. Treaty of Vienna, 1815. Battle of Waterloo, 1815. George IV. king, 1820-1830. Thistlewood's conspiracy, 1820. English at Navarino, 1827. Ashantee War, 1824. Burmese War, 1824-1826.	Congress met first at Washington, 1800. Thomas Jefferson, president; Aaron Burr, vice-president, 1801. Tripolitan War, 1801-1805. Ohio admitted, 1802. Louisiana purchase ($15,000,000), 1803. Hamilton killed by Burr in a duel, 1804. Thomas Jefferson, president; George Clinton, vice-president, 1805. Jefferson's embargo act, 1807. Burr tried and acquitted of treason, 1807. Embargo repealed except as to England and France, 1809. James Madison, president; Clinton, vice-president, 1809. Louisiana admitted, 1812. War declared against Great Britain, 1812-1814. James Madison, president; Elbridge Gerry, vice-president, 1813. Treaty of Ghent, 1814. Hartford convention in opposition to the war, 1814. War with Algiers, 1815. James Monroe, president; D. D. Tompkins, vice-president, 1817-1825, two terms. Era of good feeling. Mississippi admitted, 1817. Seminole War, 1817. Illinois admitted, 1818. Alabama admitted, 1819; Maine, 1820. Missouri Compromise, 1820. Monroe Doctrine enunciated, 1823. John Quincy Adams, president; John C. Calhoun, vice-president, 1825-1829. "Tariff of abominations," 1828. Andrew Jackson, president; Calhoun, vice-president, 1829-1837.	Campaign in Italy, 1800. Napoleon crosses the Alps, 1800. Battle of Hohenlinden, 1800. Napoleon consul for life, 1802. Napoleon emperor of the French, 1804-1814. Code Napoleon, 1804. Third Coalition makes war on France, 1805. Confederation of the Rhine, 1806. Battle of Jena and Auerstadt, 1806. Battle of Eylau, 1807. Peace of Tilsit, 1807. War between Napoleon and Great Britain in Spain and Portugal, 1808-1814. War with Austria, 1809. Peace of Vienna, 1809. Holland annexed to France, 1810. War with Russia, 1812. Retreat from Moscow, 1812. Napoleon abdicates and retires to Elba, 1814. Congress of Vienna, 1814-1815. Louis XVIII., 1814-1824. Napoleon returns to Paris, 1815. Napoleon sent to St. Helena, 1815. Death of Napoleon, 1821. Charles X., king of France, 1824-1830.	Austrians defeat Scherer, Moreau, and Massena. Austrians defeated at Marengo, 1800. Peace of Lunéville, which marks the abolition of the old Holy Roman Empire, 1801. Austria joins the Third Coalition against Napoleon, 1805. Whole Austrian army, 30,000, surrenders to Napoleon at Ulm, 1805. Murat takes Vienna. Austrians and Russians defeated at Austerlitz, 1805. Peace of Pressburg, 1805. Francis II. abdicates the crown of the Holy Roman Empire, 1806; end of the old German Empire; Francis I., 1804-1835. German Empire dissolved, 1806. Austria appeals to the Germans to oppose Napoleon, 1809. Archduke Charles defeats Napoleon at Aspern and Essling, 1809. Napoleon defeats Charles at Wagram, 1809. Austria declares war on France, 1813. Napoleon defeated at Leipzig, 1813.

From the Time of Stephenson to the Election of Lincoln, 1830-1860.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	Prussia.	Austria.
1830	Manchester and Liverpool railway opened, 1830. First steamship to cross Atlantic, 1830. Chloroform, 1831. McCormick reaper, 1831. First railway in Canada, 1836. Bunker Hill monument dedicated, 1843. Morse's telegraph line between Baltimore and Washington, 1844.	William IV. king, 1830-1837. First Reform Act passed, 1832. Slavery abolished throughout the empire; indemnity of $100,000,000, 1833. Victoria queen, 1837-1901. Rebellion in Canada, 1837; *Caroline* burned. People's Charter drawn up at Birmingham, 1838. Opium war with China, 1839-1842. Queen marries Albert, 1840. Upper and lower Canada (Ontario and Quebec) united, 1840.	Webster's reply to Hayne on states-rights, 1830. Tariff Act, 1832. Nullification Act in South Carolina, 1832. Compromise Tariff Act, 1833. Seminole War, 1835. Arkansas admitted, 1836. Michigan admitted, 1837. Martin Van Buren, president; R. M. Johnson, vice-president, 1837-1841. Commercial panic, 1837. Gag resolutions, 1838-1839. Sub-treasuries established, 1840. W. H. Harrison, president; John Tyler, vice-president, 1841. Death of president and succession of Tyler, 1841. Ashburton treaty settles northeastern boundary dispute, 1842. Dorr rebellion, 1842. Florida admitted, 1845. Texas annexed, 1845. James K. Polk, president; George M. Dallas, vice-president, 1845-1849.	Algiers taken by the French, 1830. July Revolution: the three days of July (27, 28, 29), 1830. Charles X. abdicates, 1830. Louis Philippe, king of the French, 1830-1848. Louis Napoleon attempts to gain throne; sent to America, 1836. Second attempt of Louis Napoleon, 1840. Napoleon's remains reinterred in Paris, 1840. Ministry of Soult and Guizot follows that of Thiers, 1840-1848.	Foundation of the German customs union — Zollverein, advocated by Prussia in 1818, 1833. Frederick William IV., 1840-1861. Alliance against the demands of the Turks, 1840. Revolutionary movements caused by influence of the French revolution, 1848.	Ferdinand I., emperor, 1835-1848. Metternich, chancellor of state. Alliance against Mehemed Ali, 1840. Uprising in Vienna, Metternich driven from the city, 1848; followed by a second and a third uprising. Citizens and students controlled the city.

Beginning of the Nineteenth Century to the Introduction of the Railway, 1799-1830.

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1799		King of Naples returns and abolishes the Cisalpine republic, 1799.		Russia joins the Second Coalition against Napoleon, 1799; withdraws, 1800.	
1800	By the Peace of Lunéville Spain loses Louisiana to France, 1801. Spain allied with France against the Third Coalition, 1805. Spanish and French fleets defeated at Trafalgar, 1805. Portugal refuses to join the Continental system; seized by Junot; royal family fled to Brazil, 1807. Napoleon seizes throne of Spain for his brother Joseph, who becomes king, 1808. Peninsular War, 1808-1814,	Napoleon's second campaign in Italy, 1800. Genoa capitulates, 1800. Cisalpine republic restored, 1800. Napoleon victorious at Marengo, 1800. Tuscany given to Parma and becomes Etruria, 1800. Neapolitan possessions and island of Elba given to France by peace of Florence, 1801. Sardinian fortresses annexed to France, 1802.	Manitoba first settled, 1811. War of 1812-1814. Invasion of Canada by Americans, 1812. Americans repulsed, 1812. Americans secured control of Upper Canada, 1813. Americans gave up attempts to conquer Canada, 1814. Treaty of Ghent, 1814.	England forces Denmark to withdraw from northern convention, 1801. Alexander I., czar of Russia, 1801-1825. Russia joins the Third Coalition, 1805. Defeated at Austerlitz, Russians retreat, 1805. Sweden joins the Third Coalition against Napoleon, 1805. Russia joins Prussia against France, 1806-1807; defeated at Eylau, 1807. Alliance of Denmark with France, after loss of fleet, 1807. Peace of Tilsit, 1807. Sweden surrenders most of Finland and Aland to Russia, 1809. Gustavus IV. of Sweden deposed, 1809; crown given to Charles XIII., 1809-1818. Bernadotte crown prince of Sweden, 1810. Napoleon invades Russia, 1812.	Wellington defeated the Sindhia at Assaye, 1803. Miranda in Venezuela, 1804. Lord Minto, governor general of India, 1807-1813. Mehemet Ali and the Mamelukes, 1811. United Netherlands, 1813. War with the Gurkhas of Nepal, 1814-1815. William I., Netherlands, 1815-1840. Argentine Confederation, 1816. Last Mahrata war, 1817-1818. Chile independent, 1818. Mexico independent, 1821. Greek war of freedom, 1822-1829. Brazil independent, 1823. Lord Amherst, governor general of India, 1823-1828.
	Corunna; death of Moore, 1809. Battle of Salamanca, 1812. Battle of Vittoria, 1813. Ferdinand VII., 1814-1833. Constitution of 1812 restored by uprising of liberals, 1820. Revolutions and civil wars in Spain, 1820-1834.	Napoleon king of Italy, 1805; and Eugène Beauharnais, viceroy of Naples. Piedmont, Parma, and Piacenza given to France, 1805. Bourbons in Naples dethroned, 1805. Tyrol subdued, 1809. Kingdom of Two Sicilies restored, 1814. Austria invades Italy, 1821.	First Indian treaty, 1817. First Canadian bank, 1817. The Family Compact, 1820-1837. Northeast boundary of U. S. settled, 1827.	Burning of Moscow, 1812. Sweden joins Russia and England against France, 1812. Nicholas I., czar of Russia, 1825-1855. Russian fleet at Navarino, 1827. Russo-Turkish War, 1828-1829. Russians take Varna, 1828. Peace of Adrianople, 1829.	First Burmese war; England secures Assam, 1824-1826. Peru independent, 1825. Bolivia under Bolivar, 1825. Missolonghi taken by the Turks, 1826. Sir William Bentinck, governor general of India, 1828-1835. Suppression of the sati or suttee (widow-burning) and of the thagi or thugs (assassins). Dom Pedro, emperor of Brazil, 1831-1889. Leopold, king of the Belgians, 1831-1909.

From the Time of Stephenson to the Election of Lincoln, 1830-1860.

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1830	Dom Pedro of Portugal delegates crown of Brazil to Pedro II., 1831. Civil war in Spain follows the death of Ferdinand VII., 1833-1840. Don Carlos in Spain, 1833-1839. Civil war in Portugal, 1836.	Uprisings in Modena, Parma, and Romagna quelled by Austria, 1831. Death of Pope Gregory XVI., 1846. Pius IX., his successor.	First Railway, 1836. Insurrection in Lower Canada, 1837. Rising in Upper Canada, 1837. Outbreak of rebellion in both provinces, 1837-1838. First daily paper, 1840.	Russia suppresses revolt in Poland, 1830. Warsaw captured, 1832.	India thrown open to European trade and settlement encouraged, 1833. East India Company's exclusive trading privileges in China cease, 1834.
	Espartero supported claims of Isabella II. against Don Carlos, brother of the king. Insurrection in Barcelona, 1843. Espartero overthrown, 1843.	Revolt in Naples secures a liberal constitution, 1848. Sicily in revolt, subdued, 1848.	Reunion of the provinces, 1840. Responsible government, 1841. Union of two provinces as Canada, 1841. Opening of first united Parliament, 1841. Ashburton treaty, 1842. Oregon boundary treaty, 1846.		Emperor of China forbids opium trade; 20,000 chests destroyed, 1836. Refusal to pay indemnity on this brought on the first war with Great Britain (Opium War), 1840-1842. Canton, Amoy, Fuchau, Ningpo, and Shanghai opened to British trade by the treaty of Nanking, 1842. Hongkong ceded to Great Britain, 1842. Cushing treaty between China and the United States, 1844.

From the Time of Stephenson to the Election of Lincoln, 1830-1860.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	Prussia.	Austria.
1830	Gold discovered in California, 1848. Corliss engine 1848. Telegraphic communication between France and England, 1851. Great industrial exposition at Hyde Park, 1851. Magazine rifle, 1854. Safety matches, 1855. Rubber dental plate, 1855. First Atlantic cable laid, 1858.	Total repeal of corn laws, 1846. Famine in Ireland, 1846-1847. Rebellion in Ireland (O'Brien and Mitchell), 1848. Chartist riots, 1848. Navigation laws repealed, 1849. Roman Catholic hierarchy established in England, 1850. Clayton-Bulwer treaty with the United States, 1850. Crimean War, 1853-1856. Treaty of Paris, 1856. War with China, 1856-1860. Indian Mutiny, 1857-1858. India transferred to England, 1858. Property qualifications of members of parliament abolished, 1858. Jews admitted to parliament, 1858. Queen proclaimed sovereign of India, 1858.	Iowa admitted, 1846. Wilmot proviso, 1846. Mexican War, 1846-1848. Oregon boundary settled, 1846. Wisconsin admitted, 1848. Zachary Taylor, president; Millard Fillmore, vice-president, 1849. Fugitive Slave law, 1850. Fillmore, president, on death of Taylor, 1850. Franklin Pierce, president; William Rufus King, vice-president, 1853-1857. Gadsden purchase, 1853. Treaty with Japan, 1854. Fishery rights secured by treaty with Great Britain, 1854. Republican party formed, 1854. Kansas-Nebraska bill, 1854. James Buchanan, president; J. C. Breckinridge, vice-president, 1857-1861. Dred Scott case, 1857. Minnesota admitted, 1858; Oregon, 1859. John Brown's raid at Harper's Ferry, 1859.	Revolution of February, 1848. Louis Philippe abdicates in favor of his grandson, Count of Paris, 1848. France a republic, 1848-1851. The days of June—insurrection in Paris, 1848. Louis Napoleon Bonaparte, president of the republic, 1848, afterwards, by coup d'état, president for 10 years (1851); and then as Napoleon III., emperor, 1852-1870. France shares in the Crimean war against Russia, 1854-1856. War of France and Sardinia against Austria, 1859.	Prussia cooperates with other German states in the German National Assembly to promote union, 1848-1849. Constitution for German Empire completed, 1849; but rejected. Alliance of the three kings (Prussia, Hanover and Saxony), 1849. Prussia swears allegiance to the new constitution, 1850. Prince of Prussia becomes regent, 1857 and 1858.	Archduke John of Austria chosen president of the German National Assembly, 1848. Slavonic Congress at Prague, 1848. Abdication of Ferdinand I., 1848. Francis Joseph I. emperor of Austria, 1848. War with Sardinia, 1848-1849. Hungarian revolt under Kossuth, 1848-1849. New constitution adopted, 1849. Kossuth governor of the Magyars, 1849. Hungarians defeated, and capitulated, 1849. War with France and Sardinia, 1859.

From the Election of Lincoln to the Founding of the German Empire, 1860-1871.

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	Prussia.	Austria.
1860	Antiseptic surgery, 1861. Second industrial exhibition at London, 1862. Telegraphic communication between America and England completed, 1866. Dynamo electric machine, 1866. Dynamite, 1866. Great exhibition in Paris, 1867. Suez canal opened, 1869. Pacific railway, 1869. Westinghouse air brake, 1869. Celluloid, 1869.	Mason and Slidell taken from the British mail steamer, *Trent*, 1861. Death of the prince consort, 1861. Cotton famine, 1862-1863. Maori War in New Zealand, 1863-1869. Ionian Isles ceded to Greece, 1864. Insurrection in Jamaica, 1865. Second Reform bill extends the franchise, 1867. Fenian uprisings in Ireland, Chester, and Clerkenwell, 1867. Dominion of Canada formed by the union of Ontario, Quebec, New Brunswick, and Nova Scotia, 1867. Abyssinian expedition under Lord Napier, 1867. Irish church disestablished and disendowed, 1868. Irish land act passed, 1870. National education established by law, 1870.	Abraham Lincoln, president; Hannibal Hamlin, vice-president, 1860. South Carolina secedes (1860) followed by Mississippi, Florida, Alabama, Georgia, Louisiana, and North Carolina (January, 1861); Texas (February); Virginia (April); Tennessee, and Arkansas (May). Confederate States of America formed at Montgomery, Ala., February 8, with Jefferson Davis, president; Alexander H. Stephens, vice-president. Kansas admitted, 1861. Fort Sumter fired on by the Confederates, April 12, 1861, and surrendered, April 14. McClellan succeeds General Scott as commander-in-chief of the Union forces, 1861. Emancipation Proclamation issued, 1863. Grant commander-in-chief, 1864. Nevada admitted, 1864. Lincoln re-elected president; Andrew Johnson, vice-president, 1864. Lincoln assassinated, 1865. Andrew Johnson, president, 1865. Amnesty declared, 1865. Civil Rights bill passed over the president's veto, 1866. Nebraska admitted, 1867. Reconstruction Act over the president's veto, 1867. Alaska purchase, 1867. President Johnson impeached, but acquitted, 1868. Terms of amnesty widened, 1868. U. S. Grant, president; Schuyler Colfax, vice-president, 1869-1877. Fifteenth amendment ratified, 1870.	Mexican expedition by France, England, and Spain, 1861-1867. England and Spain withdraw, Napoleon III., expecting the United States to be broken up in civil war, planned a monarchy in Mexico. Puebla taken by French, 1863. Crown of Mexico offered to Maximilian, brother of Francis Joseph of Austria. United States orders the French troops to withdraw, 1867. Maximilian carried on the war alone and was captured, tried, and shot, 1867. Franco-German War, 1870-1871. (For details of battles see Important Wars of History.)	William I., king of Prussia, 1861-1888. Constitutional difficulties over reorganization of the army cause resignation of the ministry, 1861. Von Bismarck president of the ministry, 1861. Especial care given to the army. War with Denmark, 1864. Prussians storm Düppel and capture it. Prussians defeat the Danes in the island of Alsen. War with Austria, 1866. Prussians invade Bohemia. Peace of Prague, 1866. North German Confederation formed, 1867. Franco-Prussian War, 1870-1871.	New constitution with separate diets for the united monarchy, 1861. Francis Joseph summons German princes to consider a reorganization of Germany, 1863. War with Denmark, 1864. Peace of Vienna. War with Prussia, 1866. Austrian victory at Trautenau. Austria consents to be left out of the reorganization of Germany. Francis Joseph crowned apostolic king of Hungary, 1867. The Ausgleich of 1867 recognizes Austria and Hungary as separate states under a common head.

From the Time of Stephenson to the Election of Lincoln, 1830-1860.

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1830		Anarchists and republicans rule in Rome; city besieged for two months and captured by the French, 1849.	Victoria, B. C., founded, 1843. Oregon boundary treaty, 1846. Riots in Montreal, 1849.	Wars of Schleswig-Holstein against Denmark, 1848, 1849, and 1850-1851. Treaty of London closes the war, 1852.	Hienfung emperor of China, 1850-1860. Tai-ping rebellion, 1850-1864. Turkish fleet at Sinope, 1853.
	Death of Godoy, 1851.	Mazzini at Rome, 1849.	Postage stamps introduced, 1851. First American Y. M. C. A. at Montreal, 1851.	Russians cross the Pruth, 1853. Crimean War, 1854-1856.	Commodore Perry of the United States navy enters Yedo (1853) and concludes a treaty with Japan, 1854.
		Pope returns to Rome from Gaeta, 1850. Gioberti in Italy, 1852.	Reciprocity treaty with United States, 1854.	Russians repulsed at Silistra, 1854. Siege of Sebastopol, 1854-1855.	Persian war, 1856-1857.
	Death of Don Carlos in exile, 1855.	Sardinian war with Austria, 1848-1849.	Gold found in British Columbia, 1858. Decimal coinage, 1858. Ottawa, capital of Dominion, 1858.	Siege of Kars, 1855. Alexander II. emperor of Russia, 1855-1881.	Chinese war with Great Britain and France (*Arrow* affair), 1856-1860. Surrender of Peking, 1860.
		Sardinia joins France against Austria, 1859. Battle of Magenta, 1859. Battle of Solferino, 1859.	First railway bridge across St. Lawrence, 1859.	Treaty of Paris, 1856.	Yokohama, Hakodate, and Nagasaki opened to trade, 1859.

From the Election of Lincoln to the Founding of the German Empire, 1860-1871.

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1860	Spain supports Napoleon III. in the Mexican expedition, 1861.	Victor Emmanuel receives from Napoleon III. Lombardy and takes Tuscany, Parma, Modena, and papal legations; giving up Savoy and Nice to France, 1860.	Winnipeg founded, 1860. Victoria bridge opened, 1860.	Emancipation of Russian serfs, 1860.	First Japanese embassy sent to the United States, 1860. Tunchi emperor of China, 1860-1875.
				Death of Frederic VII. of Denmark, 1863.	George king of Greece, 1863. French in Mexico, 1864.
	Withdrew with England, 1862.		Nova Scotia and New Brunswick join confederation, 1866.	Christian IX. king of Denmark, 1863-1906.	Rebellion in China suppressed by England; Nanking taken by "Chinese" Gordon, 1864.
		Garibaldi marched on Palermo, 1860. Sicily and Naples united to Sardinia, 1860.	Invasion by Fenians, 1866. First meeting of Parliament at Ottawa, 1866.	Insurrection in Poland, 1863.	Shimonoseki (Japan) bombarded by English, French, Dutch, and American ships to avenge an attack, 1864. Indemnity $3,000,000, of which the United States receives $785,000.
	Spanish revolution at Cadiz, 1868. Serrano insurgent, victorious; Queen Isabella flees to France and is deposed, 1868.	Victor Emmanuel king of Italy, 1861.	Dominion of Canada formed, 1867.	War of Austria and Prussia against Denmark 1864.	Keiki, the last shogun, resigns, 1867. Maximilian shot in Mexico, 1867.
		Death of Cavour, 1861. Florence capital of Italy.	Red River rebellion, 1869-1870.	Russian advance in Asia, 1864-1877.	
	Bourbon house deposed, crown offered to the prince of Hohenzollern, 1870. Duke of Aosta, second son of Victor Emmanuel, elected king under title of Amadeus I., 1870-1873.	Venice united to Italy, 1866. Italy becomes the sixth great power, 1867.	Addition of Northwest Territories and Manitoba, 1870; British Columbia to confederation, 1871. Treaty of Washington, 1871. School act passed, 1871. Departure of last battalion of British troops from Quebec, 1871.		War between Brazil and Paraguay, 1868. Mikado restored; end of dual government, 1868. Abolition of feudalism in Japan, 1871.
		Vatican council, 1870.	Fenian riots suppressed, 1871.		Introduction of western civilization into Japan begins, 1871.

From the Founding of the German Empire to the Present Day, 1871-

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	German Empire.	Austria-Hungary.
1871	Ontario Ladies' college founded, 1874.	Alabama claims settled by the treaty of Geneva, 1872.	Civil Service Commission authorized, 1871.	France a republic (third time), 1870 to the present day.	William I., emperor of Germany, 1871-1888.	Turkey cedes Bosnia and Herzegovina to Austria, 1878.
		Vote by ballot established, 1872.	Treaty of Washington settles Oregon boundary, fishery dispute, and Alabama claims with Great Britain, 1871.	Uprising of the Commune, 1871.	Imperial Parliament adopts constitution, 1871.	Bismarck concludes a defensive alliance at Vienna, 1879.
	Centennial exhibition at Philadelphia, 1876.	Ashantee War, 1873-1874; Kumassi taken by Wolseley, 1874.		Rule of the Socialistic Commune, March 28-May 22, 1871.	German troops leave French territory, 1873.	Disturbances in Bosnia, Herzegovina, and Dalmatia quelled, 1882.
	Telephone, 1876.	Suez canal shares bought from the khedive of Egypt, 1875.	Colorado admitted, 1875.	Second siege of Paris by Marshal MacMahon, 1871.	Congess of Berlin adjusts Anglo-Russian difficulties in the East, 1878.	Lectures in Bohemian established in the university of Prague, 1881.
	Portland cement, 1876.	Queen, empress of India, 1877.	Custer's troops massacred by Indians (Sitting Bull), 1876.	Thiers elected president, 1871.	Defensive alliance with Austria, 1879.	Forms triple alliance with Germany and Italy, 1883.
	Phonograph, 1877	Treaty of Berlin. England takes Cyprus, 1878.	Electoral commission appointed to decide presidential election, 1876.	Death of Napoleon III. in England, 1873.	Conference of Berlin to enforce provisions of the Congress upon the Porte, 1880.	Prevents Bulgaria from invading Servia, 1885.
	Edison introduces electric lighting, 1878.	Zulu War, 1878-1881.	Rutherford B. Hayes, president; W. A. Wheeler, vice-president, 1877-1881.	Thiers forced to resign and MacMahon elected, 1873, and made regent for seven years as "President of the Republic," 1873.	Reichstag rejects Bismarck's proposed tobacco monopoly, 1882.	Franchise extended, 1896.
	International exposition at Paris, 1878.	Afghan War, 1878.	Specie payments resumed, 1879.	Republican constitution passed, 1875.	Alliance with Austria and Italy, 1883.	Jewish faith recognized by Hungarian law, 1896.
		Irish Land League, 1879.	James A. Garfield, president; Chester A. Arthur, vice-president, 1881.	Death of Thiers, 1877.	Frederick III. emperor, 1888.	Czech language made equal to German in Bohemia, 1897.
		Boers revolt, 1880-1881.	President Garfield shot, July 2; died September 19, 1881; succeeded by Arthur.	MacMahon resigns; succeeded by Grévy, 1879-1887.	William II., emperor, 1888.	Ausgleich or compromise renewed, 1899.
		Surrender of Transvaal, 1881.		Jesuits ordered to disband, 1880.	Von Moltke resigns from the command of the army, 1888.	Empress of Austria assassinated by an anarchist, 1898.
	Industrial exhibition at Ottawa, 1879.			Death of Gambetta, 1882.	Bismarck resigns, 1890.	
	Royal Canadian Academy of Arts, 1880.		Chinese laborers forbidden admission for ten years, 1882.	French occupancy of Madagascar opposed by natives, 1883.	Von Caprivi chancellor, 1890.	
			Civil Service bill, 1883.	President Grévy re-elected, 1885.	Von Hohenlohe chancellor, 1894.	
			Grover Cleveland, president; T. A. Hendricks, vice-president, 1885-1889.	Expulsion of the French princes, 1886.	Naval increase in Germany, 1895.	
			Presidential succession law, 1886	President Grévy resigns, 1887.	Lèse-majesté prosecutions, 1895.	
	Brooklyn bridge opened, 1883.	Irish Coercion Act, 1881; Land Act, 1881.	Strikes and riots suppressed by civil and military force, 1886.	Sadi-Carnot, president, 1887.	Social democrats increase in the Reichstag, 1898.	
		Murder of Lord Cavendish, 1882.	Bering Sea complications, 1886.	Boulanger removed from the army for political intrigue; but elected to the Chamber of Deputies, 1888; flees from government investigation, 1889.	Death of Von Bismarck, 1898.	
		Alexandria bombarded, 1882.	Interstate Commerce Act, 1887.		German emperor visits Constantinople and the Holy Land, 1898.	
	White squadron or new steel navy of the United States begun, 1883.	Tel-el-Kebir taken and Arabi's rebels routed, 1882.	Department of labor created, 1888.		Caroline Islands ceded by Spain, 1898.	
		War in the Sudan 1883-1885.	Australian ballot introduced, 1888-1889.		Germany receives two of the Samoan Islands by treaty with United States, 1899.	
	Linotype machine, 1884.	Gordon arrives at Khartum, 1884.	Department of agriculture created, 1889.	Electoral reform, 1889.		
		South African Republic erected, 1884.	Benjamin Harrison, president; Levi P. Morton, vice-president, 1889-1893.	Franco-Russian agreement, 1891.		
		Mahdi captures Khartum and slays Gordon, 1885.	Oklahoma settled, 1889; territory, 1890.	Triple alliance renewed, 1891.		
		Home Rule bill defeated, 1886.	North Dakota, South Dakota, Montana, and Washington admitted, 1889.	French protectorate over Dahomey, 1892.		
	Canadian Pacific Railway opened, 2,905 miles, 1887.	Queen's jubilee, 1887.	Samoan treaty signed, 1889.	Panama scandal in France, 1892-1893.		
		Heligoland given to Germany in exchange for Zanzibar, 1890.	Anti-trust (Sherman) law, 1890.	President Sadi-Carnot assassinated, 1894.		
	Nansen's expedition, 1893-1896.	Free Education bill, 1891.	Idaho and Wyoming admitted, 1890.	Casimir-Perier, president, 1894.		
	Submarines in French navy, 1893.	Home Rule bill again defeated, 1893.	McKinley Tariff Act, 1890.	Dreyfus affair, 1894.		
			Strikes in Idaho, at Homestead Pa., and in Tennessee suppressed by martial law, 1892.			
			People's Party nominates for presidency, 1892.			
			Grover Cleveland, president. Adlai E. Stevenson, vice-president, 1893.			
	Manchester ship canal opened, 1894.	Jameson raid in South Africa, 1895.				
	X-rays, 1895.					
	Wireless telegraphy, 1896.	Irish Land Act, 1896.	Wilson-Gorman Tariff Act, 1894	Casimir-Perier resigns through criticism, 1895.		
		Kitchener in Egypt, 1896.	Rebellion in Cuba, 1895.	Felix Faure, president. 1895.		
			Venezuela-British Guiana dispute settled by commission, 1896	French protectorate over Madagascar assured, 1895; and a colony is formed. 1896.		
	Gold discovered in the Klondike, 1897.	Queen's 60th anniversary, 1897.	Utah admitted, 1896.	Dreyfus affair revived; and pardon extended, 1898-1899.		
	International exposition at Paris; Eiffel tower, 984 feet.	The Mahdi defeated and slain in Egypt, 1899.	William McKinley, president. Garret A. Hobart, vice-president, 1897-1901.	Clash with England over Fashoda, 1898.		
	World's Columbian fair at Chicago, 1893.	Canada extends a tariff preferential to Great Britain of 25 per cent., 1889; increased to 33⅓ per cent. in 1900	Dingley Tariff Act, 1897.	Death of President Faure, 1899.		
	North Sea-Baltic canal opened, 1895.	Old age pensions in New Zealand, 1898.	Spanish War, 1898.	Emile Loubet, president, 1899.		
		Black Week, 1899.	Hawaii annexed, and territorial government provided, 1898.			
			Philippine insurrection, 1899-1902.			
			Aguinaldo captured, 1901.			
			Samoan Islands divided between the United States and Germany, 1899.			

From the Founding of the German Empire to the Present Day, 1871-

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1871	Sagasta, prime minister, 1871. Amadeus resigns the crown, 1873. Spain a republic: anarchy and civil war reign, 1873-1874.	Rome capital of Italy, 1871. Death of Victor Emmanuel, king of Italy, 1878. Humbert I., king of Italy, 1878-1900. Death of Pope Pius IX., 1878. Leo XIII., pope, 1878.	San Juan Island settled by British herders, 1872. Lord Dufferin, governor general, 1872-1878. Prince Edward Island in Confederation, 1873. Parliament prorogued, 1873. New ministry, Oct. 23, 1873. Destructive fire, St. John, N. B., 1876. Supreme Court of Canada, first session, 1876. Bread riots in Montreal, 1876. Trouble with Orangemen, 1877.	Turko-Russian War, 1877-1878. Plevna taken, 1877. Storm of Kars, 1877. Peace of San Stefano, 1878.	Bulgarian insurrection, 1874-1876. Kwangsu emperor of China, 1875-1908. First railroad opened in China, Shanghai to Woosung, eleven miles, 1876. Rebellion in Satsuma, Japan, 1877.
	Restoration of monarchy, Alfonso XII. king, 1875-1885. Don Carlos declared a usurper; flees to England, 1875.	Death of Garibaldi, 1881.	Conservative ministry formed, 1877. Canada and United States fishery commission meet at Halifax, awarding $5,500,000 to Canada, 1877.	Responsible ministry act passed in Norway, 1884.	War between Chile and Peru, 1878-1883.
	Alfonso XII. insulted by mob in Paris, 1883. Hereditary house of peers abolished in Portugal, life and elective peers, 1885. Earthquakes in Spain; great loss of life, 1885. Death of Alfonso XII., queen Maria Christina regent, with Canovas, Campos, and Sagasta, prime ministers in turn, 1885. Alfonso XIII. born, 1886.	Italy joins Triple Alliance with Germany and Austria, 1883. Unfriendly relations with John of Abyssinia, 1885. Italian army increased to 252,000, 1887. Death of Dupretis, 1887. Crispi, Rudini, and Giolitti, successors.	New ministry, 1878. Marquis of Lorne, governor general, 1878-1883. The National Policy, a protective tariff adopted, 1879. Northwest territories divided, 1882. Marquis of Lansdowne, governor general, 1883-1888. Riel's rebellion, 1885. Town of Vancouver totally destroyed by fire, 1886. Unrestricted reciprocity with United States established, 1887.	Activity of nihilists in Russia, 1880. Alexander II. murdered in St. Petersburg, 1881. Alexander III., emperor of Russia, 1881-1894. Alexander consecrated at Moscow, 1883. Merv and Sarakhs annexed, 1884.	Jakub Beg defeated and assassinated, 1877. Thessaly to Greece, 1880. New constitution established in Japan, 1882. Arabi Pasha's rebellion, 1882. Korea opened to trade, 1883. Russians attack Pendjeh, 1884. Revolt in Bulgaria, 1886. Constitution of Japan proclaimed, 1889. Wilhelmina, queen of the Netherlands, 1890.
	Death of Dom Luis of Portugal, 1889. Carlos I., king of Portugal, 1889. Anglo-Portuguese treaty, 1891. Revolt in Cuba, 1895. Spanish-American War, 1898. Treaty of Paris, 1898. Spain cedes Caroline Islands to Germany, 1899.	Papal jubilee, 1888. King Milan abdicates, 1889. Bank scandal, 1893. Defeat at Adowa by Menelek of Abyssinia, 1896. Strikes and riots, 1898.	Baron Stanley, governor general, 1888-1893. Earl of Aberdeen, governor general, 1893-1868. Franco-Canadian treaty, 1894. Opening of Sault Ste. Marie Canal, 1895. Earl Minto, governor general, 1898-1904.	Harsh laws enforced against the Jews in Russia, 1890. Radicals gain control in Norway and advocate universal suffrage, 1891. Nicholas II., emperor of Russia, 1894. Nicholas II. consecrated at Moscow, 1896. Sven Hedin of Sweden journeys in central Asia, 1899-1902.	Matabele War, 1893. Chinese-Japanese War, 1894-1895. Battle of Yalu river, 1894. Nasr-ed-din, shah of Persia, assassinated, 1896. Port Arthur leased by China to Russia for 25 years, 1898. Weihaiwei leased to England, 1898. Khartum occupied, 1898. Open-door policy in China, 1899.

From the Founding of the German Empire to the Present Day, 1871-

A. D.	Discoveries, Arts, Crafts.	Great Britain.	United States.	France.	German Empire.	Austria Hungary.
1900	First train from Cairo to Khartum, 1900. First Zeppelin airship, 1900. Mendel's Laws, 1900. Paris exposition, 1900. Passenger steam turbine ship, 1901. New chemical element discovered by Sir William Crookes — victorium, 1901. Cleopatra's emerald mines successfully explored by English geologists, 1901. Rhodes scholarships founded, 1902. The "Jubilee" diamond found in South Africa; weight in the rough = 971¾ carats. British Pacific cable from Canada to Australia, 1902. Radium discovered by Mme. Curie of Paris, France, 1902. Cape to Cairo railway completed to near the Zambesi, 1903. Sir William Ramsay discovers radiothorium, 1905. Danish expedition to explore E. Greenland under L. Mylius Erichsen of Sweden, 1906. Wireless telegraph between Cape Breton and Ireland, 1907. Dr. Sven Hedin in southern Tibet; discovers many new lakes, rivers, and mountains, 1907. Dr. Kaznakoff and Captain Kosloff visit eastern Tibet and Kam and examine west shore of Oring Nor, 1908. Lieutenant Shackleton reaches 88° 23 S. latitude in 62° E. longitude; 111 statute miles from the South Pole. January 9, 1909. Mme. Curie discovers polonium, 1910.	Imperial penny postage, 1898; Australia in 1902. South African War, 1899-1902. Colenso, 1899. Methuen defeated at Maagersfontein, 1899. Ladysmith relieved, 1900. Cronje defeated at Paardeberg, 1900. Orange Free State and South African Republic annexed, 1900. Commonwealth of Australia instituted, 1900. Death of Queen Victoria, Jan. 22, 1901. Edward VII., king, 1901-1910. Peace concluded, 1902. Education Bill, 1903. Irish Land Bill, 1903. Anglo-Frenchtreaty, 1904. North Sea incident, 1904. Anglo-Tibetan treaty, 1904. Anglo-Japanese alliance renewed, 1905. Anglo-Russian convention, 1907. Old Age Pensions Act, 1908. Two cent postal rate with the United States, 1908. Treaty at Washington provides for settlement of disputes between Canada and the United States, 1909. Radium production from the refuse of a Cornwall mine, 1909. Woman's Suffrage agitation, 1909. Death of King Edward, May 6, 1910. George V., king, 1910. Government of South African Union in operation. Herbert J. Gladstone, Governor general. Louis Botha, premier.	Boxer uprising, 1900. Gold Standard Act passed, 1900. Philippine Commission headed by W. H. Taft, 1900. Civil government in Porto Rico, 1900. Galveston tornado, 1900. McKinley re-elected president; Theodore Roosevelt, vice-president, 1901. Platt amendment on Cuba. 1901. Temporary civil government in Philippines, 1901. President McKinley shot Sept. 6; died Sept. 14, 1901; Theodore Roosevelt, president. American occupation of Cuba ended, 1902. Anthracite coal strike, 1902. Isthmian Canal Act, 1902. Civil government in the Philippines, 1902. Alaskan boundary claims decided, 1903. Cuban Reciprocity treaty, 1903. Department of commerce and labor created, 1903. Canal treaty signed with Panama, 1903. Government under the Sherman Act checks the merger in the Northern Securities case, 1904. United States by her warships enforces claims upon Turkey, 1904. Theodore Roosevelt, president; Charles W. Fairbanks, vice-president, 1905-1909. Panama Canal property bought from France, 1905. Armstrong insurance investigation exposes scandals, 1905. Death of John Hay, secretary of state, 1905. Chinese boycott on American goods, 1905. Russo-Japanese Peace Conference at Portsmouth, N. H., 1905. Hepburn Act regulates railway rates, 1906. Pure Food and Drugs Act, 1906. Brownsville, Texas, riots; negro soldiers discharged, 1906. United States resumes provisional government in Cuba, 1906. First Philippine Assembly, 1907. Land frauds exposed, 1907. Oklahoma admitted, 1907. Cruise of American Pacific fleet, 1907. Boundary between Colorado, New Mexico, and Oklahoma fixed by Congress, December 12, 1908. William H. Taft, president; James S. Sherman, vice-president, March 4, 1909. New tariff made, 1909.	Associations laws, 1901. Agitation for separation of Church and State, 1903. Anglo-French treaty concerning Africa and Newfoundland, 1904. Religious orders forbidden to teach for ten years, 1904. Law for separation of Church and State passed, 1905. Fallières elected president, 1906. Morocco question referred to the powers, 1906. Dreyfus restored to rank and promoted, 1906. Papal encyclical forbids French Catholics to form *Associations Culturelles*, 1906. Aluminium coins issued by France in place of present copper and nickel ones, 5, 10, and 25 centimes, in denomination, January 1, 1910.	Von Bülow chancellor, 1900. Industrial depression, 1901. Tariff bill passed, 1902. Emperor visits the sultan of Morocco, 1905. Social democrats lose 36 seats, 1907. Emperor visits London, 1907.	Austria joins Russia in suppressing Macedonian revolt, 1901. Universal Suffrage Bill in Austria, 1907. Triple Alliance, 1907. New customs and commercial treaty in effect, 1908. Student strike, 1908. Emperor asserts rights of sovereignty and succession over Bosnia and Herzegovina, 1908. Trouble with Servia, 1908, settled by Russia's recognition of the annexation of Bosnia and Herzegovina, 1909.

From the Founding of the German Empire to the Present Day, 1871-

A. D.	Spain and Portugal.	Italy.	Canada.	Russia and Scandinavia.	Other Countries.
1900	Alfonso XIII. assumes government, 1902.	King Humbert I. assassinated by an anarchist, 1900.	Canadian Parliamentary elections carried by Liberals, 1900.	Russian to be the official language of Finland, 1900.	Boxer rising in China, 1900.
			Canadian-Australian cable completed, 1902.		Siege and relief of legations, 1900.
			Conference of Colonial premiers at London, 1902.	First election in Norway under universal suffrage, 1900.	Baron von Kettler, German minister, slain in Peking, 1900.
			Anglo-French treaty, 1904.		
	Death of former queen, Isabella II., 1904.		Sale of Magdalen Islands, 1904.	Compulsory military service exacted in Sweden, 1901.	Abd-er-Rahman, ameer of Afghanistan, died, 1901.
			$10,000,000 fire in Toronto, 1904.		
		Victor Emmanuel III. king of Italy, 1900.	Doukhobors on the march, 1904.	Massacre of Jews at Kishinef, 1903.	Marriage of Wilhelmina, queen of Holland, and Duke Henry Frederick, 1901.
				Famine in Sweden, 1902-1903.	Manchurian convention, 1902.
	Marquis de Segouzac explores a portion of Morocco, and visits the head waters of the Draa in Africa, 1905.			Fruitless expedition of Baron Toll of Russia to the Arctic regions; he goes no farther than the New Siberian Islands, 1903.	Durbar at Delhi, 1903.
					Russo-Japanese War, 1904-1905. (See Important Wars of History.)
		Silver Jubilee of pope Leo XIII., 1903.	Diamonds found in Canada, 1906.	Russo-Japanese War, 1904-1905. (For details see Important Wars of History.)	
					Violent earthquake in northern India; 20,000 killed, 1905.
	Alfonso XIII. marries Princess Victoria of England, 1906.			Russian exploring party reaches Lake Yessie in northern Asia and explores the Kotui and Severnaya rivers, 1905.	Dr. Jaeger and Herr Oehler conduct detailed examination of the region between Kilimanjaro and the Victoria Nyanza in E. Africa, 1907.
				Union between Norway and Sweden dissolved, 1905.	
	Son born to the king and queen of Spain, 1907.	Death of Leo XIII., 1903.	Demonstrations against Japanese in British Columbia, 1907.	Insurrection in Russia, 1905.	Sultan of Turkey restores the constitution of 1876, 1908.
				Czar signs constitution, 1905.	
				Christian IX. of Denmark dies, 1906.	Hsuan-tung, emperor of China, 1908.
				Frederick VIII., king of Denmark, 1906.	
				Haakon VII., king of Norway, crowned, 1906.	Turkish parliament opens, 1908.
	Carlos I. of Portugal and crown prince assassinated, 1908.		Liberals remain in power in elections, 1908.	Captain Roald Amundsen accomplishes the northwest passage from east to west; the second time the voyage has been successfully undertaken, 1906.	Bosnia and Herzegovina to Austria, 1908.
		Pius X., pope, 1903.	Mint opened at Ottawa, 1908.		Sultan of Turkey deposed by the Young Turk party, 1909.
			Loans of $4,000,000 to farmers, owing to failures of crops in Alberta and Saskatchewan, 1908.		An heiress to the throne of the Netherlands, Princess Juliana, born, 1909
			Boundary treaty with the United States, 1909.	First Russian duma, 1906.	Independence of Bulgaria recognized.
	Manuel II., king of Portugal, 1908.		Secretary Root and Ambassador Bryce signed a treaty providing for settlement of points in dispute with the United States, 1909.	Second Russian duma, 1907.	Mahmud V., sultan of Turkey, 1909.
				Third Russian duma elected, 1907.	Leopold of Belgium died, 1909.
					Albert I., king of Belgium, 1909.
					China adopted decimal system of coinage, 1910.
		Destructive earthquake in Sicily and Calabria, 1909.	Georgian Bay Canal, 1909.	Oscar II. of Sweden dies, 1907; succeeded by Gustav V., 1907.	Manchurian treaty between Japan and Russia signed July 4, 1910.

Events in America in the Twentieth Century.

A. D.	Discoveries, Arts, Crafts.	United States.	Canada.	Latin America.
1900	1900. Value of artificial ice made in U. S., $14,000,000. Borchgrevink, British explorer, reaches lat. 78° 50′ south via Victoria Land. Duke of the Abruzzi reaches lat. 86° 33′ north, via Franz Josef Land.	1900. Samoan treaty ratified, January 16. Hay-Pauncefote treaty signed, February 5. Gold Standard Currency bill signed, March 14. General MacArthur succeeds General Otis in the Philippines, April 7. Civil government in Porto Rico, April 12. Charles H. Allen, first civil governor of Porto Rico, April 12. General MacArthur issues a proclamation of amnesty to the Filipino insurgents, June 15. McKinley renominated at Philadelphia, June 21. Fire around the dock of Hoboken causes the loss of many lives and of $10,000,000 of property, June 30. Bryan renominated at Kansas City on free silver and anti-imperialism, July 5. Civil government established in the Philippines by a second commission of five, William H. Taft, president, September 1. Strike in the anthracite coal regions of Pennsylvania, September 13 to October 13. Population of the United States by the 12th census, 76,303,387, without Porto Rico or Philippines. Tornado at Galveston, Tex., caused the loss of 7,000 lives and of $30,000,000 of property, September 8. McKinley elected. 292 to 155, November 6.	1900. Parliamentary elections result in victory for the Liberals. Great fire at Ottawa, April 26. Forest fires in northern Ontario destroy millions of dollars' worth of timber. Fenians attempt to dynamite a lock on the Welland Canal. Many Canadians engage in the South African war. Immigration question debated; prejudice against admission of foreigners. Earl of Minto, governor general, travels in western Canada.	1900. General Diaz re-elected president of Mexico. Serious earthquake at Caracas, Venezuela. The Chilean cabinet resigns. Insurrection in Salvador under Castro, who attempts to seize the presidency; Castro found guilty and shot. Boundary between Costa Rica and Colombia settled by President Loubet of France. Revolution in Entre Rios, Argentina. Revolution in Colombia: severe fighting in and around Panama; order restored after 6 months. Unsuccessful attempt on the life of General Alfaro, president of Ecuador. Disorder in Venezuela; severe engagements near Bolivar City, where rebels are defeated.
1901	1901. Thirty-seven torpedo boats included in the United States navy. M. Santos-Dumont, Brazilian scientist, invents a dirigible balloon.	1901. Army Reorganization Bill signed, February 2. Army canteens closed by the War Department, February 4. First session of the Territorial Legislature of Hawaii begun, February 20. United States Steel Corporation incorporated, February 25. Aguinaldo captured by General Funston, March 23. Pan-American Exposition at Buffalo, May 1 to November 2. Jacksonville, Fla., fire destroys property worth $10,000,000, May 3. Hall of Fame inaugurated at New York, May 30. General Chaffee, military governor of the Philippines, June 22. William H. Hunt, governor of Porto Rico, July 23. Fourteen thousand steel employees strike, August 10. McKinley fatally shot at Buffalo, September 6; died September 14. Roosevelt succeeds as 26th president. Isthmian Canal treaty between the United States and Great Britain signed, November 8.	1901. Serious fire in Montreal, loss $3,000,000. R. L. Borden chosen leader of the Conservative party to succeed Sir Charles Tupper, defeated in elections of 1900. May 24th made a public holiday by Parliament; called "Victoria Day." Population, 5,369,666. Capital first applied to the production of iron on a large scale. Steady growth of the Free Trade sentiment. The Earl of Minto makes an official trip through the Maritime Provinces. Act passed for the establishment of a branch of the Royal mint at Ottawa.	1901. Colombian liberal troops surrender at Colon. New cabinet formed in Chile. Riesco elected president of Chile. Revolution in Venezuela. Diplomatic relations resumed between Venezuela and France. The consul general at Ecuador assassinated at Valparaiso, Chile. Gen. J. Santos Zelaya re-elected president of Nicaragua. 1901-02. War declared between Venezuela and Colombia.
1902	1902. Alternating current locomotive runs 99½ miles per hour. Wireless messages sent across the Atlantic, by Marconi. Value of total gold product of the world, $295,000,000. The laying of the British Trans-Pacific cable completed at the expense of Great Britain, Canada, and Australia; length 7,755 miles. Return of the Baldwin-Ziegler polar expedition after an absence of only one year; reached latitude 80° 25′. Peary reaches 84° 17′ north latitude, in western hemisphere.	1902. Presidential election in Cuba, January 1. Prince Henry of Prussia visits the United States. February 23 to March 11. Imports from Philippines to pay 75% of usual rates, March 8. Act to reclaim arid public lands, June 17. Rochambeau statue dedicated at Washington, May 24. Isthmian Canal act; president authorized to build Panama canal if French rights could be bought for $40,000,000, June 28. Act for civil government in the Philippines; provision for legislature of two houses; one elected house; two resident commissioners in the United States; right to bear arms and to trial by jury withheld, July 1. Anthracite coal workers of Pennsylvania strike, May 12 to October 21. Samoan controversy decided against the United States, by King Oscar of Sweden, October 21. Wu Ting-fang, minister from China, recalled, October 27. Reciprocity treaty with Newfoundland signed, November 8. Reciprocity treaty with Cuba signed, December 11; in force, December 27, 1903.	1902. Alaskan boundary still unsettled. Industries barely escape disaster as the result of the Pennsylvania coal strike. Discussion in the House concerning the buying of controlling interests in Canadian railways by United States capitalists. Formation of companies for the production of electrical power from Niagara Falls. The Canadian Northern Railway obtains permission to construct a trans-continental line. Decline in value of gold production; value, 1901, = $18,000,000; 1902, = $12,000,000. Terrible accident on Grand Trunk Railway at Wanstead; twenty-eight persons killed. Strike of street railway employees in Toronto; militia called to preserve order.	1902. Germany, Great Britain, and Italy attempt to collect claims of Venezuela; Puerto Cabello bombarded. Panama Canal bill, by which the property of the Panama Canal Company was purchased for $40,000,000, signed by President Roosevelt. General Mendoza, Venezuelan revolutionist, defeated; revolution ended. Leaders of the insurgents in Colombia surrender to the government. The volcano Santa Maria, in Guatemala, active. Civil war in Colombia ended; treaty of peace between the insurgents and the government. The Venezuelan fleet seized by British and German fleets. The Venezuelan government appeals through the United States for arbitration of European claims. Cuban republic formally established; Estrada Palma elected president.

Events in America in the Twentieth Century.

A. D.	Discoveries, Arts, Crafts.	United States.	Canada.	Latin America.
1903	1903. William Ziegler of New York sends out, under Anthony Fiala, an Arctic expedition. Valuable and extensive deposit of mica discovered in Colorado.	1903. Panama Canal treaty between the United States and Colombia signed, January 22. Department of Commerce and Labor created, February 14. Reciprocity treaty between Cuba and the United States ratified by Cuba, March 11; and by the United States, with amendments, March 19. Great floods at Topeka, Kan., drown more than 200 persons and destroy much property, May 31. Pacific cable completed, July 4. President Roosevelt sends a message around the world in 12 minutes. Chicago celebrates the hundredth anniversary of settlement, September 26-October 1. Three million dollars damage by floods at Paterson, N. J., October 9-11. Republic of Panama recognized by the United States, November 6. Purchase of friars' lands in the Philippines agreed to, December. Iroquois Theater, Chicago, burned, 600 lives lost, December 30.	1903. Settlement of the Alaskan boundary question by British and American commissioners. Landslide at Frank, Northwest Territories; eighty persons killed, entire village submerged; loss = $1,000,000. Severe fire in Ottawa; 200 houses and much lumber destroyed; loss = $3,000,000. The Chamberlain tariff proposals. Canadian industries not so prosperous as in previous years; exchange reports show notable decrease; large speculative house fails. The rights of Canada to Germany's "most favored nation" tariff clause withdrawn by the latter government.	1903. Trouble between Venezuela and Colombia referred to Hague Court of arbitration for settlement. Senate of Colombia rejects Panama Canal treaty. Panama, formerly a dependency of Colombia, asserts its independence, and is recognized by the United States. Canal treaty with United States ratified by Panama.
1904	1904. A cataract surpassing in size and beauty that of Niagara discovered on the Iguassu river in South America: height, 210 feet; width, 13,123 feet. New satellite of Saturn discovered; named Phoebe. Tin found in the York region of Alaska.	1904. United States Supreme Court decides that Porto Ricans are not aliens, January 4. Commercial treaty between China and the United States ratified, January 13. Fire in Baltimore destroys $70,000,000 of property, 2,500 buildings, and burns over 140 acres, February 7, 8. Fire in Rochester, N. Y., causes losses of $3,200,000, February 26. Wisconsin State Capitol burned at Madison, February 27. Excursion steamer, *General Slocum*, burned in the East River, New York, with loss of more than 1,000 women and children, June 15. United States sends war ships to Turkey; demands as to treatment of American citizens and schools in Turkey complied with. Earl of Dartmouth lays corner stone of Dartmouth Hall at Dartmouth College, October 26. Statue of Frederick the Great, presented by Emperor William II. of Germany, unveiled at the Army War College at Washington, D. C., November 19. Agreement between Secretary Taft and President Amador settles differences between United States and Panama, December 2.	1904. Discussion of plan for transcontinental railway: anticipated date of completion, 1911. Preferential trade scheme with Great Britain grows in favor. Revision of the militia laws: division of the Dominion into military districts, with other changes. Lord Dundonald, general officer commanding the militia, dismissed because of offensive speeches. General elections in Quebec, Prince Edward Island, Nova Scotia; Liberal victories. Lord Grey succeeds Lord Minto as governor general. Industries prosperous after the falling off in 1903; value of gold product = $16,400,000.	1904. Venezuelan diplomatic difficulties with the United States. Treaty with Panama, concerning canal, ratified by United States. Boundaries of United States territory on the Isthmus defined. The Hague Arbitration Court, to which the claims against Venezuela were referred, decides against Venezuela. Manuel Amador inaugurated as president of Panama. Porfirio Diaz re-elected president of Mexico; Ramon Corral, vice-president. Don José Pardo proclaimed president of Peru. The Venezuelan government seizes asphalt properties belonging to the United States. Last American soldiers withdrawn from Cuba.
1905	1905. The second Hudson river tunnel completed; it is 15 ft. in diameter and 5,780 ft. long. The first turbine Atlantic liner, built at Belfast, crosses from Liverpool to Montreal. Luther Burbank succeeds in originating new plant life, roots and flowers.	1905. Santo Domingo agrees to allow the United States to preserve order, to collect its revenues, and finance its affairs, January 21. Beef Trust declared illegal by the United States Supreme Court, January 30. Insurance investigation begun in New York, April 3. Body of John Paul Jones discovered in Paris by Gen. Horace Porter, April 14; and brought to the United States and interred at Annapolis, July 24. Yellow fever at New Orleans, July 20. Theodore Roosevelt, president, 336 electoral votes; Parker, 140. Charles W. Fairbanks, vice-president. Panama canal property bought from the French company, April 27. International Railway Congress at Washington opens, May 3. John Hay, secretary of state, died, July 1; Elihu Root succeeded. Treaty of peace between Russia and Japan signed at Portsmouth, N. H., September 5. Prince Louis of Battenberg arrives at Annapolis, November 1. Work begun on Panama canal. Senate annuls arbitration treaties with foreign powers.	1905. The provinces of Alberta and Saskatchewan created. Bill passed providing annual pension of $3,500 for all cabinet ministers and ex-ministers who had been five years in office. Negotiations completed for the manning of Canadian fortifications with Canadian troops. Rapid economic advance of northern Ontario owing to the development of silver resources. Boundary dispute between Quebec and Newfoundland. Report of explorations in Hudson Bay region; traces of coal found. Misunderstanding between Canada and the United States regarding water boundaries. Presbyterian, Methodist, and Congregational sects are strongly in favor of union.	1905. Venezuela agrees to prefer claims of Germany and Great Britain to the amount of $26,000,000. The Panama railroad purchased by United States. Venezuela and Brazil settle long-standing boundary dispute. Steps taken by Italy to force Venezuela to a settlement of Italian claims. President Morales, of Santo Domingo, leaves the capital. General Castro is re-elected president of Venezuela for term of 6 years.
1906	1906. Robert E. Peary of the United States reaches 87° 6′ n. lat., the record of farthest north.	1906. Longworth-Roosevelt wedding at the White House, February 17. Battle of Jolo, Philippines, March 8; 600 Moros killed. Earthquakes and fire at San Francisco, Cal., destroy property worth $400,000,000, April 18-21.	1906. The Canadian members of the International Waterways Commission report the maintenance of Niagara to be a national matter.	1906. Earthquake at Valparaiso. Hostilities between Salvador and Guatemala.

Events in America in the Twentieth Century.

A. D.	Discoveries, Arts, Crafts.	United States.	Canada.	Latin America.
1906	1906. Atmosphere of the earth calculated by Prof. T. J. J. See to be 131 miles in height.	1906. Standard Oil Company indicted at Chicago for receiving rebates, August 8. United States intervenes to preserve peace in Cuba on invitation of President Palma, September 13. James F. Smith, governor of the Philippine Islands, September 20. Taft, provisional governor of Cuba, September 28. Charles E. Magoon, provisional governor of Cuba, October 12. Second military occupation of Cuba. Brownsville, Tex., riots caused by negro soldiers of the Twenty-fifth United States Infantry, for which the regiment is disbanded "without honor," by order of President Roosevelt, November 21.	1906. Finance minister introduces his budget; surplus $12,898,720. Minister of Finance, W. S. Fielding, re-elected to Parliament from Queens-Shelburne district. Noticeable increase in number of immigrants; 1905, = 146,-266; 1906, = 189,064. Value of gold product = $12,-023,932.	1906. Salvador, Honduras, and Guatemala sign a treaty of peace. Earthquake and fire at Valparaiso, Chile; great loss of life and property. President Morales of Santo Domingo impeached by Congress; Vice-president Caceres in power. Chilean ministry resigns. Pedro Montt chosen president of Chile.
1907	1907. Arctic journey of Captain Mikkelson and Mr. Leffingwell to 71° 17′ n. lat. Steel cars both for passenger and for freight service come into extensive use. Use of the steam engine entirely done away with in U. S. elevated railway service. The *Mauretania* completes her maiden voyage across the Atlantic in 5 days, 5 hours, and 10 minutes.	1907. Pure Food Law in effect, January 1. Reed Smoot sustained as senator by Senate vote of 51 to 37, February 20. Supreme Court decides that Isle of Pines is not in United States territory. Opening of the Jamestown Tercentenary Exposition, April 26. Trial of Haywood on charge of murder of Ex-governor Steunenberg of Idaho, with revelations of methods in Colorado strikes of 1903, 1904, May 9. Standard Oil Company fined $29,240,000 for rebating, August 3: judgment set aside by U. S. Circuit Court of Appeals, July 22, 1908. First Philippine legislative assembly opened, October 16. U. S. fleet started around the world, December 16. Treaty between the United States and Santo Domingo ratified; the United States to collect customs revenue and to pay foreign claims. Conflicts in courts between states and railroad companies over fixed passenger rates of 2 to 2½ cents per mile.	1907. Discussion in Parliament regarding navigation of Hudson Strait. Hon. James Bryce, British ambassador at Washington, visits Canada. Women's Canadian Club at Montreal inaugurated by Earl Grey. University established in the province of Alberta. Increase in subsidies to the Western provinces. Financial stringency during the last three months of the year.	1907. Boundary between Panama and Costa Rica settled by treaty. The Tehuantepec National Railroad opened. Honduran troops attack Nicaraguans on frontier and are defeated. Honduras declares war against Nicaragua. Chilpancingo and Chilapa, Mex., destroyed by earthquake; great loss of life. Treaty of peace between Salvador and Nicaragua. Protocol signed by Central American states for permanent peace. Presidents of Nicaragua, Honduras, and Salvador declare for peace.
1908	1908. The East river tunnel, extending the New York subway from Manhattan to Brooklyn, opens for traffic. Wilbur Wright flies 1 hr. 54 min. in aeroplane. Hudson river tunnel between New York and New Jersey opens. Wireless communication established between San Francisco and Hawaii.	1908. Conference of governors at Washington on conservation of National resources, May 13. United States remitted its claim to $11,000,000 of Boxer uprising indemnity from China, May 25. Republicans nominate William H. Taft for president and J. S. Sherman for vice-president, at Chicago, June 18-19. Death of Ex-president Grover Cleveland, June 24. Democrats nominate W. J. Bryan for president and J. W. Kern for vice-president, at Denver, July 10. Two-cent postal rate between the United States and Great Britain, October 1. W. H. Taft elected president, November 3. American battleships leave Manila, November 30. House adopts resolution fixing boundary of Colorado, New Mexico, and Oklahoma, December 12.	1908. Sovereign Bank of Canada goes into liquidation. Japanese agreement. Government holds a conference at Ottawa to arrange a loan for western farmers. Question relating to immigration of Japanese said to be definitely settled. Province of Alberta purchases for $675,000 the Bell telephone system within her boundaries. Province of Manitoba buys Bell telephone system for $3,300,000. Mint at Ottawa opened.	1908. The Guatemalan Northern Railway formally opened at Guatemala City. President Alcorta of Argentina closes session of Congress at Buenos Aires and orders adoption of a budget. President Castro of Venezuela declines request of the United States to arbitrate American claims. General Simon elected president of Haiti, December 17.
1909	1909. Pacific entrance of Panama canal opens February 2. Dr. F. A. Cook reports discovery of North Pole, April 21, 1908. R. E. Peary reports discovery of North Pole, April 6, 1909. Stovaine and strychnine successfully used as an analgetic in surgery Dr. W. L. Dudley of Vanderbilt University ascribes phenomenon of the aurora borealis to presence of neon under high pressure, acted upon by magnetic currents.	1909. Congress voted $800,000 for the relief of the earthquake sufferers in Italy, January 4. Battleship fleet returns to Hampton Roads, February 22. President William Howard Taft and Vice-president James S. Sherman inaugurated, March 4. United States troops evacuated Cuba, March 31. Reading of Tariff Bill begun in the Senate, April 21. 700,000 acres of government land opened to settlement in Washington, Montana, and Idaho, May 22. Alaska-Yukon Pacific Exposition at Seattle, Washington, formally opened, June 1. Cape Cod (Mass.) Canal begun, June 22. Payne Tariff Law signed August 5. President Taft and President Diaz of Mexico met at El Paso, Texas, October 16. United States took action against Nicaragua, December 1.	1909. A treaty signed at Washington to provide for the settlement of questions in dispute between Canada and the United States, January 11. First Canadian navy; 16 dreadnoughts planned. Canadian loyalty to empire emphasized by formation of King's Colonials Yeomanry, to serve in any part of the world on mobilization, under permission of home government. Other colonies follow suit. Georgian Bay Canal project energetically pushed and workings far advanced.	1909. The Yaqui Indians terminate a thirty-five years' war with Mexico by a peace, January 4. General Gomez proclaimed president-elect of Cuba, January 10. President-elect Taft inspects Panama Canal, January 25. Ex-president Castro of Venezuela expelled from France, April 10. Gonzales Valencia chosen president of Colombia, August 4. Revolution in Nicaragua. President Zelaya resigns December 16. Dr. José Madriz president, Dec. 21.
1910	1910. At Los Angeles, Paulhan, in biplane, reaches a height of 4,165 feet in 7 min. 30 sec., January 12. Halley's comet passed the sun May 18.	1910. First meeting House of Governors. Inauguration Day changed to last Thursday in April. Crusade against high prices for meats. Russia and Japan decline Secretary Knox's Manchurian railway proposition. Tariff Commission appointed. Statehood Bill, Railroad Bill, Postal Savings Bank Bill, Campaign Publicity Bill, passed.	1910. Canadian Pacific Railway wreck; one of the worst in Canadian history; caused by an avalanche at Roger's Pass, May 5.	1910. Hermes de Fonseca elected president of Brazil, March 1.

DICTIONARY OF HISTORY.

Comprising great battles, leaders, and outlines of countries.

For rulers, statesmen, governors, and political events, see Dictionary under Government.

ABBAS-MIRZA (*ab-bas' meer'za*) (1783-1833). Persian prince. Commanded the Persian army in two unsuccessful wars against Russia, by the first of which (1813) Persia lost possessions in the Caucasus, and by the second (1826-1828) most of her Armenian territory.

ABD-EL-KADER (*abd'el-kah'der*) (1807-1883). Emir of Algeria, soldier and patriot. From 1831 until 1847 he fought the French, who had driven the Turks out of Algeria, and won even their admiration. He surrendered and was imprisoned in France until released and pensioned by Napoleon III. in 1852. He died in Damascus.

ABDICATION.

Sulla, Roman dictator, voluntary.....B. C. 79
Emperors Diocletian and Maximian, of Rome, wearied with dominion, of their own accord retired from the throne.....A. D. 305
Stephen II., of Hungary, voluntary, from a bed of sickness; assumed the habit of a monk and died the same year.....1131
Albert the Bear, of Brandenburg, voluntary.....1168
John Balliol, of Scotland, compelled by Edward I. of England 1296
Richard II., of England, forced to abdicate.....1399
Eric VII., of Denmark, and XIII., of Sweden, virtually deposed 1439
Amadeus VIII., of Savoy, abdicated to become a priest 1440
Charles V., as ruler of the Netherlands, in favor of his son, Philip.....Oct. 25, 1555
Charles V., as emperor of Germany, voluntary....1556
Charles V., as king of Spain, in favor of his son, Philip.....Jan. 16, 1556
Charles I., as king of England, forced from the throne by Cromwell.....1649
Christina, of Sweden, desired the freedom of private life, and abdicated though she wished still to exercise her sovereign rights.....June 6, 1654
John Casimir, of Poland, voluntary; retired to a cloister.....1668
King James II., of England, through fear of his subjects, fled from the throne.....Dec. 11, 1688
Frederick Augustus II., of Poland (Augustus the Strong) compelled by Charles XII., of Sweden..1706
Philip V., of Spain, voluntary, in favor of his son; resumed crown in the same year on the death of his son.....1724
Victor Amadeus II., of Sardinia, voluntarily abdicated 1730
Amadeus, abdicated to marry the countess of San Sebastian. Afterwards repented and on attempting to regain power was imprisoned and died.....1732
Stanislaus Leszczynski, under foreign compulsion, abdicated the throne of Poland.....1735
Charles, of the Two Sicilies, voluntary, on accession to the throne of Spain as Charles III.,.....1759
Poniatowski, of Poland, compelled by foreign influence to abdicate.....1795
Charles Emmanuel II., of Sardinia, unable successfully to cope with the French, abdicated.....1802
Francis II., emperor of the Holy Roman Empire, resigned that title.....August 6, 1806
Charles IV., of Spain, forced to abdication in favor of his son.....Mar. 19, 1808
Charles IV., restored by Napoleon, then abdicates in favor of Napoleon.....May 11, 1808
Joseph Bonaparte, of Naples (for Spain), at request of Napoleon.....June 1, 1808
Gustavus IV., of Sweden, compelled....Mar. 29, 1809
Louis Bonaparte, of Holland, refused to treat that country as a province of France and abdicated the throne.....1810
Napoleon I., of France, compelled.....Apr. 5, 1814
Again compelled to abdicate.....June 22, 1815
Victor Emmanuel I., of Sardinia, on account of revolutionary movement.....Mar. 13, 1821
Pedro IV., of Portugal (Pedro I., of Brazil), in favor of his daughter.....May 2, 1826
Charles X., of France, abdicated in the face of a revolution.....Aug. 2, 1830
Pedro I., of Brazil (IV., of Portugal), in favor of his son, Pedro II.....Apr. 7, 1831
William I., of Holland, in favor of his son, William II.....Oct. 8, 1840
Louis Philippe, of France, compelled by the people in favor of his grandson, the count of Paris; not accepted.....Feb. 24, 1848
Ferdinand of Austria, abdicated as a direct result of the Revolution.....Dec. 2, 1848
Ludwig of Bavaria, at the outbreak of the Revolution, in favor of his son, Maximilian II.....1848
Charles Albert of Sardinia, defeated by the Austrians at Novara (March 23, 1849) in his struggle for Italian independence, abdicated.....1849
Isabella II., of Spain, abdicated....September, 1868
Amadeus of Spain, second son of Victor Emmanuel II., of Italy, was elected king in 1870, but felt impelled to abdicate.....Feb. 11, 1873
Prince Alexander, of Bulgaria, after the revolution of Sofia (1886), abduction to Reni on the Danube, and his restoration by a counter revolution, was forced to abdicate.....Sept., 1886
Milan I., of Servia, in consequence of a quarrel with his queen, Natalie, yielded the throne to his son, Alexander.....Mar. 6, 1889
Pedro II., of Brazil, forced by people....Nov. 15, 1889
President Nord Alexis, of Haiti, forced....Dec. 2, 1908
President Castro, of Venezuela, forced by revolutionists to abdicate.....Dec., 1908
Sultan Abdul Hamid II., of Turkey, forced by revolution of "Young Turks".....April, 1909
Mohammed Ali Mirza, shah of Persia...July 16, 1909
President Zelaya of Nicaragua abdicated Dec. 16, 1909

ABERCROMBIE, JAMES (1706-1781). British general and commander in chief of British and colonial forces in America. After a severe repulse at Ticonderoga (1758), he was succeeded by Sir Jeffrey Amherst.

ABERCROMBY, SIR RALPH (1734-1801). Noted British general; rendered distinguished service in Flanders (1795), West Indies (1796), and Holland (1799). Knighted in 1795. Mortally wounded in the successful battle against the French at Alexandria, March, 1801.

ABUKIR. (1) August 1, 1798. The first battle at Abukir is also known as the battle of the Nile (see NILE). (2) July 25, 1799. After the defeat of the French in the battle of the Nile, Napoleon ordered the remaining sailors to form a marine brigade, and thus increased his army. With these troops he met the Turks at Abukir, on the coast of Egypt, and although at first driven back and almost routed, Napoleon rallied his men and completely overpowered the Turks, both sides sustaining fearful loss.

ACADIA. A vague term derived from "Cadie, a place of abundance," in the Indian tongue. Applied in the charter of Henri IV., King of France, to territory extending from Pennsylvania to upper St. Lawrence, granted to Samuel de Champlain (1604). The Acadians were mostly prosperous farmers, as shown by 916 persons owning 1,648 horned cattle, 1,910 sheep, 1,164 swine, and harvesting 12,300 bushels of grain (1693). Almost wholly uneducated, primitive to a degree, yet the testimony of all governors, both French and English, declares them quarrelsome, and constantly at law with each other. When England captured Beausejour (1755) they were given the choice of becoming British subjects unmolested as to their possessions or of migrating. They declined to do either, and were shipped in British transports to English colonies in Pennsylvania, Virginia, Maryland, Massachusetts, North Carolina, and Georgia, and their sorrows and sufferings have been immortalized in Longfellow's "Evangeline." Curious to note, the last Canadian census shows over 100,000 persons of distinct Acadian blood, now contented and loyal British subjects.

ACHAEAN LEAGUE. Twelve cities of Achaia, the northern part of the Peloponnesus bordering on the Corinthian Gulf, formed a league with Helice at the head. When that city was destroyed by an earthquake in 373 B. C., Aegium took its place. Wars following the death of Alexander the Great broke up the league in 290 B. C. In 280 B. C. a new league was formed, which grew to include ten cities. This is the Achaean League proper. When in 242 B. C. the Macedonian garrison was driven from Corinth, the efforts of the league were directed against Macedon. The league was dissolved by defeat by Mummius the Roman in 146 B. C., when Greece lost its independence and became a Roman province.

ACRE (anciently, Ptolemais). Acre, in Syria, has been the scene of several conflicts. (1) In 1187, during the Third Crusade, Acre was taken from the Christians by Saladin. After a siege of nearly two years, Acre was retaken by the Crusaders led by Richard I., July, 1191. (2) In 1291, during the Seventh Crusade, Acre was stormed and taken by the Mamelukes, and 60,000 Christians were slain. (3) 1799. For many weeks Napoleon besieged Acre, making frequent assaults, but as the English who held the town were reinforced by Sir Sidney Smith, the French failed to capture the place and retreated.

ACTIUM. On the west coast of Greece. In the naval battle (September 2, 31 B. C.) Augustus became master of the Roman Empire by the defeat of Mark Antony and Cleopatra—Augustus had 260 galleys or ships against 220 of Mark Antony's and 60 of Cleopatra's. The latter, becoming frightened, fled and Antony followed her.

ADRIANOPLE. (1) 323. The two rulers of the Roman Empire, Constantine and Licinius, having declared war against each other, fought a battle at Adrianople, in Turkey, in which Constantine was victorious. (2) A second battle was fought at Adrianople in 378, when the Goths defeated and slew Valens, emperor of the Roman Empire.

AEGATIAN ISLES. 241 B.C. During the First Punic War, a naval battle was fought near the Aegatian Islands, off the west coast of Sicily. C. Lutatius Catulus, the Roman consul, won a brilliant victory over Hanno, commander of the Carthaginian fleet. As a result of this battle the Carthaginians gave up their claims to Sicily and paid the Romans a large indemnity.

AEGOSPOTAMI. In 405 B.C. the Spartans, led by Lysander, sailed for the Hellespont and began to harass the Athenian ports. The Athenian fleet pursued them and anchored near the Aegospotami, a river flowing into the Hellespont. When least expected, Lysander attacked the Athenians, and totally defeated them, only a few of the ships escaping.

AFRIKANDER BUND (*boond*) or **BOND.** An association of Afrikanders (whites born in South Africa) to promote their interests. Though formed in 1879, it dates under the name from 1880. It supported the policy of Cecil Rhodes until the Jameson raid in 1895. It urged a more liberal policy on Kruger, yet sympathized with the Boers in the war. In December, 1900, at Worcester, Cape Colony, it demanded that the Boer republics be independent and denounced the war.

AGE OF REASON. A period during the French Revolution when Christianity was mocked, reason set up as the only true deity, and the bishops wore liberty caps instead of miters. Hebert was a leader. Formal dedication of the system was held at Notre Dame, November 10, 1793, where a painted woman represented the goddess. The Montagnards were accused of schism and many were executed (1794). At the Feast of the Supreme Being (June 8, 1794), France restored Christianity through Maximilien Robespierre

AGINCOURT. Village in France near which the famous battle of that name was fought between Henry V. of England and the French. Disease and privations had decimated his small army, and returning to England for reinforcements he encountered 50,000 French opposing his 14,000 men. The French insisted on absolute surrender. Henry decided to fight at those odds. The French charged and the rain of long English arrows broke the line while the English infantry with long billhooks and hatchets charged on the encumbered men at arms, slaughtering great numbers. Those who could not run away perished; the French nobility was almost annihilated; the English losing only 1,000 men. Shakespeare has immortalized the battle by Henry V.'s speech in his play of *Henry V.*

AGRAMONTE, IGNACIO (1841-1873). Cuban revolutionist in the war of 1868 against Spain; secretary of the provisional government (1869); commanded the Cuban forces in Camaguey; then became commander in chief. Killed in the battle of Jimaguayu.

AGRIC'OLA, CNAEUS JULIUS (37-92). Roman general and statesman of great ability. Elected consul in 77. Governed Britain 78-85, being the first to completely subdue its people, to establish among them some degree of civilization, and to circumnavigate the island.

AGRIPPINA. One of the most heroic and virtuous of women. Daughter of Agrippa and Julia; wife of Germanicus, whom she accompanied on all of his campaigns. Had nine children, one of whom was the emperor Caligula; and another was Agrippina, who was one of the most detestable women that ever lived. The mother openly accused the emperor Tiberius of having brought about the murder of her husband and she was banished to an island near Naples where she died from voluntary starvation (33).

AGUINALDO (*ah-ge-nahl'do*), **EMILIO** (1870-). Leader of insurrections in the Philippines against Spain and the United States. Educated at a Dominican college in Manila. For prominence in the outbreak of 1896, he went to Hongkong and consented to permanent exile should Spain make a large payment. In 1898 he returned to Manila, presumably to aid the United States in the war against Spain; but after the battle of Manila, organized and led with great ability an extended insurrection. Instituted a provisional government and in July, 1898, appealed to the Powers for a recognition of Filipino independence. Captured, after continued warfare, on March 23, 1901, by Brig. Gen. Fred Funston, and took oath of allegiance to the United States on April 2, 1901.

ALABAMA CLAIMS. Claims made by the United States against Great Britain for damage done to northern commerce during the Civil War by the Alabama and other cruisers built and fitted out in England contrary to the Foreign Enlistment Act of that country. The whole question was referred by the Treaty of Washington to a board of arbitration consisting of Charles Francis Adams (United States), Sir Alexander Cockburn (England), Baron d' Itajuba (Brazil), Jacob Staemphli (Switzerland), and, as chairman, Count Federigo Sclopis (Italy). The award was that a sum of $15,500,000 be paid by England to cover all cases of damage.

ALAMO, FORT, BATTLE OF. Fought between a large force of Mexicans under Santa Anna and a small band of Americans and Texans under Col. W. B. Travis, and including the famous Col. David Crockett and Col. James Bowie, after whom the Bowie knife was named. The siege lasted from February 23 to March 6, 1836, during the war for Texan independence. The fort was finally taken by the Mexicans after a loss of over 500 and the whole American force was slain. "Remember the Alamo" became the war cry of the Texans.

AL'ARIC. Great leader of the Visigoths; appeared first in 394. He led the Gothic forces of Theodosius in his war with Eugenius; invaded Thrace, Macedonia, Thessaly, and Illyricum in 395; was stayed in his course by Stilicho, who defeated him in two battles; and Arcadius afterward attempted to buy his good will by making him governor of Illyricum in 396. In 401 he invaded northern Italy but was stopped by Stilicho, and Alaric was bought off by promises of tribute from Honorius. On the death of Stilicho, Honorius failed to keep his promise and Alaric took Rome, and left only on payment of 5,000 pounds of gold and 30,000 of silver. He again besieged Rome in 409. The Romans were starved into submission, but Alaric was so enraged by a perifidious attempt to fall upon him at Ravenna that he advanced a third time on Rome in 410 and gave it over to a three days' sack by his people. He then tried to pass to a conquest of Sicily and Africa, but his ships were useless and he returned. He died at Cosentia in Bruttium in 410.

ALBANY. Capital of New York State, on west bank of Hudson river. Claims to be second permanent settlement within the 13 colonies. The Italian navigator, Verrazano, sailed up the Hudson (1524); trading post established near Albany (1540); really continuous occupation from discovery by Henry Hudson (1609), which was followed by Dutch traders establishing a station on Castle Island under name of Fort Nassau (1614); trading station removed to mainland under name of Beverwyck (1617); called Albany on transfer of New Netherlands to England (1664), in honor of the duke of York and Albany, afterwards James II.; chartered as city (1686); first general Congress of all the colonies to discuss plan of union (1754); Burgoyne's campaign directed against the city (1777) as key to northern situation; 20 years headquarters of state government; permanent state capital (1797).

ALDEN, JOHN (1599-1687). One of the Pilgrim Fathers; born in England, married Priscilla Mullens. A magistrate for over fifty years, and outlived, at Duxbury, Mass., all the other signers of the Mayflower compact; the subject of Longfellow's poem.

ALEMANNI (or **ALAMANNI**). Military confederacy of German tribes found about the beginning of the third century on the lower and middle Main. They were driven beyond the Rhine by Maximinus, but after his death again invaded Gaul, and, although defeated

by Postumus, continued their inroads, being driven back repeatedly. They were finally defeated by Julian (357). In the fourth century they crossed the Rhine, extending as far west as the Vosges and south to the Helvetian Alps. The confederated nation is spoken of as Alemanni and Suavi or Suevi, in the fifth century. In 496 their power was broken by Clovis, who made them subject to the Franks, the southern part of their territory being formed into the duchy of Alemannia. That part of the duchy lying east of the Rhine was later called Swabia. While from the Alemanni the French have given the name of Allemands and Allemagne to Germans and Germany in general, their real descendants are the inhabitants of northern Switzerland, Alsace, and part of Swabia.

ALESIA. 52 B.C. The siege of Alesia, in central France, by Caesar, was the greatest achievement of his invasion; 80,000 Gauls were forced to surrender and their leader taken to Rome as a prisoner, where he was put to death.

ALEXANDER NEWSKI or **NEVSKI** (1220-1263). Russian hero and saint, son of Prince Yaroslav of Novgorod. Struggled valiantly against the Mongols until that people conquered the Russians in 1240. Then fought against Danes, Swedes, and Teutonic knights, receiving his surname from a brilliant victory over the Swedes on the Neva (1240) near the present St. Petersburg. In 1246, upon the death of his father, he became Prince of Vladimir. Throughout his whole life he remained a vassal of the Tatars or Mongols. His memory was honored by Peter the Great, who in 1723 established a magnificent monastery on the site of his great battle, and in 1725 founded the knightly order of St. Alexander Nevski.

ALEXANDER, WILLIAM (1726-1783). An American major general, known as "Lord Stirling," because he claimed to be the rightful heir to the title. He was a stanch patriot during the War of Independence and fought in many battles.

ALEXANDRIA. (1) In 48 B.C., Caesar came to Alexandria, in Egypt, and attempted to settle the dispute over the throne. His presence troubled the citizens and caused a great uprising, in which a part of the city was destroyed, including the famous library. (2) 215. At a most unexpected time, Caracalla ordered a general massacre of the people at Alexandria, and thousands were consequently slaughtered. (3) When, in 296, the Roman provinces in Africa revolted, Diocletian entered Egypt and laid siege to Alexandria. The city defended itself for eight months, and when it surrendered thousands of the people were slaughtered or exiled. (4) During the Napoleonic Wars, Alexandria was occupied by the French (1798), and many of the inhabitants massacred. (5) On March 21, 1801, the English encountered the French at Alexandria, and after a six hours' fight defeated them and captured the city. (6) About 1882 the hostility against foreigners in Alexandria had reached a point where the European powers felt they must interfere and, on July 11th, the bombardment began. The forts around the harbor were destroyed by the English fleet, and finally the Egyptians surrendered. But before the English could take possession, thousands of the foreign residents had been massacred by the merciless Orientals, and it was some time before the rebellion could be suppressed.

ALGERIAN WAR. Between Algiers and the United States (1815). The dey of Algiers had captured an American vessel, reducing her crew to slavery. Not long after, the American fleet, under Decatur, captured the largest ship in the Algerine navy, after a battle of 25 minutes. An Algerine brig was captured, and the frightened dey, on Decatur's quarter deck, signed a treaty "surrendering all prisoners on hand, making certain pecuniary indemnities, renouncing all future claim to any American tribute or presents, and the practice, also, of reducing prisoners of war to slavery."

ALHAMA. February 28, 1482. The Christians, led by Ponce de Leon, surprised the Moors at Alhama, near Granada, in Spain, and captured it. Its loss occasioned much mourning on the part of the Moors, which was expressed in a famous ballad.

ALHAMBRA. Fortified palace of the Moorish kings of Granada. In the ninth century a citadel called al-Hamra was here located. When Granada became the capital of what remained of the Moorish dominions in Spain, this citadel was rebuilt by King Mohammed Ibn-el-Ahmar and his successors (1248, 1279, 1306, 1354). A large part of the Alhambra was destroyed by Charles V., to make room for an unsightly Renaissance building, and it was still further mutilated by Philip V. Queen Isabella II. partly restored it, but fire caused damage in 1890.

ALKMAAR (October, 1799). During the first French Revolution, the English-Russian army, under the duke of York, was defeated by the French at Alkmaar, a town of Netherlands, and compelled to surrender.

ALLEN, ETHAN (1737-1789). American soldier, leader of the "Green Mountain Boys"; famous for his capture of Fort Ticonderoga (1775), where he forced the commander to surrender "in the name of the Great Jehovah and Continental Congress." He was taken prisoner near Montreal (1775) and sent to England; sent back as a prisoner to Halifax, then to New York, where he was released (1778); became a lieutenant colonel of the Continental army in Vermont.

ALMA. September 20, 1854. A brilliant victory was won on the banks of the Alma, in the Crimea, by allied British and French forces, led by Raglan and St. Arnaud, over the Russians, led by Menschikoff.

ALMAGRO, DIEGO DE (about 1475-1538). One of the Spanish conquerors of Peru; said to have been found an infant in the streets of Almagro. He helped Pizarro in the conquest of Peru (1533); quarreled with Pizarro over a division of powers and was defeated in a furious battle (1538) and put to death. When Pizarro was murdered (1541), Almagro's son, Diego, was proclaimed governor of Peru, but was defeated by the royal forces (1542) and put to death.

ALMANSA. April 25, 1707. During the War of the Spanish Succession, a battle was fought near Almansa, in Spain, between the allied forces, led by Galway, and the French, commanded by Berwick. The allies were completely overpowered and many taken prisoners; while they were obliged to deliver to France the prisoners taken at Hochstadt.

ALVA, FERNANDO ALVAREZ, DUKE OF (1508-1583). Spanish general and statesman. Became Prime Minister. Notorious for his bloodthirsty tyranny in the Netherlands, where he boasted of having caused the execution of 18,000 men. Termed "the hangman of the Netherlands" by Häusser, the German historian.

AMBERG. August 24, 1796. The French, led by Jourdan, were defeated near Amberg, in Bavaria, by Archduke Charles.

AMHERST, JEFFREY, BARON (1717-1797). British general who succeeded Abercrombie as commander-in-chief of the English forces in America. Successfully led an expedition against Ticonderoga and Crown Point (1759). Personally commanded at Montreal, forcing the French to surrender to England Canada and all its dependencies (1760), for which services he was made a Knight of the Bath and appointed governor general of British North America. Unable to suppress Pontiac's conspiracy, he returned to England (1763). Absentee governor of Virginia (1763-1768); appointed governor of Guernsey in 1770; privy councillor (1772); acting commander-in-chief of British army (1772-1782, 1783-1793); commander-in-chief (1793-1795); field marshal (1796).

ANDERSONVILLE PRISON. At a village in Sumter Co., Ga., 62 miles south of Macon, where from February 15, 1864, until April, 1865, 49,485 Federal prisoners were confined by the Confederates. The men were confined within a tract of 22 acres, subsequently enlarged to 27 acres, without shelter from sun and frost and in the most filthy, unsanitary conditions. Sometimes 33,000 Federal soldiers were crowded into this space. Over 12,800 or 26 per cent. of the total number confined died. The prison superintendent Wirz was, after court-martial, hanged for causing the death of the prisoners by his neglect.

ANDRE, JOHN (1751-1780). English spy, hanged for connection with the Arnold treason. Captured by Montgomery at St. John's (1775); exchanged (1776); captain (1777); major (1778); captured near Tarrytown, September 23, 1780, with incriminating writings of Arnold concealed in his boots. Tried by court-martial and hanged at Tappan, New York (1780).

ANGLO-SAXONS. The name given to the combined low German tribes, the Angles, Saxons, and Jutes, who, according to tradition, under their leaders, Hengist and Horsa, landed in England or Britain in 449. They came at the invitation of the inhabitants, who could not defend themselves against the attacks of the Picts and Scots of the north who came down upon them in hordes on the withdrawal of the Roman legions from Britain for home defense in 410 by the emperor, Honorius. They drove out the invaders and took the country for themselves. They established the kingdoms of Sussex (South Saxons), Wessex (West Saxons), Essex (East Saxons), Middlesex (Middle Saxons), Northumbria, Kent, and Mercia, the seven divisions sometimes known as the Saxon Heptarchy. They were combined under King Egbert, the first king of all England (827).

ANNAPOLIS. Port of entry in Maryland, 37 miles from Washington; county seat Anne Arundel County. Capt. John Smith visited site (1608); settlement by Puritans (1649); called "Providence," then "Proctor's," "The Town," "Anne Arundel Town," and finally, in honor of Queen Anne, "The Town of Annapolis." Capital moved from St. Mary's (1694); a city (1708). One of first free schools organized (1710), which developed into St. John's College (founded 1789); resolutions of sympathy with Boston passed (1774), and the brig Peggy, laden with tea, publicly burned. Washington surrendered his commission as commander in chief to Congress sitting temporarily at Annapolis (1783); United States Naval Academy founded (1845); seat of extensive oyster canning establishments, this being its chief industry.

ANTIETAM (September 16, 17, 1862). Lee and the Confederate survivors of the battle of South Mountain moved south and took a position near Sharpsburg, between the Antietam and Potomac, where they were joined by Jackson and his men, who had taken Harper's Ferry. Other reinforcements increased Lee's command to 40,000. On September 16 a force of about 70,000 Federals led by McClellan encamped on the opposite bank of the Antietam, and in the evening attacked the Confederates and fought until dark. The battle raged all day on the 17th, both sides losing heavily. During the night of the 18th the Confederates withdrew and moved toward Martinsburg, Va. McClellan's loss in the battle was 12,469. Lee's total loss was 13,533.

ANTIGONUS (about 380-300 B. C.). A most famous general under Alexander the Great. On the latter's death Antigonus received as his share Phrygia, Lycia, and Pamphylia. He plotted for control of all of Asia and greatly extended his empire, but fell at Ipsus before the armies of Lysimachus and Seleucus.

ANTIOCH. Ancient capital of the Hellenistic kings of Syria, on the Orontes, founded about 300 B.C. by Seleucus Nicator. The most magnificent of the 16 cities of that name built by him and named for his father, Antiochus. Communication with all the maritime cities of the West was afforded by its harbor, Seleucia, while for the merchandise of the East it became a very great market. Noted also for its grand public buildings and for its luxury. Antioch became the center of Gentile Christianity, the place of Paul's first ministry, from which he set out on missionary journeys through Asia Minor and Greece. Here occurred the first conflict between Jewish and Gentile Christians, which resulted in the Apostolic council at Jerusalem about 51 A. D. In 538 A. D. the Persians destroyed the city, which was rebuilt by Justinian. In the seventh century Antioch was conquered by the Saracens; recovered in the ninth century by the Greeks, under Nicephorus Phocas; but again fell into the hands of the Mohammedans (1084). In 1098 it was besieged and taken by the Crusaders, and until 1268 was held by the Christians. Antioch has suffered terribly from earthquakes, one destroying it in 256 B. C., and another in 1872, causing great havoc. The modern town called Antakiyeh is much smaller than the ancient city.

ANTIPATER (400-319 B. C.) Distinguished Grecian general under Philip of Macedon and Alexander the Great. On the death of Alexander he received Macedonia as his share; was obliged to defend it against Greece in the Lamian War (323 B. C.). He defeated the Athenians and others at Crannon (322 B. C.), and demanded that Demosthenes, the great orator, be given to him, but Demosthenes escaped this fate by poisoning himself.

ANTONIO, BATTLE OF (August 18, 1813). Between the Royalists and Independents, in Mexico; the Independents being defeated.

ANTWERP. (1) 1576. Antwerp was entered by the Spaniards, during the Spanish Fury, and sacked for three days. Thousands of the citizens were slain, houses were destroyed, and large sums of money carried away. (2) In 1584 Antwerp was besieged by the duke of Parma, and in August, 1585, was obliged to capitulate. The decline of Antwerp dates from this event, as many of the merchants and industrious citizens immediately moved to other cities. (3) When the king of Holland rejected the decision of the Conference, in 1832, the French and English laid siege to Antwerp, and on December 24th the citadel surrendered, and the following year the treaty of peace between Belgium and Holland was signed.

APACHE WAR (1885). Raids in the southwestern portion of New Mexico, made by Apache Indians from Arizona.

APPOMATTOX. Town in Virginia where General Lee surrendered the Confederate army to General Grant, ending the long Civil War (April 9, 1865).

AQUITANIA. Territory between Pyrenees and the Garonne; home of Iberian tribes. Conquered by Clovis, king of the Franks (507); later an independent duchy; conquered by Charlemagne; again obtained independence; united to France by marriage of Louis VII. and Eleanor of Aquitania (or Guienne). She divorced Louis and married Henry II., bringing Aquitania under English rule; again united to France (1451).

ARABIA. First settlement unknown; earliest records show Semitic tribes in residence. Inhabited by Himyarites (1500 B. C.) in the south; earlier Arab traces in southwest. Next came the Sabaean kingdom lasting to about 500 A. D., when independence was obtained. High rate of civilization evident. For 200 years without settled government; only Abyssinia obtaining foothold (529-605). Western tribe of Koreish, of noble descent and great wealth, became perpetual guardians of the sacred Kaaba at Mecca; were won to Mohammedanism; became exceedingly prosperous (632-656). With the spread of Mohammedanism Arabia declined; when the seat of Mohammedan power moved from Damascus to Bagdad a great realm rose in the west and the magnificent rôle of Arabia ended. Overrun by Egypt, Turkey, Portugal; last native ruler in Yemen (1871); the Wahabi rulers grew in importance from the seventeenth century; obtained possession of Mecca (about 1800); power broken (1811-1818); effective assertion of Ottoman supremacy prevented by the struggle between the Sultan of Turkey and the Viceroy of Egypt (1840), giving Wahabi monarchy new lease of life.

ARBELA. One of the decisive battles of the world (331 B. C.), between Alexander the Great of Macedonia and Darius of the Persians. It was Oriental supremacy against Greek culture and civilization. Tradition gives Alexander 40,000 foot and 1,000 horse, Darius 1,000,000 foot and 40,000 horse. Darius made every preparation in his own favor. Alexander depended on discipline and the wonderful Macedonian phalanx, which gave the impregnable "bayonet square" to England. The Greeks cut the traces of the chariot horses; penetrated the Persian lines and at the decisive moment charged the Persian center. The demoralized Asiatics gave way; Darius' nerve failed and he led the disastrous retreat. Thus was saved the dominance and language of the Greeks for 1,000 years; the effect to endure forever.

ARGYLL, ARCHIBALD CAMPBELL, EIGHTH EARL OF (1598-1661). Scottish Covenanter; defeated by Montrose; executed for treason.

ARISTA, MARIANO (1802-1855). A Mexican general in command of the Mexican Army of the North (1846). Badly defeated by General Taylor at Palo Alto (May 8th) and Resaca de la Palma (May 9th); minister of war (1848); elected president of Mexico (1851); resigned to prevent a revolution (1853) and was banished. Died in Europe.

ARMADA (1588). A huge Spanish fleet called "The Invincible Armada," sent by Philip II. of Spain to conquer England, was met and defeated by a smaller English fleet and further destroyed by a terrific storm which drove the ships northward to disaster and wreck.

ARMED NEUTRALITY. An agreement of European powers headed by Russia, that "free ships make free goods," first proclaimed by Prussia (1752), then by France (1778). The adoption of these in 1780 placed England in diplomatic hostility to the powers of Europe, for she insisted upon her right of search.

ARMINIUS. Decisive battle of the world (9 A. D.), named after the great German who precipitated the struggle against the Romans, then "masters of the world." With magnificent discipline in the army, but rotten socially, autocratic Rome ruled the moral, clean-lived Germans. Arminius brought the warring divisions under one head; defeated the Romans by guerrilla tactics ending in an unexpected attack; broke the Roman power, securing forever the independence of the Teutonic race and its mighty descendants.

ARMOR. Shields were the primeval armor; developed by use of leather, skins, and metals in varied forms. Helmets, cuirasses, greaves, and bronze shields were worn by the Greeks (about 927 B. C.). The Orientals used quilted linen corselets. The Romans wore modified Greek armor, which they lightened by using bronze instead of iron in the body armor, and by sewing iron rings on leather for a cuirass. The

shield was of wood, covered with leather, and the rim was metal. The shield was the only armor of the early Germans, but learning the necessity for more by coming in contact with Roman weapons, they adopted some of the Roman armor. The sale of byrnies (shirts of mail) outside his realm was repeatedly forbidden by Charles the Great, any merchant disobeying to forfeit all his property. A byrnie must be owned by every large landowner, who forfeited his benefice if appearing without it. Knights endeavored to cover every portion of their body with metal armor, but foot soldiers and attendants were protected chiefly by gambesons. Armor developed most rapidly and became most perfect in the period beginning with the twelfth century, when the use of the crossbow became common, and the Crusaders encountered the armies of the East. The grand hauberk was first substituted for the byrnie, and in the fourteenth century, plate armor. For the eleventh century's small, conical-shaped helmet a much larger cylindrical one was used, covering both head and face, only a few openings for sight and air being left when the visor was down. Plate armor entirely covered the body. Thus armorial bearings were necessitated for identification, since the knight became unrecognizable by his complete covering of armor. Wood was still used for shields, elm apparently preferred. Horses were sometimes partially protected by plates of armor. Armor developed with the improved forms of the crossbow and the longbow, but proved of little value when gunpowder came into use, and was generally discarded except by the very wealthy who as late as the end of the seventeenth century wore coats of mail, and by certain troops of cuirassiers, traces of armor being still retained by some of them.

ARMS (Egyptian). In the earliest period arrows made of a reed tipped with bronze were used. Straight, double-edged weapons of bronze, tapering from hilt to point, were carried by the swordsmen; and at this time the spears used were fitted with bronze-shaped heads.

ARMS (Primitive). The first weapons used were probably clubs, stones, axes, and flint arrowheads. Characteristic implements of the earliest period are axheads of many different kinds of stone, varying greatly in size and shape. Flint spearheads, arrowheads, and especially knife-daggers, show exquisite workmanship. The last, particularly those of Scandinavian origin, display what is technically known as "ripplefla'king" on their edges. When bronze came into use, shields, spearheads, axes, daggers, and swords were made of that metal. During the Early Iron Age in central Europe, iron swords were made in exact imitation of the leaf-shaped sword of the Bronze Age. A bronze sword, double-edged, long and sharp, the hilt and scabbard set with gold or silver studs, was used in Greece during the Heroic Age. Two kinds of sword were used by the Romans about the first century B. C.—the gladius, short and double-edged, and the spatha, long and single-edged. But their principal weapon was the pilum, a wooden shaft with a strong iron head, similar to a modern pike. This could be hurled like a javelin, and used as a bayonet or to ward off blows of the sword. Not long before the Norman conquest iron was used for most weapons,—broadswords with or without guards, and the curved blade called seax, with sheaths of leather or wood. Of great importance were the mace-heads of iron and bronze. Two swords, dagger, and spear were borne by the Norman knight. In England, archery was encouraged by statute. Toward the close of the twelfth century the crossbow, at first prohibited by papal decree, came into use and in the thirteenth century archers and crossbowmen increased, while the longbow appeared in the fourteenth century, with which the English excelled. The invention of gunpowder in the fourteenth century naturally decreased the use of the earlier weapons.

ARNOLD, BENEDICT (1741-1801). An American general, whose services for his country were marred by treason. Securing from Washington command of the important fortification of West Point, he entered into treasonable negotiations with the British, attempting to betray it into their hands. Through the capture of Andre this plot was disclosed. He later became a British colonel.

ARNOLD, CONWAY HILLYER (1848-). Rear admiral United States navy; born in New York; graduated United States Naval Academy (1867); commanding 3d squadron Atlantic Fleet (1908).

ARNOLD VON WINKELRIED (*ar'nold-fun-vin'kle-reet*) (-1380). A Swiss peasant. Tradition says that the breaking of the phalanx of the Austrians was accomplished at the battle of Sempach by his collecting several spears of the enemy and pressing them into his breast. A monument was erected in his honor on the battlefield in 1886. There is a question as to his reality.

ARTEMISIUM. 480 B.C. For three days the Greek and Persian fleets engaged in a conflict near Artemisium, in Euboea. The Greeks showed superior genius but were unable to sustain such heavy losses, and when news of the Persian victory at Thermopylae reached them they retreated.

ARTEVELDE (*ar-te-vel'deh*), **JACOB VAN** (*c.* 1290-1345). Flemish patriot. Was elected commander of the Ghent forces, after assisting the people in their strife against Louis, Count of Flanders. In 1335, with aid of the English, he ejected Louis. Served as ruler nine years.

ARTEVELDE, PHILIP VAN (1340-1382). Son of Jacob. Leader of the Flemings against Count Louis. Defeated the Count's forces, but later was conquered, and killed in battle at Roosebeke, Nov. 27, 1382, by the forces of Charles VI. of France.

ARTILLERY. (1) Term applied to projective arms on carriages not fired from hand or shoulder; (2) to troops serving such arms; (3) to scientific treating of guns, their service, and the organization and administration of personnel. Early cannon were naturally crude and are said to have been first used at Crecy; first regimental establishment by William III. (1689-1702); used largely during French religious war (sixteenth century); improved by Gustavus Adolphus (seventeenth century); explosive shells introduced by Dutch and English; Napoleon I. outlined and used text-book tactics of present day; shrapnel invented by Major Shrapnel (1803); Congreve rockets by Sir W. Congreve (1806); rifled siege guns proved inefficient in Crimean War; improved in Italian War (1859); receiving greatest advance during American Civil War (1861-1865) and the Franco-German War (1870); smokeless powder and increased size of cannon being most recent innovations.

ASSYRIA, KINGDOM OF. The country between and about the Tigris and Euphrates rivers. Kingdom took its rise about 2084 B. C., under Ninus, who was called Assur. After an existence of about one thousand two hundred and sixty-four years it came to an end with Sardanapalus.

ATHENS. Mighty city whose founding is lost in tradition. Named after the Goddess Athene. Its earliest record is the memory of Eleusis regarding its independence (683 B. C.). Famed for its great civilizing growth; its magnificent code of laws considering the poorer citizens, the wise Solon reforming the constitution on a democratic basis that recognized four classes of citizens according to wealth and legitimacy. Prospered marvelously in commerce, art, and war; produced men like Solon, Phidias, Sophocles, Aeschylus, and the culture they gave to succeeding generations. Was mistress of the Aegean (480-430 B. C.), but declined and merged into the history of Greece.

ATLANTA. Capital of Georgia, 294 miles northwest of Savannah. Known as the "Gate City"; largest city in the state; commercial metropolis of northern section; important railroad center of the South. First settlement (1839) called Terminus from its being terminus of the Georgia railroad, completed (1845). Incorporated as town of Marthaville (1843); present name adopted (1845); chartered as a city (1847). Of rapid growth, population being 15,000 (1861); an important Confederate city. Objective point of General Sherman's campaign (1864); several great battles fought, until Sherman by flank movement compelled Hood to evacuate (1864); Sherman took possession ordering civilians to leave within five days, turning city into vast military camp; practically destroyed city by fire when leaving it for Savannah later in the year. Became capital of Georgia (1878). Population 2,572 (1850); 89,872 (1900); estimated at 104,984 (1906).

AUGUSTA. Capital of Maine, on Kennebec river. First permanent settlement when Plymouth Company built Fort Western (1754); was known as Cuhnoc from the earlier Indian village. Incorporated as Hallowell (1771); then Harrington (1797); then Augusta. Became capital of state (1831); incorporated as city (1849). Population, 11,683 (1900).

AUSTERLITZ. Town in Moravia; scene of a signal victory of Napoleon I. against allied Russian and Austrian armies, thwarting plan to cut off the French from Vienna. Allies fled in disorder losing half their army of 84,000 men. French army numbered 70,000.

AUSTRIAN SUCCESSION, War of (1740-1748). On October 20, 1740, the male line of the Hapsburgs became extinct with the death of Charles VI., whose daughter, Maria Theresa, assumed the government. Other claimants appeared, and the War of the Aus-

trian Succession began. An old claim of the Hohenzollerns upon Silesia was revived by Frederick II. of Prussia, who conquered that country. England took the part of Austria, while France supported the elector of Bavaria, who, assuming the title of Archduke of Austria, was crowned King of Bohemia at Linz and Prague, and, in 1742, elected emperor as Charles VII. But the Hungarians stood loyally by their queen, who was, however, forced to yield Silesia to Prussia at the Peace of Breslau (1742). Two years later Frederick renewed the war by coming to the assistance of the emperor, whose enemies had overrun his dominions. In January, 1745, Charles VII. died, and Maria Theresa's husband (Francis, Duke of Lorraine) was elected Roman emperor as Francis I. Prussia was confirmed in the possession of Silesia by a second treaty of peace (1745), and in 1748, at the Peace of Aix-la-Chapelle, Austria was obliged to cede Parma, Piacenza, and Guastalla to Don Philip of Spain. But the existence of the Austrian monarchy was secured by these sacrifices.

AUTTOSE TOWNS (November 29, 1813). With 950 of the Georgia state militia, Brig. Gen. John Floyd determined to avenge the massacre at Fort Mims, and early on November 29, 1813, attacked two Auttose villages in Georgia. After a desperate struggle the Indians were defeated and fully 200 slain, and their dwellings burned.

AUX CANARDS (July 12, 1812). The first battle during the War of 1812 occurred near the Aux Canards, a tributary of the Detroit river. A division of General Hull's forces under Colonel Cass encountered the British four miles below Fort Malden, and after a short skirmish drove them back to the fort.

AVARICUM. 52 B.C. When the Gauls began to revolt against Roman rule, Caesar immediately put himself at the head of an army and crossed the Alps. Avaricum (modern Bourges, in France) was taken, burned, and many of the inhabitants slain.

AVERYSBORO (March 15, 1865). Early in 1865 Sherman left Savannah and the adjacent forts in charge of General Foster and started north to join Grant near Richmond. At Averysboro, N. C., Sherman's advance division led by Slocum was met by Hardee, who wished to keep him engaged until reinforcements arrived. The fighting took place during a hard storm, and resulted in the Confederates being driven to Smithfield with a loss of 865 men. The Federals lost 678 men.

AZTECS. The name commonly applied to all ancient semi-civilized tribes of Nahuatlan stock in Central America and southern Mexico; correctly given to seven allied tribes occupying the valley of Mexico and its immediate vicinity, where, according to tradition, they migrated together from the north. Tenochtitlan, now the city of Mexico, became the capital of the chief tribe, which by successive wars of conquest gradually acquired control over nearly all the tribes of southern Mexico. Thus the Mexican Empire was built, which flourished for perhaps two centuries, until 1521, when it was overthrown by Cortez. The Aztecs were noted for their cruelty and the bloody character of their religious rites, but still possessed a high degree of culture. In villages near the City of Mexico are some of their descendants who yet retain their ancient language.

BAALBEK. Ruined city in ancient Coele-Syria, once the chief seat of sun worship, as its name implies. During the Seleucid dynasty the Greeks changed the name to its Greek equivalent, Heliopolis. Baalbek was once the most magnificent of Syrian cities, filled with beautiful monuments, fountains, and palaces. Now it is but an insignificant village, famous only for its ruins. It was made a Roman colony by Augustus, who placed a garrison there. The oracle at Baalbek was so highly regarded that it was consulted by the emperor Trajan, second century, before beginning his second Parthian campaign. A great temple was built by Antoninus Pius, 138-161, the platform and superstructure being of a much earlier date. This temple afterwards became a Christian church, and was turned into a fortress in the wars which followed the sacking of the city by the Arabs, 748. In 1400 the city was plundered completely by Timur. In 1759 a terrible earthquake destroyed what remained of the city after the devastations from the Arabs, Tatars, and Turks.

BABYLON. The capital of Babylonia from about 2300 B. C. when Hammurabbi united under one head the South Mesopotamian States. Babylon became the most important city of the Euphrates valley, its political supremacy causing the pagan god of Babylon, Marduk, to be made the head of the Babylonian pantheon. The city reached its highest glory between 1800 and 538 B. C. (the fall of the Nec-Babylonian monarchy), rulers of this period rivaling each other in fortifying and beautifying the city. Sennacherib, King of Assyria, in 689 B. C. destroyed Babylon, but it rose to new glory under Nabopolassar and Nebuchadnezzar. This second Babylon is the famous city celebrated by classical writers. For its history, see BABYLONIA, with which it is closely woven.

BACON, NATHANIEL (1648-1676). An English colonist of Virginia who led "Bacon's Rebellion."

BACON'S REBELLION. An uprising of Virginian colonists in 1676 against Governor William Berkeley on account of excessive and unfair taxes, hampering of commerce, and refusal of protection against the Indians. Bacon took the lead, defeated the Indians twice, captured and destroyed Jamestown, imposed "Bacon's Laws" for the correction of abuses. The rebellion is now regarded as a forerunner of the War of Independence.

BAD AXE (August 2, 1832). After the battle on Wisconsin Heights, the Indians fled toward the Mississippi river, pursued by the allied forces of Atkinson, Henry, and Dodge. On August 1st the steamboat Warrior, coming to relieve the whites, was sighted by the Indians. In answer to their signals with white flags, the Warrior opened a heavy fire, killing 23 of the Indians. On the morning of August 2d Atkinson's army caught the Indians in the valley of the Bad Axe river. A sharp conflict followed, in which the Indians were scattered and about 200 of their number slain. Black Hawk escaped, but returned later and surrendered at Prairie du Chien.

BADEN-POWELL, ROBERT STEPHENSON SMYTH (1857-). An English major general, who, during the Boer War, held the town of Mafeking for 215 days with a force of 1,200 men against Boer assaults, famine, and sickness until relieved (May 18, 1900). In 1900 he became chief of the South African Constabulary, a force of 1,200 men.

BAINBRIDGE, WILLIAM (1774-1833). American naval officer. Captain in 1800; conveyed tribute to the Dey of Algeria; commander of the Philadelphia in the Tripoli War (1801-1805); ran aground and with 300 men was imprisoned until the close of the war; commodore (1812) of the Constitution, Hornet, and Essex, captured the British frigate, Java; attached to the navy yards for several years; chief of the board of naval commissioners (1824-1827).

BAKER, EDWARD DICKINSON (1811-1861). An American soldier. Of English birth he came to United States in 1816; prominent politician and lawyer of Springfield, Ill., from which state he was sent to Congress in 1844. Resigned in 1846 to serve in Mexican War in which, at the battle of Cerro Gordo, he commanded a brigade. In 1860 was chosen as United States Senator from Oregon. Enlisted in Federal army at outbreak of Civil War, as colonel; was slain at battle of Ball's Bluff, Va. (Oct. 21, 1861).

BALAKLAVA. October 25, 1854. Thirty thousand Russians attacked the English at Balaklava, a small town in the Crimea, hoping to gain possession of the harbor. They easily defeated the Turks, who defended part of the works, but the British troops, led by Sir Colin Campbell, withstood every attack. The Russians were finally obliged to retreat, but as they retained some of the ground previously occupied by the enemy, they claimed the victory. It was during this battle that the famous Six Hundred made their charge.

BALKAN INDEPENDENCE. By the treaty of Berlin (1878), Bosnia, including Herzegovina, was given to Austria for permanent occupation; Montenegro secured the seaports of Antivari and Dulcigno; Servia was proclaimed an independent principality, receiving the district of Old Servia on the upper valley of the Morava; Roumania became independent, ceasing to pay tribute to the Porte, but was obliged to give back to Russia the land between the Pruth and the northern mouth of the Danube received from that country in 1856 and acquiring in return, from Bulgaria, the large but marshy Dobrudscha district, including the port of Kustendje on the Black Sea; Bulgaria was subjected to the suzerainty of the sultan, and divided into two parts, losing besides Dobrudscha the northern or Bulgarian part of Macedonia, the Bulgarians dwelling between the Balkans and Adrianople being separated from their kinsmen north of the Balkans in a province called Eastern Roumelia, which was to remain Turkish under a Christian governor nominated by the Porte with the consent of the Powers. In time of war Turkey was allowed to occupy the passes of the Balkans. Attempts were made to form a Balkan Confederation to resist Russian aggression, after the conclusion of the great war of 1878. But so much bitterness among the rival races was aroused by the revolt of Eastern Roumelia,

followed by the Servo-Bulgarian War and the powers' chastisement of Greece that for many years nothing more was heard of a Balkan Confederation. In 1885 the two Bulgarias were united under Prince Alexander, a union toward which the czar of Russia displayed great hostility, and which resulted in a brief war between Servia and Bulgaria during the closing months of 1885. Prince Alexander and the Bulgarians were defeated by the larger Servian army, and only the intervention of Austria-Hungary prevented them from invading Servia. In the hope that Russia would become more friendly, Prince Alexander abdicated, September, 1886. His successor was chosen in July, 1887,—Prince Ferdinand of Coburg, whom the Powers, including Russia, failed to recognize until 1896, when Prince Ferdinand's son, Boris, was received into the Greek Church. The National Assembly (Sobranje) confirmed Boris as heir to the title. Servia was proclaimed a kingdom in 1882. A liberal constitution was promulgated by King Milan, who, on March 6, 1889, abdicated in favor of his son, Alexander I. In 1893 Alexander dispensed with a regency, beginning a high-handed personal rule which aroused the hostilities of his people and on June 11, 1903, he and Queen Draga were murdered. The Skupshtina elected Prince Peter Karageorgevitch, who had been in exile, king as Peter I. Montenegro never came under Turkish rule, and has always been independent. Roumania was declared and recognized as a kingdom in 1881. Balkan unity is prevented by the jealousy between Bulgaria and Servia, and the hereditary hostility between the former and Greece augmented by the desire of both for the possession of Macedonia.

BALTIMORE. Metropolis of Maryland. Founded by the expansion of trade and increase of population demanding a port at the head of the Chesapeake. Petition to the Provincial Assembly praying for the erection of a town on the north side of Patapsco river, 14 miles from the bay, resulted in a bill being passed to that effect (1729). In the race for supremacy of trade Baltimore forged ahead; was responsible for the zeal and energy of Maryland in the War of Independence, making the valor of the "Maryland line" immortal. Foreign commerce was cut off but local manufactures and shipping stimulated local merchants engaging extensively in the world's trade, making "Baltimore clippers" world famous. Attacked by land and water (1812) but successfully defended. During bombardment of Fort McHenry, Francis Scott Key composed "The Star Spangled Banner." The Chesapeake & Ohio Canal and the Baltimore & Ohio Railroad were carried forward by local enterprise; first telegraph line in United States was between Baltimore and Washington; industry, trade, and commerce suffered during Civil War, communication with South was cut off and Western trade diverted into other channels. A mob attack on a Massachusetts regiment (1861) inflamed the country and led to Federal occupation. At the close of the war the city quickly rose to its natural importance. Has finest system of grain elevators in the country.

BANNOCKBURN, BATTLE OF. Fought three miles from Stirling between 30,000 Scotch under Robert Bruce and 100,000 English under King Edward II., when the latter were routed with a loss of 30,000 slain (June 24, 1314). By this victory Bruce secured his throne and the independence of Scotland.

BANQUO (eleventh century). A Scottish warrior and ancestor of the house of Stuart. In 1066 he joined Macbeth in a conspiracy against Duncan and was slain by Macbeth treacherously.

BARBAROSSA (RED BEARD), HORUK (1473-1518). A celebrated Turkish corsair, native of Mitylene. Became commander of the fleet of the emir of Tunis; in 1515 made himself sovereign of Algiers. He was conquered and slain by the Spanish general Gomarez near Oran, in 1518. His brother, Khair-ed-Din, with Turkish assistance, seized both Algiers (1519) and Tunis (1533); the following year he was made chief admiral of the Turkish fleet by Sultan Solyman II.

BARBERINI. A celebrated Italian family of the seventeenth century, their prominence dating since the pontificate of Maffeo Barberini (Urban VIII., 1623-1644). Enraged by the growing avarice and power of the Barberini, war was waged upon them by the families of the Medici, Este, and Farnese (1641-1644), who defeated them. They were forced to flee to France under Pope Innocent X. The precious library collected by Francesco Barberini was sold to the pope (Leo XIII.), in 1902, except the great works of art retained in the patrimonial palace of Rome.

BARCLAY DE TOLLY, MICHAEL (1761-1818). A Russian general, descendant of the old Scottish family to which Robert Barclay, the Quaker, belonged; participated in successive Russian wars; in 1812 was appointed commander-in-chief. His reputation as a general was based upon the auspicious part he took in opposing Napoleon's advance into Russia in 1812. He commanded the Russian division of the allied armies at Dresden and Leipzig; afterwards became prince and field marshal.

BAREBONES PARLIAMENT. A derisive name given to the "Assembly of Nominees," called by Cromwell on July 4, 1653. It took its name from a member named Praise-God Barebones. It passed many good laws and dissolved December 12, 1653.

BARKER, ALBERT SMITH (1843-). Rear admiral (retired) United States navy; first one in this country to fire high explosives in shells; born at Hanson, Mass.; attended naval academy (1859-1862); served in West Gulf blockading squadron (1861-1863); lighthouse inspector, 8th district (1878-1881), 2d district (1886-1889); at outbreak of war with Spain was a member of the Board of Strategy; commandant navy yard, Norfolk (1899-1900), navy yard, New York (1900-1903); commander-in-chief of North Atlantic fleet (1903-1905); retired (March 31, 1905).

BARKSDALE, WILLIAM (1821-1863). A Confederate officer in the Civil War; served in the Mexican War; represented Mississippi in Congress (1853-1861); a pro-slavery Democrat; resigned and took command of the Thirteenth Mississippi Volunteers, rose to brigadier general and fell at Gettysburg.

BARMECIDES (flourished eighth century). A prominent Persian family who came into power under the Abbasides, caliphs of Bagdad. Khalid-ibn-Barmek, one of them, was prime minister to the first two Abbasides. Yahya, son of Khalid-ibn-Barmek, possessing a character of great repute, was appointed minister by the renowned Harun-al-Raschid upon his coming into power to the caliphate (786). By his military knowledge and skillful municipal management he added greatly to the prosperity of the reign, the Caliph bestowing upon him the title of "Father." His four sons gained much influence with him in the government, arousing the hatred of the caliph to such an extent that he commanded that the prominent members of the family be put to death, and forbade the mention of their names under great penalty.

BARNET. April 14, 1471. During the Wars of the Roses, in England, the Yorkists, under Edward IV., and the Lancastrians, under the earl of Warwick, met at Barnet, in Hertfordshire. The contest was severe, but finally the Lancastrians were routed and Warwick slain.

BARNETTE, WILLIAM JAY (1847-). Rear admiral United States navy; born at Morrisville, N. Y.; graduated United States Naval Academy (1868); served in Asiatic fleet; member of general board (navy) (1902-1904), of army and navy joint board (July, 1903-June, 1904), and again of both boards (January, 1906); superintendent naval observatory Washington, D. C. (1908).

BARNEVELDT (*bar'neh-velt*), **JAN VAN OLDEN** (1547-1619). A Dutch statesman; became advocate general of the province of Holland (1585) and head of the republican party in opposition to Maurice of Nassau, whose oppressions he successfully restrained, thus bringing to an issue a twelve years' temporary peace with Spain (1609). Chosen "grand pensionary" of Holland; allied himself with the Arminians, opposing Maurice's upholding of the Gomarists (Calvinists), a sect receiving recognition by all classes of Holland; was illegally arrested, imprisoned (1619), and though innocent, was sentenced to death by approval of the Synod of Dort.

BARRAS, PAUL FRANCOIS JEAN NICOLAS, COMTE DE (1755-1829). Soldier of the French Revolution. Born in Provence. Active in the charges upon the Bastille (1789), and the Tuileries (Aug. 10, 1792); as member of National Convention voted for execution of King Louis XVI.; declared against the Girondists, May 31, 1793; was chosen commander-in-chief by Convention, they practically vesting him with a dictatorship for a time. Restrained with great determination the designs of the Royalists and cruelties of the Jacobins; October 5, 1795, reappointed commander-in-chief, he, aided by Napoleon, repressed decisively the movements of both sections. He was elected one of the five members of the Directory (1795) and practical dictator (1797). His pretentious extravagance led to his overthrow (1799). He died in Paris.

BARRY, JOHN (1745-1803). American naval officer, born in Ireland; settled in Philadelphia (1760); commanded the Lexington (1776); captured the tender, Edward, the first ship ever taken by a commissioned officer of the United States navy; commanded the Raleigh (1778); captured two English vessels on the Alliance (1781); was the first senior officer with the rank of commodore after the reorganization of the navy in 1794. Known as "Fighting Jack Barry."

BASTILLE. 1789. During the French Revolution Paris was at the mercy of the mob. A host of revolutionists surrounded the Bastille, and its defenders, unnerved at the sight of such a crowd, surrendered without resistance. The fighting was done at random, and in the excitement many lives were lost.

BATES, JOHN COALTER (1842-). American soldier, born in Missouri; lieutenant in the Federal army (1861); on Meade's staff from Gettysburg to the close of the war; captain in 1863; colonel in 1892; in service among the Indians for thirty years; on the board that adopted the Krag-Jorgensen rifle; brigadier general of volunteers in Spanish War; major general during Santiago campaign; military governor of Cienfuegos (1899); Philippines (1899); negotiated a treaty with the sultan of Sulu; commander of the Department of Southern Luzon (1900); retired (1906).

BATON ROUGE (August 5, 1862). From New Orleans, Admiral Farragut moved on and occupied Baton Rouge, on the Mississippi river above New Orleans, where he placed Gen. Thomas Williams in command. On August 5, 1862, General Breckinridge with the Confederate gunboat Arkansas appeared before the city and ordered its surrender. In the conflict which followed, the Confederates were defeated with a loss of 453 men. The Federals lost 383 men.

BATTERING RAM. An engine of war, consisting of a beam of wood having on one end a mass of iron or bronze, resembling the head of a ram, which was used in ancient times and in the Middle Ages. The place and time of its invention are unknown. Ezekiel mentioned it. It was received from the Greeks by the Romans. The battering ram in its simplest form was carried and impelled by the hands of the soldiers. Later it was suspended on a frame and made to swing; while another form moved on rollers. Ropes imparted the alternating motion. A wooden roof (testudo) was constructed to protect those working it, the whole being mounted on wheels. The length of the beam varied from 60 to 120 feet, the head sometimes weighing more than a ton. At times 100 men were required to impel the machine. Hardly any wall could resist its long-continued blows.

BATTLE-AX. From the remotest antiquity to the present day this weapon has been used in warfare. Battle-axes of stone or bronze were followed by those of iron or steel. A great variety of sizes, weights, and lengths of handle have been and are still used. That of the Franks, the Francisca battle-ax, was often used as a missile. One with a long handle is called poleax.

BAUTZEN. May 20, 21, 1813. The battle of Bautzen, a town in Saxony, was fought between the French, under Napoleon, and the allied Prussian and Russian forces, under Blucher and Wittgenstein. By very careful and well-planned movements Napoleon forced the allies to retreat and captured Bautzen.

BAVARIA, HOUSE OF (Germany). In the contention for the throne between Louis the Bavarian and Frederick of Austria the former prevailed and ruled (1314-1347), until his death, when Charles IV. of Luxemburg ascended the throne

BAYARD, or more properly BAYART, PIERRE DU TERRAIL, CHEVALIER DE (1476-1524). One of the most gallant of heroes of the Middle Ages; received his knighthood at battle of Fornuovo (1495), where he first achieved great honor; fought consecutively against Spaniards, English, and Italians and gained great distinction, winning such a successful victory for Francis over the Milanese as to incite the young king to beg for, and obtain, knighthood at his hands. During an attack in which France and Milan were engaged at the passage of Sesia (1524), he was fatally wounded. One of the purest characters of the Middle Ages, and known as "le chevalier sans peur et sans reproche."

BAYEUX TAPESTRY. A web of white canvas 204 feet long, 20 inches wide, containing embroidered scenes from the invasion and conquest of England by William the Conqueror (1066) done in colors with woolen thread. It is in the public library at Bayeux, France. It contains 1512 figures in 72 subjects with Latin inscriptions. Valuable as giving details of the events more vividly and graphically than literature does. It deals with the life of Harold, Edward the Confessor, the Norman Invasion, Battle of Hastings, and Harold's death. Said to have been done by Matilda, wife of William the Conqueror.

BAYONNE DECREE. Napoleon pretended to help the United States commerce in 1808 by ordering that no vessels flying the American flag should enter the ports of France, Spain, Italy, and the Hanse towns. He argued that such vessels would either be flying false colors, or violate the laws of the United States and so help England. Over 300 American vessels were confiscated and sold for the benefit of the French treasury under this decree.

BAZAINE, FRANCOIS ACHILLE (1811-1888). A French marshal. Won distinction by his services in Algeria, in Crimean War, in Spain, and Italian campaign (1859); engaged in French expedition to Mexico (1862), and in 1863 held supreme command of their forces; was at head of Third Army Corps near Metz at declaration of war with Germany; led forces in Franco-Prussian War, retreating to Metz, where he surrendered, after all attempts to escape proved futile, on Oct. 27, when 173,000 men with three marshals and 6,000 officers, became prisoners of war. Accused of being a traitor, by the voice of the nation in 1873, was tried by court-martial and sentenced to death, but was committed to 20 years' imprisonment in the Isle of St. Marguerite. He escaped in August, 1874, going to Madrid, where he died.

BEAUFORT (February 3, 1779). After the state of Georgia had been subdued, the British turned their attention to South Carolina. Colonel William Moultrie was put in command of an American army and sent to Beaufort to check the advance of the British. At the approach of Major Gardiner and his British troops, Moultrie advanced and offered battle. In less than an hour the British retreated with the loss of half their number.

BEAUHARNAIS (*bo-ar-nay'*), **EUGENE DE** (1781-1824). A French general. Son of the Vicomte de Beauharnais. Gained high military honors and in his campaign in Egypt (1804), became general of a brigade. The following year received title of prince and appointed viceroy of Italy; declared later by Napoleon as his adopted son and heir to Kingdom of Italy; shared in the honors of Wagram, and during war with Austria, and in the retreat of Moscow, his great cleverness secured for the French army safety from complete annihilation. His conduct at the victory of Lützen (1813) was highly commended. After the downfall of Napoleon he returned to Bavaria.

BEAUHARNAIS, HORTENSE EUGENIE (1783-1837). The accomplished adopted daughter of Napoleon, Queen of Holland, and Countess of Len; born in Paris; married Louis Bonaparte in 1802, and was the mother of Napoleon III.

BEAUREGARD, PIERRE GUSTAVE TOUTANT (1818-1893). A Confederate general in the Civil War; born in New Orleans; graduated from West Point (1838); distinguished in the Mexican War; superintendent of West Point (1860); resigned to enter the war for the South (1861); began the Civil War by the bombardment of Fort Sumter (April 12, 13, 1861); defeated McDowell at first Bull Run (July 21, 1861); next day made a general. On the death of A. S. Johnston on the second day of Shiloh (April 7, 1862) he took chief command. Defended Charleston (1863); commanded at Petersburg (1864); surrendered with General J. E. Johnston to Sherman (April 26, 1865). President of Jackson and Mississippi railroad (1865-1870). Adjutant general of Louisiana (1878); some years manager of the Louisiana Lottery.

BEAVER DAM (June 24, 1813). An American regiment led by Boerstler was sent to capture Beaver Dam, the present town of Homer, Canada, near the western shore of Lake Ontario. The Americans were met at Beaver Dam creek by Lieutenant Fitzgibbon, who ordered his opponent to surrender. Boerstler, believing there was a large army accompanying the British, surrendered 542 prisoners.

BELGRADE, TURKS DEFEATED AT. After the siege and fall of Constantinople, Mohammed II. tried to invade Hungary, but was defeated at Belgrade by the Hungarians under Janos Hunyady in 1456.

BELISARIUS (about 505-565). A general under Emperor Justinian. In 530 he gained a victory over a Persian army twice as large as his own. He put down a rebellion in favor of a new emperor, Hypatius,

killing 80,000 of the rioters at Constantinople. In 534 he gained Africa from the Vandals and took King Gelimer prisoner. He also took Sardinia and the Balearic Islands on his way home. He was made consul in 535. In the same year he conquered Sicily; in 536 all of the cities of southern Italy, except Naples; he entered into Rome and held it for a year against the Goths; he drove the Goths to Ravenna and took their king Vitiges prisoner. He was recalled by Justinian before he had completed his work. After a campaign in Persia, he was sent, in 545, to expel the Goths from Italy. His army was too small and as no reinforcements were sent him he gave up the command after three years and returned home. His rival, Narses, was appointed to his place. In 563, in spite of his faithful services he was accused of conspiracy by the emperor Justinian. It is said that his innocence was proved and that he was restored to full honor.

BELL, JAMES MONTGOMERY (1837-). An American soldier; born in Williamsburg, Pa.; served through the Civil War; on the frontier (1866-1898); in the Sioux wars (1876-1881); the Nez Percés War (1877); brigadier general of volunteers (1899); sent to the Philippines (1899); commander of Department of Southern Luzon (1900); and military governor of his district; chief of staff (1906-1910).

BELL-THE-CAT. Certain Scottish lords were considering how to remove from the favor of James III., the upstart mason, Cochrane, when to the inquiry "Who will bell the cat?" Sir Archibald Douglas replied, "That will I," thereby receiving the name of "Bell-the-cat."

BERESFORD, LORD CHARLES WILLIAM DE LA POER (1846-). British naval officer and parliamentarian. Born in county of Waterford, Ireland. Educated at private schools; entered the schoolship Britannia as cadet (1859); sub-lieutenant (1866); lieutenant (1868); commander (1875); captain (1882); rear admiral (1897). Aide-de-camp to Queen Victoria (1896-1897). At Alexandria bombardment he commanded the gunboat Condor, silencing the most formidable Egyptian land batteries by phenomenal skill and bravery; winning applause by flag signal, from entire fleet, "Well done, Condor!" Served with Nile column of Gordon Relief Expedition (1884); commanded naval brigade at Abu Klea, Abu Kru, and Metemneh battles, being made Commander of the Bath, Member of Parliament for Waterford (1874-1880); East Marylebone (1885-1900), resigning for active service as rear admiral of Mediterrancan Squadron (1900-1902). Returned to Parliament for Woolwich (1902). Admiral (1906) on retired list. Has three medals for saving life. Went to China (1898) representing Associated British Chambers of Commerce; returning by way of the United States, making important speeches favoring the "open door" in China and a closer union of United States, England, and Germany. With Lord Kitchener and Lord Roberts forms the popular military or naval trio with the British public.

BERING SEA DISPUTE. This international controversy in which Great Britain and the United States were chiefly concerned arose from the depredations on the seal fisheries of the North Pacific by unlicensed Canadian sealers. The Russian Government had directed the preservation of the seals for ninety years, the United States still continuing this care after the cession of Alaska in 1867, and leasing the business to the North American Commercial Company. The slaughter of the seal was carefully restricted to 100,000 seals annually, which in 1885 represented a capital of about $30,000,000, the government receiving a yearly revenue of $1,000,000 from its royalty of $10 per skin. Canadian and American capital in 1886 fitted out a fleet of vessels in British Columbia to hunt seals while feeding in the water beyond the three-mile territorial limit. This business increased rapidly, causing such depredations that the licensed slaughter was reduced to 21,000; which resulted in the ruling by Secretary Manning of the Treasury Department that Bering Sea, to the western limit of the Russian cession, was closed; that is, under the exclusive jurisdiction of the United States. American patrols seized Canadian schooners (for which in 1898 the United States paid Canadian shipowners $473,151.26, in accordance with a treaty made two years previous). Sir Sackville-West, then British Minister, protested; a circular letter having in the meantime been sent by Secretary Bayard to Great Britain, France, Germany, Japan, Russia, and Sweden, requesting coöperation to prevent the destruction of the industry. A court of arbitration was appointed which met in Paris, March 23, 1893. Their decisions were mainly against the United States, and were ineffectual, the whole matter being finally referred to the Anglo-American Commission, which, upon its indefinite adjournment in February, 1899, had reached no agreement, nor have any efforts been successful in preventing the wholesale destruction of the seals, and the extermination of the species seems unavoidable.

BERLICHINGEN (*ber'lik-ing-en*), **GOETZ VON** (1480-1562). German feudal knight born at Jagsthausen in Württemberg. A rebellious noble, he was twice put under the ban of the Empire (1512-1518). Served against Swabian League (1519); in the Peasants' War (1525), and, after the Swabian League dissolved, aided Charles V. (1542) against the Turks and Francis I. The story of his life furnished material for Goethe's drama.

BERLIN, CONGRESS OF. A European diplomatic Congress (June 13, 1878) to settle the Eastern question, which grew out of the Russo-Turkish War. The San Stephano Treaty was reconsidered; the boundaries of Bulgaria were cut down; eastern Roumelia was made a Turkish province (but it soon united voluntarily with Bulgaria); Crete was to be governed better; boundaries of Greece were defined; Bosnia and Herzegovina were placed under the administration of Austria-Hungary; Montenegro, Servia, and Roumania were declared independent and territory added to them; the Danube below the Iron Gate was neutralized; Russia kept most of her conquests in Asia; Great Britain held Cyprus for Turkey as a guarantee against further aggressions of Russia in Turkey in Asia.

BERTHIER (*ber-te-ay'*), **ALEXANDRE** (1753-1815). Born in Versailles. French marshal. Prince of Neuchatel and Wagram. Served under Lafayette in American War of Independence. Appointed major general of the National Guard of Versailles at declaration of French Revolution. In Egyptian campaign was Napoleon's chief of staff. Minister of war from 1799-1808. On return of Napoleon from Elba he retired to Bavaria and died by his own hand.

BICKNELL, GEORGE AUGUSTUS (1846-). Rear admiral (retired) United States navy; born at Batsto, N. J.; served as first lieutenant U. S. V. I. during Morgan raid in Indiana; graduated United States Naval Academy (1866); served on Iroquois, Asiatic fleet (1867-1870), and was at opening to trade of ports of Kobé and Osaka, Japan; in landing party which repelled Prince Hizen, and afterwards second in command of marines protecting Yokohama until order was restored; during war with Spain commanded U. S. S. Niagara, and served in Cuban and Porto Rican waters; commanded Monocacy, Shanghai, China (December, 1899); commandant naval station, Key West, Fla. (1902-1904); commanded Texas, flagship of coast squadron (October, 1904-June, 1906); commandant Pensacola Navy Yard (July, 1906-February, 1907); commandant navy yard, Portsmouth, N. H. (February, 1907); rear admiral (February 8, 1907).

BIG BETHEL (June 10, 1861). A detachment of the Federal forces at Fortress Monroe, Va., was put in command of Brig. Gen. E. W. Pierce and sent to disperse the Confederates at Big and Little Bethel, on the peninsula between the York and James rivers in Virginia. On June 10, 1861, the Union forces tried to surprise the enemy, but were unsuccessful, and in the skirmish which followed, the Federal troops were repulsed with a loss of 68 men.

BIG BLACK (May 17, 1863). After the battle of Champion Hills, Miss., Grant moved toward Vicksburg. On the west side of Big Black river, McClernand's corps encountered the Confederates under Pemberton, and after a desperate assault drove them to the Vicksburg fortifications. The total loss to the Federals was 279. The Confederates reported a loss of 2,250.

BLACK DEATH. An Oriental plague, caused by the presence of a specific microbe, and so named from the black spots which appeared in the skin as a result of subcutaneous hemorrhages; the victims living but two or three days after the attack. During the third century B. C., it appeared in Libya, Egypt, and Syria. About 542 it began in Egypt, and passing through Constantinople, spread throughout all Europe, lasting about fifty years. In the fourteenth century the plague desolated the world. In China 13,000,000 are said to have perished, and nearly 24,000,000 in the rest of the East; while in Europe the number is conservatively estimated as 25,000,000. The horrors of the time cannot be realized. Added to those attending the disease there was a terrible persecution of the Jews, who were killed by fire and torture in the belief that they had caused the pestilence by poisoning the public wells. The scarcity of laborers after the plague had subsided brought about a change in social conditions which finally resulted in the "reorganization of landholding relations on the basis of rent, as between owner and tenant, and wages, as between farmer and laborer."

BLACK HOLE OF CALCUTTA. A dungeon 20 feet square, with only two small windows obstructed by a porch, into which 146 prisoners were confined (June 20, 1756) during the Indian Mutiny by Siraj-ud-Daula. Only 23 survived the night.

BLACK PRINCE. Edward, Prince of Wales, son of Edward III. of England and victor of Poitiers; died in 1376. The name was derived from the color of his armor. His son reigned as Richard II.

BLACK ROCK. (1) Black Rock, now a part of Buffalo, N. Y., was captured by the British on July 11, 1813. (2) The American militia which fled from Black Rock when the British captured it met reinforcements near Buffalo and returned to punish the invaders. After a brief conflict, the British were obliged to retreat with the loss of Lieutenant Bishopp. (3) In December, 1813, Black Rock was sacked and burned by the British. The inhabitants who could not escape were massacred and only one building was left standing.

BLACKSTOCK (November 20, 1780). General Sumter with a force of Americans, met the British under Colonel Tarleton, at Blackstock's plantation, Union District, S. C., and after a desperate struggle the British retreated with a loss of about 200 men.

BLACKSTONE, WILLIAM (? -1675). A New England colonist; the first white man to settle on the site of Boston, Mass. (1623). Sold his land (1634) and became the first white settler in Rhode Island.

BLACK WARRIOR. An American merchant vessel on her way from Mobile to New York called at Havana, Cuba, and was seized, her cargo confiscated, and her captain fined for alleged customs violations. Spain narrowly escaped a war in consequence. The cargo was restored, the captain's fine remitted and the vessel released (February, 1854).

BLACK WATCH. A famous Highland regiment, organized by the Earl of Athole (1688); became the 42d Regiment of the Line in 1739. They wore a dark colored tartan. Their career began with Fontenoy, and few regiments equal them in battle honors.

BLADENSBURG. In Prince George County, Md., 6 miles northeast of Washington. On August 24, 1814, a British force of 5,000 under General Ross and Admiral Cockburn defeated 3,500 untrained Americans under General Winder. The English lost 500; the Americans, 76. In 1820, Commodore Decatur was mortally wounded here in a duel with Commodore Barron. Once a noted dueling ground.

BLAKE, ROBERT (1599-1657). English admiral during Cromwell's time. In 1652 fought four naval engagements with the Dutch led by Tromp, De Ruyter, and De Witt; burned Tunis (1654); defeated the Spaniards at Santa Cruz (1657).

BLENHEIM. August 13, 1704. One of the decisive battles of history was fought between the old town of Hochstadt and the village of Blenheim, in Bavaria. The French and Bavarians numbered about 60,000; the English, German, and other allies, about 53,000, commanded by Marlborough and Prince Eugene. A brave charge of the allies broke the forces of the French and Bavarians, and about 14,000 fortified at Blenheim were obliged to surrender as prisoners of war. The defeat of the French at Blenheim changed the course of the war; the hopes of Louis XIV. were shattered; and more confidence was placed in the English. This battle is also called the battle of Hochstadt.

BLENNERHASSETT, HARMAN (1764-1831). A wealthy British emigrant (1797) to America, who bought the island bearing his name in Ohio river a few miles from Parkersburg, W. Va. Aaron Burr visited him in 1805 and involved him in his alleged treason, for which Blennerhassett was twice arrested, tried, and acquitted. He died in the island of Guernsey.

BLIGH, WILLIAM (1754-1817). An English admiral, sailed with Captain Cook on his second voyage around the world; commander of the Bounty (1787); on the passage from Tahiti to Jamaica, the crew mutinied and set the captain and 18 men afloat in the ship's launch. After three months of hardships they landed with loss of a single life at the Island of Timor, 3600 nautical miles from their starting point. The mutineers settled in Pitcairn Island.

BLOREHEATH. September 23, 1459. As the army of the Lancastrians, under Henry VI., were forming to make an attack upon the Yorkists, led by the earl of Salisbury, the latter fell upon them at Bloreheath, in Staffordshire, England, and completely routed them.

BLUCHER (*bloo'ker*), **GEBHARD LEBERECHT VON** (1742-1819). Prussian field-marshal, born at Rostock. Served for a brief time in the Swedish army, before entering the Prussian. Present in many actions against the French. Compelled to surrender after the fall of Lübeck (1806), but soon exchanged for the French general Victor. Given chief command in Silesia in 1813, and upon his victorious entry into Leipzig (Oct. 19), received the rank of field-marshal. Pursuing the French across the Rhine, the allies entered Paris, Mar. 31, 1814. Blücher's timely appearance at the battle of Waterloo contributed largely toward the victory that day. Received with great enthusiasm in England (1814), the University of Oxford conferring on him the degree of doctor of laws. Frederick William III. created him Prince of Wahlstadt, and in his honor instituted the Order of the Iron Cross.

BLUE LICKS (August 19, 1782). Nearly 200 Kentucky pioneers encountered a strong band of Indians at Blue Licks, on the Licking river, in Kentucky, and were defeated, losing 62 of their number.

BLUE, VICTOR (1865-). An American naval officer; born in North Carolina. Served on the Suwanee in the Spanish-American War; penetrated 72 miles within the Spanish lines and ascertained that the Spanish fleet was in Santiago harbor. Placed in command of the gunboat Alvarado, taken from the Spanish; took part in the attack on Manzanilla (1898); flag lieutenant in the Boxer troubles in China (1900); assigned to duty in the Philippines (1900-1901); inspector of equipment Cramp's shipyard (1901-1902); aid to Admiral Cooper, and aid to squadron commander of Asiatic fleet (1903-1904); in bureau of ordnance (1905); inspector ordnance, Newport News, Va. (1905-1907).

BOHEMIA. Country named from the Celtic people, Boii, who had settled there and were driven out in the first century B. C., by the advancing Marcomanni; these in turn gave place to a Slavic people in the sixth century. Christianity introduced in the ninth century. Became part of Moravian realm; bishopship of Prague constituted (about 1090); became part of Roman Empire of Germans; was one of most powerful realms in Europe (1253-1278); immigration of German artisans developed country; House of Luxemburg ruled (1310-1437); Hussite wars convulsed the country, sowing the seed of nationality as against Germanization and laying foundations of the Slav-German-Magyar State of Austria-Hungary. Crown became hereditary in House of Hapsburg, Bohemia losing political freedom and religious liberty. Thirty Years' War of Protestants against the Hapsburgs (1618-1648); Protestants losing; endured Hapsburg rule until Pan-Slavic insurrection (1848), suppressed by fortress cannon, but proving the first step in ceaseless struggle to regain autonomy. Strongly united on national issues against Germany, but divided among themselves, the Austro-Hungarian empire is threatened by the apparent impossibility of reconciling either feudal and clerical party or the radical and irreconcilable party of Czechs to present conditions.

BOII. Celtic people migrating into Gaul from northern Italy and region east of the Alps; gave name to Bohemia. Migrated to avoid Romans in Italy and Germans in Bohemia; settled by Caesar in Aedui.

BOLEYN or **BULLEN** (*bool'en*), **ANNE** (1501-1536). Second wife of Henry VIII., mother of Queen Elizabeth, and daughter of Sir Thomas Boleyn. Secretly married to Henry on Jan. 25, 1533; crowned queen the following June; beheaded (May 19, 1536).

BOLIVAR, SIMON (1783-1830). A South American patriot; "The Liberator." In 1811 he joined the party in Venezuela who were trying to drive out the Spanish; won the freedom of the northwestern parts of South America. First president of Colombia (1819), comprising what is now Colombia and Venezuela; drove the Spanish out of Peru (1822); made dictator; resigned the latter office (1825); part of Peru became a separate state, named Bolivia in his honor.

BONHOMME RICHARD AND SERAPIS (September 23, 1779). John Paul Jones, in command of a squadron of three ships, of which the Bonhomme Richard was the flagship, opened battle with the English ships Serapis and Scarborough, under Captain Pearson, off the coast of Flamborough Head, England. The contest was sharp throughout, and with the Richard and Serapis lashed together the fighting was hand-to-hand. Finally, when both ships had caught fire and were almost destroyed, the Serapis surrendered; and, as the Scarborough had also been captured, the victory was complete.

BONNIVARD (*bo-ne-var'*), **FRANCOIS DE** (1496-1570). A Swiss patriot, hero of Byron's "Prisoner of Chillon." Became prior of St. Victor, near Geneva, in 1510, and aided the Genevese against the duke of Savoy, by whom he was imprisoned, at one time for two years, and later for six (1530-1536). Liberated

by the Genevese and Bernese, he returned to Geneva, where he received a pension, and died in honor.

BOONE, DANIEL (1735-1820). Famous American pioneer, born in Pennsylvania, but removed to North Carolina (about 1752) and later to Kentucky (1775). Noted for many daring exploits against the Indians, by whom he was captured February 7, 1778, taken to Detroit, and adopted into their tribe; but escaped the following June. Commandant of the Femme Osage District (1800-1804), under a commission from the Spanish authorities. Died in Missouri, but his remains were interred near Frankfort, Ky., in 1845.

BOOTH, JOHN WILKES (1839-1865). Assassin of Abraham Lincoln; born in Maryland; son of Junius Brutus Booth. An unsuccessful actor, he abandoned the stage in 1863. To avenge the defeat of the Confederacy, he formed a conspiracy against the life of President Lincoln, whom he mortally wounded on April 14, 1865, at Ford's Theater in Washington. Escaping from the building, Booth took refuge in a barn at Bowling Green, near Fredericksburg, Va. Discovered, he refused to surrender, and was shot after the barn had been fired. Later, most of his accomplices were captured, and four of them—Atzerodt, Herold, Payne (*alias* Powell), and Mrs. Surratt—were hanged.

BORDEAUX. (1) May, 732. The Moslems in their conquests did not overlook France, and in 732 Bordeaux was stormed and sacked by these invaders. (2) In 1653 revolution in Bordeaux reached such an alarming state that the king laid siege to the city. This movement encouraged the loyal party in the city and they were soon able to quell the disturbance. (3) During the latter part of the eighteenth century, France was kept busy suppressing revolts in the provinces. City after city was being seized. In 1793 the Republicans reduced Bordeaux; 15,000 of the inhabitants were thrown into prison, hundreds were guillotined, and the possessions and property of the citizens confiscated.

BORODINO. September 7, 1812. Borodino, a Russian village on the Moskwa river, was the scene of one of the most sanguinary battles of history. The French were commanded by Napoleon, the Russians by Kutusoff, and both armies numbered about 120,000. After an obstinate struggle the Russians retreated, leaving Napoleon an open road to Moscow. This battle is also known as the battle of Moskwa.

BOSCAWEN, EDWARD (1711-1761). An English admiral known as "Old Dreadnought." Was at Porto-Bello and Cartagena (1740); Cape Finisterre (May 3, 1747); defeated the French at Newfoundland (1755); took Cape Breton Island from the French (1758); defeated the French fleet at Lagos (August 18, 1759).

BOSTON. Capital of Massachusetts. Named after the town of Boston in England, where John Cotton, "the Patriarch of New England," was vicar for over 20 years at the fine church of St. Botolph (1612-1633). Built on peninsula known to Indians as Shawmut, or Sweet Water, and named Trimountain by the early colonists, from the three peaked top of one of its hills. First visited by exploring party from Plymouth (1621); colonists headed by John Winthrop located at Charlestown (1630); on invitation of William Blackstone or Blaxton, a "bookish recluse," colony moved to Trimountain (1630), where Blackstone had been living since 1626. Named Boston (1631); meeting house erected (1632) head of State street; Tremont street perpetuates "Trimountain." First grand jury met in Boston (1635); post office opened (1649); mint established (1651); printing office (1674); and the first newspaper in America, the *Boston News-Letter*, published (1704). Irritation against England began with the impress of seamen by the Home Government (1747); augmented by Stamp Act (1765); culminating in famous "Tea Party" in opposition to oppressive tax on tea. Boston Port Bill passed in retaliation (1774) by English Parliament closing harbor to commerce. At the outbreak of the Revolution Boston was occupied by British troops. Besieged by American army after skirmish at Lexington, and attempts to fortify Charlestown precipitated the Battle of Bunker Hill (1775). One of Washington's most brilliant exploits (1776) was the fortification of Dorchester Heights, forcing the evacuation of Boston by the English. Under cover of incessant cannonading at Roxbury, the heights overlooking the harbor were strongly fortified. When this was discovered at daylight, the English realized it would be impossible to take Dorchester Heights, and as their ships were exposed to the American guns, they retreated, leaving a large quantity of ammunition, cannon, and muskets.

BOSTON PORT BILL. An act passed March, 1774, by the British Parliament to punish Boston for the destruction of a cargo of tea (December 16, 1773). It was intended to close the harbor to commerce and move the capital to Salem and to make Marblehead a port of entry, until the owners of the cargo were indemnified for the destroyed cargo.

BOSTON TEA PARTY. December 16, 1773, a party of citizens of Boston, Mass., disguised as Indians, visited three ships in the harbor and threw 342 chests of tea overboard. It was a protest against taxation on the importation of tea, without representation.

BOTHA, LOUIS (1863-). A Boer commander who fought in the Kaffir campaign; was elected to the Volksraad at Pretoria; upon the outbreak of the Boer War with England in 1899, he was given a subordinate command but, upon the death of General Joubert (March, 1900), became commander of the Boer forces. He demonstrated great capacity by his victories at Spion Kop and Colenso; in 1907, Botha was chosen premier, and attended the conference of colonial premiers in London; premier of United South Africa (1910).

BOULANGER (*boo-lan'zhay*), **GEORGES ERNEST JEAN MARIE** (1837-1891). French general, born at Rennes. Visited the United States as head of the commission to the Centennial celebration, and also led a French deputation at the celebration of the centennial of the battle of Yorktown. Served in Algeria, Italy, and Cochin China. Minister of war, January, 1886-May, 1887. Soon after was arrested for attacking his successor, and in March, 1888, was deprived of his command and placed on retired list. Elected deputy from a number of departments in 1888-1889. A coup d'etat was expected; but fearing persecution for conspiracy, Boulanger fled to Brussels. He was convicted by the Senate of malfeasance, and on September 30, 1891, committed suicide in Brussels.

BOURBON, HOUSE OF (France). Began with Henry IV., who by virtue of the Salic law became heir to the French throne on the assassination of Henry III., and continued in a direct line to the Revolution. Louis XVIII. and his brother Charles X. were also in the direct line. With the interruption of the Revolution and the empire, the dynasty continued from 1589 to 1848. The Bourbons were descended from the sixth son of St. Louis, brother of Philippe III. Their reign came to an end with the flight of Louis Philippe and the setting up of the Second Republic (1848).

BOURBON, HOUSE OF (Spain). Began in 1700 with Philip V., Duke of Anjou and grandson of Louis XIV. of France, who was named in the will of Charles II. of Spain as his successor. Continued until 1808 when Ferdinand VII. was forced by Napoleon to abdicate, but in 1813 Ferdinand VII. was restored, the dynasty continuing until the flight of his daughter, Isabella II., in 1868, and the setting up of a provisional government under the presidency of Serrano, which in 1874 gave way to Alfonso XII., son of Isabella II. His son, Alfonso XIII., now reigns.

BOURBON (Orleans Branch of). Gave to France one king, Louis Philippe, who ruled from 1830 to 1848; died 1850.

BOURBON (Vendome Branch of). Attained by the fortunes of war the thrones of Spain, Naples, and Parma.

BOVIANUM. (1) 305 B. C. During the Second Samnite War, the Samnites, led by Gellius, attempted to force the Romans to raise the siege of Bovianum, in Italy, but they were completely defeated and obliged to acknowledge Roman supremacy in Italy. (2) Bovianum was captured by Sulla during the Social War.

BOWS. Extensively used in ancient times by the Egyptians, Scythians, Parthians, and Thracians; and in the time of the Romans by the Balearic Islanders, Numidians, Cretans, and other foreign mercenaries. These last were not a part of the legion, but skirmishers, to fight here and there, and draw the enemy into action. Archers for this purpose were also encouraged by the Greeks. The use of the English longbow was encouraged from Edward I. to Charles I., and won at Crecy and Agincourt. Lapp bowmen were in the army of Gustavus Adolphus when he invaded Germany in 1630, and part of the allied army which took Paris in 1814 are said to have been Cossack bowmen. But firearms coming into more general use at the beginning of the seventeenth century, the war bow and shaft were quickly set aside.

BOXER REBELLION. In China, 1900, a widespread anti-missionary and anti-foreign uprising in Shan-tung and other provinces of Northern China was instigated by the Chinese society called Boxers. Many

European missionaries and native Christians were murdered. At first the dowager-empress and the Manchu element at court opposed the movement, but afterward encouraged it. Baron von Ketteler, German minister at Peking, was assassinated, several legations were destroyed, and over two hundred foreign refugees within the walls of the British legation, Peking, were besieged. A relief expedition composed of United States, British, French, German, Russian, and Japanese forces was organized at once. The Taku forts were bombarded and destroyed by the allies, and under Admiral Seymour of the British navy an unsuccessful advance on Peking was made. Again the allied troops advanced, fighting severely at Tien-tsin, Pei-tsang, and Yang-tsun, and finally relieving the besieged on August 14, 1900. The court fled from the capital, which remained in the possession of the allies until peace was signed on September 7, 1901.

BOYNE, BATTLE OF THE (July 11, new style; July 1, old style, 1690). Three miles west of Drogheda, Ireland. Between James II. and William III., resulting in the defeat of the former and the ascendency of Protestantism in England.

BOZZARIS (*bot'zah-ris*), **MARCOS** (*c.* 1790-1823). Famous Greek patriot and leader in the war for independence,—"The Leonidas of Modern Greece." Born at Suli, in Epirus. Slain while leading a successful attack at Karpenisi.

BRADDOCK, EDWARD (1695-1775). British general, born in Perthshire, Scotland. Appointed major general and commander of British regular and colonial forces in America in 1754. In 1755 advanced on Fort Duquesne, where Pittsburg, Pa., now stands, and owing largely to his contempt for colonial methods of warfare was surprised by the French and Indians and routed with great loss; 62 out of 86 officers, and 914 out of 1,373 men engaged being either killed or wounded, while the French loss was slight. Braddock was mortally wounded and died at Great Meadows.

BRADFORD, ROYAL BIRD (1844-). Rear admiral (retired) United States navy; born at Turner, Me.; graduated United States Naval Academy (1865); rear admiral (November 23, 1904); chief of bureau of equipment, navy department (1901-1903); commanded 3d squadron of North Atlantic fleet. Principal shore duties; instructor at naval torpedo station, Newport, R. I.; preparation of new naval regulations; organization of naval department electricity; naval attaché Paris Peace Commission (1898); member of many technical boards. Retired (July 22, 1906).

BRAGG, BRAXTON (1817-1876). Distinguished Confederate general; born in Warren County, N. C.; graduated from West Point, 1837; rendered distinguished service in the Mexican War. Appointed, with full rank of general, to A. S. Johnston's command, on the death of the latter. On June 20, 1862, replaced General Beauregard as commander of the Western Department, of which position he was relieved in December, 1863. In February, 1864, appointed military advisor to Jefferson Davis; assigned in 1865 to active service under J. E. Johnston. After the war, Bragg became chief engineer for the state of Alabama, and had charge of the improvements in Mobile Bay. Died in Galveston, Texas.

BRANDY STATION, or FLEETWOOD (June 9, 1863). In 1863 there were occasional skirmishes in the vicinity of Brandy Station, northwest of Fredericksburg, Va. On June 9 a body of Federal cavalry led by Generals Buford and Gregg encountered the Confederates there and were repulsed with a loss of 500 men. On August 1 Buford attacked the Confederate Stuart and forced him to retreat, but was afterward obliged to fall back. Between October 10 and 16 skirmishes were frequent. The total Federal loss was 866 men; the Confederates lost 523 men.

BRANDYWINE, BATTLE OF (September 11, 1777). Between 18,000 British under General Howe and 11,000 Americans under General Washington. The Americans, though defeated, withdrew in good order. Lafayette was severely wounded in the battle. Howe occupied Philadelphia (September 26, 1777), and the Continental Congress adjourned first to Lancaster, then to York.

BRASIDAS (fifth century B. C.) A famous Spartan general. Prominent during the Peloponnesian War; defeated Cleon at Amphipolis (422 B. C.), when both were mortally wounded.

BRAZITO (December 25, 1846). During 1846, the Americans took steps to get possession of New Mexico and California. By August 19, 1846, Sante Fe and all the surrounding territory had been taken. With a regiment of Americans, Colonel Doniphan was sent south to join Wool. On December 25, 1846, an army of Mexicans led by General Ponce de Leon, met the Americans at the Brazito river, a tributary of the Rio Grande. A short but obstinate fight ensued which resulted in the disorderly flight of the Mexicans.

BREITENFELD. September 7, 1631. In a battle at Breitenfeld, the Swedes, under Gustavus Adolphus, defeated Tilly and the Imperialists. As Breitenfeld is only five miles north of Leipzig, in Saxony, this battle is often referred to as a battle of Leipzig.

BREWSTER, WILLIAM (about 1560-about 1644). Went to Holland (1608); procured the grant in England along with Bradford (1619); a leader of the "Mayflower Pilgrims" (1620); and was the ruling elder at Plymouth, a teacher and a preacher until 1629.

BRIDGEWATER. See LUNDY'S LANE.

BRIER CREEK, GA., BATTLE OF (March 3, 1779). Between 1,500 Americans under General Ashe, and a rather larger force of British under General Provost. The Americans were defeated with a loss of 200 killed and wounded and 200 prisoners; the British lost 5 killed and 11 wounded. Augusta was thus restored to the British for a time.

BRILL. The Dutch, in their struggle against Spanish rule, gained their first victory at Brill, in Holland. There, on April 1, 1572, De la Marck and Treslong defeated the Spaniards and captured the town.

BRISTOL. September 11, 1645. With a force of 2,300 men, Prince Rupert had been sent to hold Bristol, an important city in the west of England. The Parliamentarians, led by Fairfax, promptly laid siege to Bristol and carried it by storm, and Prince Rupert was obliged to surrender the whole place.

BRISTOW STATION (August 27, 1862). On August 26, 1862, as Pope was awaiting reinforcements at Bristow Station, southwest of Washington, in Virginia, he was attacked and his stores destroyed by the Confederates led by Jackson. The latter then withdrew to Manassas. The following day Hooker reached Bristow Station, where he found the Confederates under Ewell. After a battle in which both sides lost about 300 men, Ewell was defeated, which forced Jackson to evacuate Manassas.

BROCK, SIR ISAAC (1769-1812). The "Hero of Upper Canada." Commander of all English troops in Upper Canada (1810); lieutenant governor of the provinces; captured Detroit (August 16, 1812) and received General Hull's surrender; mortally wounded in American attack on Queenston (October 13, 1812).

BROKE, SIR PHILIP BOWES VERE (1776-1841). An English admiral; commander of the Shannon in the famous battle with the Chesapeake (June 1, 1813), in which he was permanently disabled.

BROOKE, JOHN RUTTER (1838-). An American soldier; born at Pottsville, Pa.; served in the Union army; commanded the Department of Dakota (1888-1890); to Porto Rico in the Spanish-American War (1898); military governor of Porto Rico same year; military governor of Cuba and commanding general of the Division of Cuba (1899-1900); command of the Department of the East, Governor's Island, N. Y. (1900). Retired 1902.

BROWN, GEORGE (1835-). Rear admiral (retired) United States navy; born at Rushville, Ind.; served during the Civil War; agent of Japanese government in command of Japanese ironclad Stonewall (1867-1869); lighthouse inspector (1876-1878, 1881-1884); commandant navy yard, Portsmouth, Va. (1886-1889, 1893-1897); commander-in-chief of naval forces on Asiatic station (1889-1892); retired (June 19, 1897); rendered special service on western coast during war with Spain.

BROWNSON, WILLARD HERBERT (1845-). Rear admiral (retired) United States navy; born at Lyons, N. Y.; graduated United States Naval Academy (1865); served on the Blake in deep sea investigation (1882-1884); inspector of hydrography (1885-1889); commandant cadets, naval academy (1894); board of inspection and survey (1896-1898); during Spanish War commanded Yankee; superintendent United States Naval Academy (November, 1902-June, 1906); rear admiral (May 6, 1905); commanded 4th division of Atlantic fleet (July 8-August 15, 1906); special service squadron (August 15-October 15, 1906); commander-in-chief of Asiatic fleet (October 15, 1906-April 1, 1907); chief of bureau of navigation since May 20, 1907; retired (July 8, 1907), but by order of president, kept on active duty.

BROWNSTOWN (August 5, 1812). A detachment of 200 men under Van Horne, acting as an advance guard to Captain Brush, who was on his way to relieve

General Hull in Canada, was suddenly surrounded by a band of Indians under Tecumseh, near Brownstown, at the mouth of the Huron River, in Michigan. The Americans immediately retreated, losing 17 men killed and several wounded.

BROWNSVILLE RIOT. On August 13, 1906, members of three colored troops, B, C, and D, of the Twenty-fifth Infantry, stationed at Fort Brown, Texas, shot and killed citizens of the neighboring town of Brownsville. General Garlington, inspector general of the army, investigated, and finding that the perpetrators were by their comrades shielded from all discovery recommended to President Roosevelt that the three troops be discharged *en masse* without honor, a recommendation which the President adopted. By being "discharged without honor" the men were forever disbarred from enlisting in the army or navy and from employment in any civil capacity under the government. Many attributed General Garlington's decision to race prejudice, and much discussion was aroused over the affair. The confession of a negro soldier, later, apparently proved the negro regiments had been at fault, and that the action of the President had been correct. Further investigation followed and on April 6, 1910, the military court of inquiry rendered a verdict holding the negro soldiers of the 25th Infantry guilty.

BRUMMEL, GEORGE BRYAN (1778-1840). The famous "Beau Brummel," an Englishman of wealth and fashion. Becoming an intimate companion of the Prince of Wales (afterwards George IV.) he was for many years regarded by court society as an oracle on all questions of dress and etiquette. Finally losing the royal favor and oppressed by debt, he retired to Calais, and later to Caen, where he became British consul.

BRUNSWICK, HOUSE OF. Founded by Henry the Lion, of the House of Guelph, 1139, whose son Otho was German Emperor as Otho IV., and whose grandson Otho was in 1235 recognized as the first duke of Brunswick. During the next four centuries there occurred a confusing succession of "divisions, reunions, and ramifications." Ernst the Confessor, Duke of Luneburg, may be considered through his grandson Augustus as the progenitor of the modern elder ducal line of Brunswick (Brunswick Wolfenbuttel) which became extinct in 1884, and through his son William as the progenitor of the new younger ducal line of Brunswick-Luneburg (House of Hanover). Ernst the Confessor lived at the time of the Reformation. Ernst Augustus, Duke of Brunswick-Luneburg, was made ninth elector of the empire in 1692. In 1714 his son, George Louis, succeeded to the crown of Great Britain.

BUEHLER, WILLIAM GEORGE (1837-). Rear admiral (retired) United States navy; born at Philadelphia; entered United States navy as 3d assistant engineer (November 21, 1857); attained through successive promotions rank of chief engineer (November 10, 1863); an officer on U. S. frigate Niagara at the laying of first Atlantic telegraph, and received gold medal from New York Chamber of Commerce; served during Civil War; for four years, member of United States naval board of inspection, and twice member of examining board, naval engineers; in charge department of steam engineering, navy yard, Kittery, Me. (1894-1899); retired as rear admiral (1899).

BUELL, DON CARLOS (1818-1898). An American general, born in Ohio; graduated from West Point, 1841; served with distinction in the Mexican War; assistant adjutant general of various departments until the outbreak of the Civil War; appointed brigadier general of volunteers (May, 1861); succeeded Gen. W. T. Sherman in command of the Department of the Ohio (November, 1861); raised to rank of major general of volunteers (March 21, 1862); assumed command of Army of the Ohio (June 12, 1862), and was replaced by General Rosecrans (October 24, 1862). Was United States pension agent at Louisville, Ky. (1885-1889). Died near Rockport, Ky.

BUELOW, FRIEDRICH WILHELM, BARON VON (1755-1816). Prussian general in the War of Liberation, born at Falkenberg. Received from the king, in acknowledgment of his services, an estate worth $150,000 and the title of Count von Dennewitz. Led the column that first came to Wellington's aid at Waterloo. Died in Königsberg.

BUENA VISTA, BATTLE OF (February 22 and 23, 1847). In the Mexican War, 4,700 Americans under General Taylor defeated 17,000 Mexicans under General Santa Anna. This battle practically closed the northern campaign and, by keeping Santa Anna in the north, helped General Scott in the south.

BUFFALO. One of the most important United States ports on the Great Lakes, and the next largest city to New York in the Empire State. La Salle visited the site (1679) and built the first ship navigated on Lake Erie; a small vessel of 60 tons called "The Griffin." A trader named Winney settled (1792); Holland Land Company bought large tract and Joseph Endicott laid it out in townships (1798-1803); at first termed New Amsterdam but soon changed to Buffalo because of the immense bison herds visiting the adjacent salt licks. During the winter of 1813 British troops ravaged the neighborhood and threatened Buffalo; 2,000 disorganized American soldiers were put in command of General Hall, but when the British appeared 800 deserted. Hall held the British at bay until he was so outnumbered that he was obliged to retreat. The British occupied Buffalo, and demolished it. Township including present limits incorporated (1810); became a city with a population of 15,000 (1832); since 1857 noted for its commerce and manufactures. Pan-American exposition, at which President McKinley was assassinated (1901).

BULLER, SIR REDVERS HENRY (1839-1908). An English soldier, famous in the Ashantee, Kaffir, and Zulu wars (in the last he won the Victoria Cross for saving three comrades). In command of the British forces in South Africa and in the Boer War. Failed in his relief of Ladysmith, and was superseded by General Roberts.

BULL RUN. First important battle of the Civil War (July 21, 1861), in northeastern Virginia. Under Beauregard and Johnston the Confederates utterly defeated the Federals under McDowell, causing them to fly in disorder. Known as the Battle of Manassas by Confederates. In a second engagement (Aug. 29-30, 1862) the Confederates, under Lee, forced the Federals, under Pope, to retreat to Centerville.

BUNKER HILL. Battle in War for Independence (1775) at Bunker Hill, in Charlestown, Mass. Repulsing two British charges left the Americans without ammunition and they retreated before the third British charge. A shaft stands on the battle ground; General Lafayette was present at the laying of the foundation stone (1825), Daniel Webster delivering his famous oration, and again the chief speaker at its dedication (1843).

BURGOYNE, JOHN (1722-1792). English general in the War of Independence. Served (1775-1776) in America; returned in 1777; captured Ticonderoga (July 6, 1777); almost annihilated at Bennington by Stark (August 16); defeated by General Gates at Stillwater (September 19); decisively defeated at Saratoga (October 7); surrendered to Gates (October 17).

BURMESE EMPIRE. Settled about 500 B. C. by conquering emigrants from the Indian highlands on the northwest, progressing steadily until Kublai Khan received fatal reverse from Mongols in eleventh century. European traders entered in fifteenth century; Shans ruled Burmans for a time; Pegu dominant from 1580 to 1752, when Alompra of the Ava reorganized the Burmese Empire and founded Rangoon (1755), the commercial center of Burma. English East India Company established factory in Burmese territory; difficulties over trading privileges and frontiers (1824) led to war with England; treaty at Yandabo renounced claim to Assam and ceded Arakan and coast of Tenasserim to England. Treaty declared void by King Tharrawaddy (1837); England declared war, allied with the Peguans (1852) and Pegu, with the control of three principal rivers and the coast of Burma, became part of British Empire. Commercial treaty with England (1867); capital moved to Mandalay (1865). Owing to King Theebaw's tyranny and interference with trade the British invaded Burma, occupying Mandalay (1885), the king and queen being captured and taken to Madras. Burma passed under British control; annexation proclaimed (1886) as province of India under lieutenant governor.

BURNSIDE, AMBROSE EVERETT (1824-1881). American general; born at Liberty, Ind.; invented the Burnside breech-loading rifle (1866); entered the Union army in the Civil War; was at Bull Run, Newbern, N. C., Fort Macon, Antietam, Fredericksburg; served under Grant (1864); resigned (1865). Governor of Rhode Island (1866-1869); United States Senator (1875-1881).

BYZANTIUM. Situated on Thracian Bosporus. Founded by Dorian colonists (*c.* 660 B. C.). Great commercial center. Subjugated by Darius Hystaspis; later by Pausanias the Spartan; later joined Delian League; remaining loyal to Athens to 411 B. C., when

it joined Sparta. Taken by Alcibiades; recaptured by Lysander (405 B. C.); democracy reëstablished (390 B. C.) by Thrasybulus the Athenian; treaty of friendship with Athens (*c.* 378 B. C.); leagued itself with Chios, Rhodes, and Caria in Social War (357 B. C.); again joined Athens when Philip of Macedon advanced against it (341 B. C.); retained independence until Celts imposed heavy tribute (278 B. C.), precipitating war with Rhodes under the burden of duties imposed. Prospered through Roman and Mithridatic wars; city besieged by Septimius Severus for three years; captured and pillaged, the conqueror later rebuilding the city. Made capital of the Roman Empire under name of Constantinople, by Constantine the Great.

CABRERA, RAMON (1810-1877). Leader of the Carlist party, Spain; notoriously cruel. Born at Tortosa, Catalonia. Died in England.

CADE, JACK (? -1450). Leader of an insurrection which began in Kent, England, in June, 1450 (reign of Henry VI.). At Seven Oaks defeated a detachment of the royal army; entered London July 3, the king having retired to Kenilworth. The beheading of Lord Say and plundering of houses aroused the citizens, who defeated Cade and his followers in battle. On July 11 Cade was put to death.

CADILLAC, ANTOINE DE LA MOTHE (about 1660-1720). French military officer and founder of Detroit, Mich. (1701), with fifty settlers and fifty soldiers; governor of Louisiana (1712-1717).

CALAIS. (1) In August, 1346, during the Hundred Years' War, Edward III. of England laid siege to Calais, in northwest France. Six burgesses offered their lives as a ransom for the city, but on its surrender to the English, August 4, 1347, their lives were spared by the queen. (2) The English were finally driven from France in 1558, when the duc de Guise captured Calais for the French.

CALVERT, GEORGE, LORD BALTIMORE (about 1580-1632. British statesman, born at Kipling, Yorkshire. Appointed secretary of state (1619) by James I.; resigned in 1624; raised to the Irish peerage as Baron of Baltimore, 1625. Attempted to establish a settlement in Newfoundland, but difficulties from the hostility of the French and the severity of the climate caused him to apply for another grant, which was finally obtained, in Maryland. He died before the charter for this was issued, the grant devolving upon his son, Cecil.

CAMBRONNE (*kon-bron'*), **PIERRE JACQUES ETIENNE DE** (1770-1842). French general; born at Saint-Sébastien, near Nantes. Fought in the Vendée, 1792, and with distinction at Zurich, 1799; took part in the campaigns of the Empire, 1806-1813; accompanied Napoleon to Elba, 1814; at Waterloo, commanded a division of the Old Guard, on which occasion he is credited with exclaiming, "*La garde meurt, et ne se rend pas*" ("The guard dies, but never surrenders"). Nevertheless he did surrender, and was taken to London, severely wounded; but bravely returning for trial by court-martial, was acquitted and restored to his rank in 1820.

CAMDEN (August 16, 1780). Lord Cornwallis, leading a force of 2,000 British soldiers, defeated 3,000 Americans led by Gates at Camden, S. C. The American loss was about 1,000, including Baron de Kalb, an able leader. Also known as the battle of Saunders Creek.

CAMPUS MARTIUS (Field of Mars) at Rome. Used during the Republic as a military and athletic exercise ground. Public meetings and the constitutional assemblies were held here. Later it became crowded with public buildings and private residences. At present the district is known as "Campo Margo."

CANADA, DOMINION OF. There is no clear trace of when this name was given the important northern division of this continent. From Bjarni Herjuffson (986), Leif Ericson (1000), John Cabot (1497), through many Basque and Breton fishermen, and others up to Jacques Cartier (1534), many visited the east coast. England's claim was based on the Cabot voyage. Cartier discovered the St. Lawrence river and made the first settlements on the sites of Quebec and Montreal, and about that period the Portuguese word Canada, signifying "a narrow strait," began to be used as a name for the new territory.

CANBY, EDWARD RICHARD SPRIGG (1819-1873). American general, born in Kentucky; graduated from West Point, 1839; served with distinction in both the Mexican and the Civil wars. Commanded city and harbor of New York during the draft riots, 1863; major general of volunteers, 1864; commanded military division of Western Mississippi, May, 1864-June, 1865; brigadier general, 1866; commanding Division of the Pacific (1873); was slain by Modoc Indians while conferring with them near the "Lava Beds" in Oregon.

CANNAE. (1) August 2, 216 B.C. During the Second Punic War a severe battle was fought at Cannae, a small village in Italy. The Romans numbered 90,000 men; while the Carthaginians, led by Hannibal, were only 50,000 strong. The Carthaginians, however, displayed better generalship and the Romans were annihilated, losing 80,000 men. (2) In 89 B.C., when the Social War was being waged in Italy, a battle was fought at Cannae between the Romans and their revolting citizens, in which the former were victorious. This was the last important battle of the war.

CANOSSA. A ruined castle in north Italy, twelve miles southwest of Reggio, where, in 1077, after three days' humiliation, Henry IV. obtained absolution from Pope Gregory VII.

CAPITOL. The citadel of ancient Rome and the site of the temple of Jupiter, the national sanctuary, situated on the Mons Capitolinus, the most famous, although the smallest, of the seven hills on which Rome was built. There are two summits, the south being the Capitolium proper, on which was the great temple of Jupiter, while the citadel was on the north; but the whole hill is often called the Capitol. To Tarquinius Priscus is attributed the foundation of the great temple of Jupiter Optimus Maximus, Juno, and Minerva; and to the consul Horatius its dedication, 509 B. C. The building consisted of three simple cells, one for each divinity, and was nearly quadrangular, having three rows of columns in front and one at each side, but none in the rear. The temple was burned during the civil wars under Sulla, was restored, and then destroyed during the Vitellian riots. Vespasian restored it, but it was again destroyed by fire after his death. Domitian restored it, his structure lasting to a late period of the empire, when it was so completely destroyed that little besides the foundation walls remain. State criminals were thrown from that part of the mount called the Tarpeian Rock. Other important structures on the Capitoline Mount were the temple of Jupiter Tonans, built by the emperor Augustus, and the Tabularium, built for the archives by Quintus Catulus 73 B. C., the imposing foundations of which still remain. The temple of Juno Montea was on the north summit, and, near by, the mint. It is now occupied by the Church of Santa Maria in Aracoeli, while on the south are dwellings, including the German embassy. The space between the summits is occupied by the Piazza del Campidoglio, on the site of the Tabularium is the Palazzo del Senatore, and on either side the museums of the Capitol and of the Palazzo dei Conservatori.

CAPRI. A beautiful rocky island at the southern entrance to the Bay of Naples. On ancient Capreae Augustus built palaces and aqueducts which were improved by Tiberius, who also built twelve villas in honor of the twelve gods, the ruins of which still remain. In the largest of these (Villa Jovis), Tiberius passed the last ten years of his life. Tradition says that he hurled his victims into the sea from precipitous rocks, 745 feet high, in the northeast corner of the island. During the Napoleonic wars the English seized Capri (1806) and built fortifications, some of which remain. The French under Lamarque captured it in 1808, but in 1813 it was retaken by the English, who restored the island to King Ferdinand IV. of Sicily.

CAPUA. (1) In 212 B.C., during the Second Punic War, the Romans, under Q. Fulvius and Appius Claudius, laid siege to Capua, near Naples, in Italy. Hannibal did his best to overcome the besiegers without, while the garrison made attacks from within the city, but their efforts were of no avail and Capua was finally obliged to capitulate. (2) July 24, 1501. During the struggle between Spain and France for supremacy in Italy, the French army seized Capua; 7,000 of the male inhabitants were murdered, and the women were insulted or taken away to amuse the court at Rome.

CARDIGAN, JAMES THOMAS BRUDENELL, SEVENTH EARL OF (1797-1868). Leader of the "Light Brigade" at the Battle of Balaklava (October 25, 1854).

CARISBROOKE. An Isle of Wight (England) village noted chiefly for its castle, which the Saxons are supposed to have built. In the eleventh century it was enlarged by the first Lord of Wight, in 1136 was captured by Stephen, and successfully resisted the French in the time of Richard II. It was enlarged and the present works added during the reign of Elizabeth. Charles I. took refuge in this castle in November, 1647, and was there imprisoned for thirteen months. After his execution his two children were confined in

the castle, and nineteen months later Princess Elizabeth died there. Extensive remains of the castle may still be seen. The ruins of a Cistercian priory founded in the twelfth century are near by, and also vestiges of a Roman villa.

CAROLINE. An American vessel seized off Grand Island by a party of Canadians (December 29, 1837), during the rebellion in Canada. War between the two countries was narrowly averted.

CARSON, CHRISTOPHER (1809-1868). Noted American hunter, trapper, and scout, familiarly known as "Kit Carson." Born in Kentucky, but removed to Missouri when only one year old; a guide to Frémont in his Rocky Mountain expeditions (1842-1844), and in his famous conquest of California (1846-1847), to which territory Carson conducted parties overland during the rush to the newly discovered gold fields (1849-1850); settled in New Mexico 1854, serving with ability as United States Indian agent at Taos; for services during the Civil War, was brevetted brigadier general; died at Fort Lynn, Col.

CARSON CITY. Capital of Nevada; near base of the Sierra Nevada. Founded (1858); became capital (1861); chartered as a city (1875). Population 2,100 (1900). Mining, lumbering, and agriculture.

CARTHAGE. (1) In 148 B. C. the Romans laid siege to Carthage, on the north coast of Africa. The Carthaginians bravely defended their city until in 146 B. C., when the Romans forced its surrender and destroyed it. (2) During an invasion of the Vandals, in 533, Carthage was the scene of a battle between the Romans, under Belisarius, and the Vandals, under Gelimer. After a sharply contested fight the Romans gained a complete victory and captured Carthage. (3) Carthage was for a long time besieged by the Arabs, who were conducting a war of conquest in Africa. It was finally taken by storm, 647; many of its inhabitants were slain and the city plundered by the soldiers. When assistance arrived from Constantinople and Sicily, the Arabs withdrew with their spoils, but, being themselves reinforced, they returned and drove the fleet from the harbor, again entered Carthage, and completely destroyed it.

CARTHAGE (July 5, 1861). From Boonville, the Confederates retreated into the southwestern part of Missouri. At Carthage, in Jasper Co., they encountered General Sigel, with a force of 1,500 men, and a battle ensued which resulted in the retreat of Sigel.

CARTIER, JACQUES (1494-1557). French explorer born at St. Malo. Selected by Admiral Chabot to lead expedition to northeastern coast of North America searching for passage to Cathay (1534); sighted Newfoundland; sailed south to Cape Breton; westward to Prince Edward Island, where he named the Bay of Chaleurs; skirted north of Anticosti, returning along Labrador. At Cape Gaspé he erected a cross and claimed possession of the country for France. Discovered St. Lawrence river, founding early settlement on sites of Montreal and Quebec. Approaching winter drove him to his ships. Suffered greatly from illness, cold, and privations, sailing for France in the spring (1536). Was captain general and pilot of fleet bringing Jean François de la Roque, Sieur de Roberval, as viceroy of the New World (1541). Missed Roberval's division and wintered near Cape Rouge, starting for France (1542) with what he supposed was gold ore. Was made seigneur de Limoilou and presented with a manor by the king.

CASEY, SILAS (1841-). Rear admiral (retired) United States navy; born at East Greenwich, R. I.; graduated United States Naval Academy (1860); served during Civil War; lighthouse inspector (1876-1879, 1884-1885, 1887-1889); commandant League Island Navy Yard, Philadelphia (1897-1901); rear admiral (March 3, 1899); commander-in-chief of Pacific fleet (1901-1903); retired (September 11, 1903).

CASTILLON. July 17, 1453. The last battle of the Hundred Years' War was fought at Castillon, in southern France. The English, under Talbot, attempted to relieve Castillon, which was under siege by the French, but were surprised and defeated by a division of the French army, Talbot being slain. The result was the speedy occupation by Charles VII. of all territory held by the English, except Calais.

CATAPULTS. See ARTILLERY.

CATHOLIC LEAGUE (1576). Known as the "Holy League." Was an open and forcible criticism of Henry III., King of France, regarding his policy and actions towards the Catholics and Huguenots. Its avowed policy in the original manifesto was "to uphold the Catholic Church; to suppress heresy; and to maintain the honor, the authority, and prerogatives of the Most Christian King and his successors." In reality, its object was to substitute on the throne of France the family of Lorraine for that of Valois. The attempt failed.

CATULUS, GAIUS LUTATIUS. A Roman admiral who defeated the Carthaginians off Sicily in 241 B. C., during the first Punic War, and thus brought the war to a close.

CAUDINE FORKS. 321 B. C. T. Veturius, with his Roman legions, was entrapped in the Caudine Forks, narrow mountain passes in Samnium, south Italy, by the Samnites, led by Pontius. After a hard fight to escape, the surviving Romans surrendered.

CAWNPUR (Cawnpore, in India). (1) In 1857, during the Indian Mutiny, the residents of Cawnpur were besieged by the rebels. After defending themselves three weeks they were forced to surrender, and, although Nana Sahib promised to give them protection, they were all massacred in cold blood by the rebels. (2) December 6, 1857, 25,000 rebels fought a battle with the British, under Sir Colin Campbell, at Cawnpur, which resulted in the complete overthrow of the former. Nana Sahib vanished forever; successfully eluding even the wide reaching power of Great Britain.

CEDAR CREEK. On October 19, 1864, while Sheridan was in Washington, the Confederates under Early attacked his army at Cedar Creek, near Strasburg, Va., and took 1,500 prisoners. As the Federals retreated toward Winchester they were met by Sheridan, who ordered them to turn back. They found the Confederates in possession of the camp at Cedar Creek, and after a sharp conflict repulsed them. Both armies sustained heavy losses in the two engagements.

CEDAR MOUNTAIN, or **CEDAR RUN** (August 9, 1862). One of the most brilliant achievements of General Jackson was his victory with between eighteen and twenty thousand Confederates, over Pope and his Federal army of about 32,000, at Cedar Mountain, in Virginia. At first the Federalists were successful, but under the able leadership of Jackson, the Confederates rallied and drove the Federalists from the field. Later Sigel came with fresh troops and saved the day. Two days later Jackson retreated.

CERRO GORDO (April 18, 1847). During the war between Mexico and the United States, a battle was fought at Cerro Gordo, a mountain pass between Vera Cruz and the City of Mexico, in Mexico. The Mexican troops led by Santa Anna were defeated by General Scott, who was then able to march toward the City of Mexico.

CERVERA Y TOPETE PASCUAL, CONDE DE JEREZ, MARQUIS DE SANTA ANA (1833-1909). Spanish admiral commanding the squadron defeated at Santiago by Sampson and Schley (July 3, 1898). He was taken prisoner by Lieutenant Wainwright of the Gloucester; sent home to Spain, where he was court-martialed and acquitted (July 7, 1899).

CHADWICK, FRENCH ENSOR (1844-). Rear admiral (retired) United States navy; born at Morgantown, W. Va.; graduated United States Naval Academy (1864); on board Marblehead in pursuit of Confederate steamers Florida and Tallahasse (1864); naval attaché American embassy, London (1882-1889); chief of intelligence office (1892-1893); chief of bureau of equipment (1893-1897); commanded New York and was Admiral Sampson's chief-of-staff during war with Spain; for "eminent and conspicuous conduct in battle" during that war, was advanced five numbers in rank; president naval war college, Newport (1900-1903); rear admiral (October 11, 1903); commander-in-chief South Atlantic squadron (1904); retired (1906).

CHAERONEA. (1) 338 B.C. The Macedonian army of 32,000, under Philip, completely defeated and almost annihilated 30,000 Thebans, Athenians, etc., at Chaeronea, in Boeotia, during the Amphictyonic War. (2) In 86 B.C. Sulla, with an army of 30,000 Romans, gained a decided victory over the troops of Pontus, 90,000 strong, led by Archelaus.

CHAFFEE, ADNA ROMANZA (1842-). American soldier; born at Orwell, Ohio. Served in the Civil War; brevetted captain (1865); lieutenant colonel (1897); at El Caney in the Spanish-American War he distinguished himself (1898); brevetted major general of volunteers; commanded the United States forces in China (1900); played an important part in the advance on Peking; commanded the United States army in the Philippines; major general of the regular army (1901).

CHALONS. Decisive battle of the world, named after the French city near which it was fought (451). Attila, King of the Huns, wished to found an anti-Christian dynasty on the wreck of the Roman power. Given battle by the Romans and Gothic allies under Aëtius the Hun, his army was utterly crushed, tradition giving a loss of 300,000 men; the last great victory of Rome, but it broke the tidal wave of the barbarians, who had conquered westward from China to Italy, and saved civilization from possible extinction.

CHAMPLAIN, SAMUEL DE (1567-1635). Born at Brouage, France; studied navigation and chart making; entered army and served in Brittany as quartermaster of cavalry. Commanded the St. Julien in cruise to West Indies extending over two years, visiting Mexico City, New Granada, and other Spanish settlements. In his report of this voyage he suggests building a Panama canal (1603) "to shorten voyage to South Sea 4,500 miles." Accompanied expedition sent by Amyar de Chastes to choose site for settlement (1603); explored the St. Lawrence to the Lachine Rapids and the Saguenay for 40 miles. Came to Canada with De Monts (1604). Returned to France with discouraged colonists (1607); returning as lieutenant governor (1608) to hold that office until his death. He founded Quebec, and discovered Lake Champlain in 1609.

CHANCELLORSVILLE (May 1-4, 1863). With a Federal army numbering over 100,000, Maj. Gen. Joseph Hooker occupied Chancellorsville, Va., and began to harass the Confederates near Fredericksburg, where Lee was stationed with 90,000 men. On May 1, one of Hooker's divisions encountered the Confederates, and after a brief skirmish was driven back. May 2, an attack was made by the Confederates led by "Stonewall" Jackson, in which Jackson was mortally wounded and his men finally repulsed. On the 3d and 4th the fighting continued, and resulted in the retreat of Hooker with a total loss of 17,199 men. The Confederates lost 13,019 men.

CHANTILLY (September 1, 1862). After the battle of Manassas, Jackson followed Pope toward Centerville, Va., wishing to force his right wing toward Washington. On September 1 Jackson was met and repulsed at Chantilly, north of Centerville, by McDowell, Hooker, and Kearny, and Pope retreated to Washington. During his Virginia campaign Pope had lost 15,000 men, 30 guns, 20,000 arms, and a large quantity of supplies and ammunition. The Confederate loss was about 9,500 men.

CHAPULTEPEC (September 12-13, 1847). During the War between Mexico and the United States, Chapultepec, a small hill near the City of Mexico, was the scene of a conflict in which General Scott defeated the Mexicans, who retreated to the city. This was the last serious battle of the war, as Scott was able to advance on the City of Mexico and capture it.

CHARLESTON. Port of entry; largest city in South Carolina. English colony under Governor William Sayle settled three miles from present city (1670), and founded Charles Town in honor of Charles II. Public offices removed to site of present city (1680); Huguenot refugees arrived (1685-1686); 1,200 Acadian refugees (1725); 500 French refugees from Santo Domingo (1755). Was a chief city and third important seaport of United States (1775); first southern city to join Revolutionary movement. South Carolina Convention adopted first independent state constitution (1776); garrison on Sullivan Island repulsed attack by British fleet. City successfully defended against General Prevost (1779); its garrison of 7,000 after six weeks' fighting surrendering to General Lincoln with 16,000 men (1780); one of the greatest disasters of the war. British evacuated city (1782). Incorporated (1783); until 1790 was capital of the state. First bale of cotton shipped to Europe from this port (1784); was center of Nullification movement (1832); Democratic convention (1860), and state convention, passing the first ordinance of secession. Civil War opened by Confederate bombardment and capture of Fort Sumter (1861) in Charleston harbor. Unsuccessfully attacked by Federal fleet under Admiral Dupont (1863); city held by Confederates until their evacuation (1865). Great earthquake (1886), at that time the worst in the history of this country.

CHARTER OAK. The tree in Hartford, Conn., in which was hidden the charter of Connecticut, when Sir Edmund Andros came to Hartford to receive it, in 1687. The charter remained in this hiding place until 1689, when further concealment was made unnecessary by the deposition of Andros. The tree was blown down in August, 1856; then its age was reckoned as nearly 1,000 years.

CHEMULPO (February, 1904). Three days after the recall of the Japanese minister at St. Petersburg, the Russian fleet at Chemulpo, a seaport of Korea, was attacked by the Japanese, and troops were also landed near there. Two of Russia's warships were disabled and sunk.

CHERRY VALLEY (November 11, 1778). After threatening the inhabitants of Cherry Valley, in Otsego Co., N. Y., throughout the summer of 1778, the Indians, led by Joseph Brant, withdrew for the winter. They were met by a force of British, who persuaded them to return to Cherry Valley. On November 11th the inhabitants were completely taken by surprise and many were horribly massacred, while the houses and barns were burned.

CHESAPEAKE, THE. A 38-gun frigate of the American navy. In 1807, under the command of James Barron, she was stopped by the English frigate Leopard of 50 guns and four alleged deserters from the English navy taken from her. This affair caused much excitement in the United States, and is one of the incidents which led to the War of 1812. On June 1, 1813, under the command of Captain Lawrence, of 50 guns, she was taken by the English frigate Shannon of 52 guns under Captain Broke in Massachusetts Bay after a 15-minute engagement in which Lawrence was mortally wounded. The Chesapeake was taken to Halifax, N. S., and used as a British vessel until condemned in 1820.

CHESTER, COLBY MITCHEL (1844-). Rear admiral (retired) United States navy; born at New London, Conn.; graduated United States Naval Academy (1863); served in the Civil War; hydrographic inspector, coast survey (1880-1885); member of commission to select site for navy yard on Pacific coast (1888-1890); commandant cadets, United States Naval Academy (1891-1894); commander-in-chief of South Atlantic squadron (1897-1898); superintendent of naval observatory (1902-1906); commanded special service squadron to witness total eclipse of the sun (1905); retired (February 28, 1906); since 1906, on special duty in bureau of equipment.

CHICAGO. Named from Indian word for the wild onion, which grows abundantly in the neighborhood. Old rendezvous for Indian tribes and white traders. Marquette and Joliet there (1673, 1674, 1675); La Salle, Hennepin, and others came later; on a map published in Quebec (1685) it appears as Fort Chicagou. Jean Baptiste Point de Saible, a refugee from Haiti, regarded as the first settler (1779); selling his cabin to the French fur trader Le Mai, who sold it to John Kinzie (1804), the first white man of American birth to settle there. Government forced Indians to cede six square miles of land and erected Fort Dearborn at mouth of Chicago river (1795). Chicago incorporated as a town (1833) with 550 population and area of 560 acres. Chartered as a city with 4,170 population (1837). Fort abandoned (1837); demolished (1856). The development of Chicago, its great fire (1871), and subsequent meteoric career are chapters in a great national romance. With only 4,470 population in 1840 it ranked fifth in American cities in 1870 and was second in 1900.

CHICKAHOMINY. See GAINES'S MILL.

CHICKAMAUGA, BATTLE OF. "The great battle of the West" (September 19-20, 1863), near Chattanooga, Tenn., between a Federal army of 55,000 under General Rosecrans and 70,000 Confederate soldiers under General Bragg. General Thomas, in command of the Federal left, alone saved the Federal troops from an overwhelming defeat, and by his resistance gained the name of "The Rock of Chickamauga." The battle was won by Bragg, but the Federals held Chattanooga.

CHICKASAW BAYOU (December 27-29, 1862). In December, 1862, the Federals led by Sherman attacked the Confederates at Chickasaw Bayou, just above Vicksburg, Miss. The place was strongly defended by abattis and line after line of rifle pits. For three days the Federals struggled desperately and at times seemed almost successful, but were finally obliged to give up the attempt.

CHIOS (now Scio). (1) In 357 B.C. the Athenians sent a fleet of 60 ships to suppress an uprising in Chios, an island in the Greek archipelago At the beginning of the attack, the leading Athenian galley was overpowered and Chabrias killed. This so discouraged the invaders that they abandoned the attack. (2) 201 B.C. The combined fleets of Rhodes and Pergamus defeated the Macedonian fleet commanded by Philip.

CHIPPEWA (July 5, 1814). Chippewa, a short distance above Niagara Falls, was the scene of a battle between the British commanded by Riall, and the Americans led by Brown, in which the latter were victorious.

CHOLERA (Asiatic Cholera). Originated in India, where it is endemic, its permanent home being in Calcutta and the southern part of Bengal. Epidemics of cholera occurred before the Christian era, but it has been endemic since 1817. In 1820 cholera first appeared in China; the next year in Arabia, Persia, and Mesopotamia, and in 1823, in Syria, Palestine, and on the shores of the Caspian. In 1826 the second epidemic started from the Ganges, passed through Persia and Astrakhan to Russia in 1830, and the following year to Poland, meantime extending through Mesopotamia, Arabia, Palestine, Egypt. From Russia it passed into Germany. Austria, Hungary, Wallachia, and Turkey were invaded, the epidemic reaching England in 1831. The next year brought by Irish emigrants to Quebec, it entered the United States by way of Detroit, Mich., and spread westward to the Pacific coast, and southward to New Orleans. Later epidemics occurred in 1841, 1863, 1871, 1883, 1891, and 1893. In 1848 and 1852 and from 1865 to 1868 the disease prevailed in America. In 1873 it appeared in New Orleans and the valley of the Mississippi river, and from Hamburg, Germany, a few cases were brought to the port of New York, in 1892. United States troops in 1899 found it in the Philippine Islands, where it has probably been often prevalent.

CHOTUSITZ (May 17, 1742). In a battle at Chotusitz, a small town in Bohemia, during the War of the Austrian Succession, the Austrians, led by Prince-Charles of Lorraine, were defeated by the Prussians, under Frederick the Great, and retreated with a loss of about 7,000 killed and 12,000 taken prisoners.

CHOUTEAU (*shoo-to'*), **AUGUSTE** (1739-1829). American pioneer who made the first settlement on the site of St. Louis, under the direction of Pierre Laclède. Born in New Orleans, La. With his brother, Pierre, became a well-known fur trader in the West.

CHRYSLER'S FIELD (November 11, 1813). In the summer of 1813 it was resolved to send another expedition into Canada against Montreal. The American army was led by General Boyd, and as they proceeded they were constantly harassed by the British. At Chrysler's Field, near the St. Lawrence river, the two armies met in open combat, but owing to the fact that the American ammunition had given out they were obliged to retreat to their boats and leave the British in possession of the field.

CHURUBUSCO (August 20, 1847). During the war between Mexico and the United States, Santa Anna and his Mexican troops occupied Contreras. The Americans under General Pillow attacked them there and drove them into Churubusco, a village near the City of Mexico. A sharp battle was fought at Churubusco, in which the Mexicans were totally defeated.

CID, RUY DIAZ DE BIVAR. A descendant of one of the proudest families of Castile. A commander of royal troops under Sancho II. In the war between Sancho and his brother, Alfonso VI. of Leon, the Cid, by a wily stratagem, gained the victory for Sancho. When Sancho was assassinated, the Cid required his heir to clear himself of all suspicion of guilt in Sancho's death before homage could be rendered to him. This caused the king, Alfonso, to banish the Cid in 1081. He joined the Moors at Saragossa and fought against Christians and Moslems. He was reconciled with the king, Alfonso, for a short time, when he was again exiled. He now fought against the Moors and made himself lord of Valencia for five years. He died of grief over the defeat of a friend in arms in 1099. Many romances were woven around his name, and he is still one of the popular heroes of Spain.

CIRCASSIA. A region of the northwestern Caucasus. Since 1829 it has been nominally a part of Russia, whose sway was established (1864) only after a struggle of thirty-five years.

CIRRHA (590 B. C.) During the First Sacred War, the Athenians captured Cirrha, a town in northern Greece, and, as advised by the oracle, the newly acquired land was dedicated to the service of God.

CIRTA (the ancient name of Constantine). In 1836, Cirta, a fortified city of eastern Algeria, in Africa, was besieged by the French under Marshal Clausel. After an unsuccessful assault, in which many were killed, the siege was raised. The following year another attempt to capture Cirta was made by Danremont. He, however, was slain in an assault, but his successor succeeded in capturing the town by storm.

CISALPINE REPUBLIC. Name given to the state constituted in 1797 by the union of the Cispadane and Transpadane republics which Bonaparte had established in May, 1796, after the battle of Lodi. Bergamo, Brescia, Cremona, Lombardy, Mantua, Rovigo, Verona, the duchy of Modena, the principality of Massa and Carrara, and the three legations of Bologna, Ferrara, and Romagna were included in the Cisalpine Republic. By the victories of the Russians and Austrians the Republic was dissolved for a time in 1799, but after the victory of Marengo (1800) it was restored by Bonaparte with some constitutional changes and an increase of territory. It took the name of "Italian Republic" in 1802, and chose Bonaparte for its president, a deputation from the Republic conferring on him in 1805 the title of King of Italy. From then until 1814 it formed the Kingdom of Italy.

CISPADANE REPUBLIC. Established by Napoleon I. after the battle of Lodi (1796), and merged in the Cisalpine Republic the following year. Bologna, Ferrara, Modena, and Reggio comprised the Cispadane Republic.

CLARK, CHARLES EDGAR (1843-). Rear admiral (retired) United States navy; born at Bradford, Vt.; graduated United States Naval Academy (1863); (LL.D., University of Pennsylvania, 1905); served in Civil War; lighthouse inspector, 9th district (1887-1891); commanded battleship Oregon during cruise from San Francisco to Key West and in the battle of Santiago (July 3, 1898); for "eminent and conspicuous conduct" in this battle was advanced 6 numbers in rank; advanced 7 additional numbers and promoted rear admiral (June 16, 1902); governor of Naval Home, Philadelphia (1901-1904); president of naval examining and retiring board (1904-1905); retired (August 10, 1905)

CLAYTON-BULWER TREATY. Between the United States and England (April 19, 1850), negotiated by secretary of state John M. Clayton and Sir Henry Bulwer; ratified (July 4, 1850). To facilitate building an interoceanic canal across the Isthmus of Panama and to prevent encroachment by either power upon Central American territory; the neutrality of the canal assured by both powers. The treaty was formally annulled by the Hay-Pauncefote Treaty (ratified December, 1901).

CLEBURNE, PATRICK RONAYNE (1828-1864). A prominent Confederate officer in the Civil War; born in Ireland, emigrated to America (1849), settled in Helena, Ark. Commanded a brigade at Shiloh; wounded at Perryville; led a charge at Chickamauga; was at Missionary Ridge; killed at the battle of Franklin.

CLINTON, SIR HENRY (1738?-1795). British general in American Revolution. Born in Newfoundland. Member of Parliament (1772-1784), at the same time serving in the army in America. At the battle of Bunker Hill acted as major general, and upon the defeat of Washington's forces in the battle of Long Island took possession of the city of New York. Was leader of an expedition, December, 1779, to South Carolina; captured General Lincoln's army of 3,700 men at Charleston, May 12, 1780. Returned to England (1782); served again in Parliament (1790); was governor of Gibraltar from 1793 until his death (1795).

CLOOTZ, JEAN BAPTISTE, BARON (1755-1794), better known as "Anacharsis" Clootz. A Prussian enthusiast. Born June 24, 1755, at Gnadenthal, near Cleves. Educated in Paris, where he became imbued with extremely rationalistic ideas on politics and religion. Assumed the name and title, "Anacharsis Clootz, the Orator of the Human Race." He became a French citizen and in 1792 was elected to the National Convention. Guillotined (March 24, 1794).

CLOVER, RICHARDSON (1846-). Rear admiral (retired) United States navy; born at St. James College, Hagerstown, Md.; graduated United States Naval Academy (1867); in charge of survey of S. E. Alaska (1885-1886); hydrographer, bureau of navigation (1889-1893); chief of office of naval intelligence (1897-1898); naval attaché, London (1900-1903); president board of inspection and survey; member of national geographic society.

CNIDUS, BATTLE OF. Cnidus was a city in Caria in Asia Minor and one of the six cities of the Dorian League. In 394 B. C. the Athenians, under Conon,

with the assistance of the Persians, defeated the Spartans in a sea battle off Cnidus. This broke the power of Sparta in Asia Minor.

CODY, WILLIAM FREDERICK (BUFFALO BILL) (1846-). American scout during the Civil War. In 1865 contracted to supply buffalo meat to the men building the Kansas Pacific railroad, whence his name. A government scout again (1868-1872); elected to the Nebraska legislature; served in the Sioux War (1867); killed Chief Yellow Hand at Indian Creek; organized his "Wild West Show" (1883); took it to Europe (1887).

COLD HARBOR. (1) See Gaines's Mill. (2) June 1-3, 1864. Grant, in his campaign before Richmond, Va., crossed the Pamunkey river and fought his way to Cold Harbor, a short distance northeast of Richmond. On June 1 he made an attack upon the Confederates under Lee, but was repulsed with heavy losses. Skirmishing continued until the 3d, when in a general assault Grant was overwhelmingly defeated with a loss of 9,948 men. After lingering in the vicinity for over a week Grant withdrew, intending to approach Richmond from the south.

COLENSO (December 15, 1899). During the South African War, Buller attacked the Boers at Colenso, on the Tugela River in South Africa, and was defeated with heavy loss.

COLUMBUS, CHRISTOPHER (1446-1506). Born near Genoa; went to sea; conceived idea of westward passage to Asia but could get no backing. Finally Queen Isabella of Spain financed the Santa Maria and two other small vessels (1492), in which he reached the Bahamas, Cuba, and Haiti, after storm, mutiny, and hardship. Was greeted as a king on return to Spain; sailed thrice later; reached the mainland on third voyage, although preceded in this by the Cabots and, possibly, by Vespucci; unjustly accused and sent home in chains, but released on arrival in Spain. After fourth voyage lived in poverty and neglect; died of broken heart.

COMMITTEE OF PUBLIC SAFETY (France). Appointed April 6, 1793. At first consisted of nine deputies who were to confer in secret, have supreme executive power, with authority to spend certain sums of money without accounting for them, and to report weekly to the Convention. Three more members were added in June, Robespierre and Carnot joining after the fall of the Girondists. The Reign of Terror was inaugurated by this committee. July 27, 1794, it disbanded.

CONCORD (April 19, 1775). At the outbreak of the American Revolution a skirmish occurred at Concord, Mass., when an army of Englishmen entered the town and began to destroy the supplies which had not been carried to safety by the inhabitants. A small detachment which had been left to guard the bridge, was attacked by double their number of Americans, and, before they were ordered to retreat toward Lexington, several lives had been lost on both sides.

CONDE (*kon-day'*). One of the prominent families of France, a branch of the House of Bourbon. One of the greatest, Louis II. (1621-1686), known in history as "the Great Condé," fought a drawn battle at Seneffe with William of Orange. Succeeded Turenne as commander-in-chief of the army of the Rhine (1675).

CONFEDERATION OF THE RHINE, THE. An alliance of German princes formed July 12, 1806, under the protection of Napoleon; but dissolved (1813) as a result of his disastrous Russian campaign.

CONNAUGHT, ARTHUR WILLIAM PATRICK ALBERT, DUKE OF. Prince of the United Kingdom (1850-). Third son of Queen Victoria; created Duke of Connaught and Strathearn, and Earl of Sussex (1874), taking seat in House of Lords. Served in Egypt (1882); general (1893); commander in chief of forces in Ireland (1900); commander of Third Army Corps (1901). Is a member of the Six Nations Indians of Canada, being the only white man to receive such mark of affection; his Indian name is "Cousin Arthur."

CONSTANTINOPLE. The importance of Constantinople, on the Bosporus, in Turkey, has been appreciated by many countries which have attempted to gain possession of the city. (1) From 668-675, and from 717-718, it was besieged by the Saracens, but, with its splendid equipment and plentiful supply of provisions, it was able to withstand both sieges with ease. (2) In the ninth to the eleventh century, the Russians made repeated attacks on Constantinople, but were unable to capture the city and lost thousands of troops and ships in their attempts. (3) The decline of Constantinople dates from 1081, when Alexius Comnenus gained the city through treachery and took the throne. The city was plundered by his followers and the inhabitants insulted without discrimination. (4) In 1204, during the Crusades, a large expedition of crusading filibusters attacked Constantinople by land and sea and finally entered the city. Their work of plundering knew no bounds; a large part of the city was burned; those who resisted were killed without mercy; and an immense booty divided among the invaders. (5) In 1453 a large army of Turks, accompanied by their fleet, appeared before Constantinople. On May 29 the guards at the gates were overpowered and the city entered. For three days the soldiers pillaged and murdered in every quarter; 40,000 are said to have been killed and 50,000 reduced to slavery.

CONSTELLATION—INSURGENTE (February 9, 1799). Capt. Thomas Truxtun was put in command of the new West Indian squadron, with the frigate Constitution as a flagship. Near the island Nevis, of the Leeward group, the French frigate Insurgente offered battle, and after a struggle which continued for an hour and a quarter, the French boat surrendered with 160 prisoners.

CONSTELLATION—VENGEANCE. On February 2, 1800, the United States frigate Constellation, commanded by Thomas Truxton, encountered the French Vengeance off Guadaloupe Island, in the West Indies. For several hours the vessels fought at close range, when finally the Vengeance withdrew.

CONSTITUTION — CYANE — LEVANT (February 20, 1815). The British frigate Cyane, and brig Levant, surrendered to the United States Constitution, commanded by Capt. Charles Stewart. The loss to the British was 77 men; to the Americans, 15 men.

CONSTITUTION—GUERRIERE. On August 19, 1812, a naval battle was fought off the coast of Massachusetts between the United States Constitution and the British Guerriere. The latter was completely wrecked and on the next day was set afire and blown up.

CONSTITUTION—JAVA (December 29, 1812). The American frigate Constitution, commanded by Bainbridge, encountered the Java off the coast of Brazil. After a battle of about one hour, the Java was totally defeated and forced to surrender.

CONTRERAS (August 20, 1847). When the Americans had captured many strongholds in Mexico, they put every effort toward the attack upon the City of Mexico. The Americans, 4,000 strong, led by General Twiggs, made their way toward the goal, and on August 19th assaulted Contreras. The next morning three battles were fought, at Contreras, Churubusco, and San Antonio, in which the Mexicans were completely routed and driven almost to the gates of the capital. The Americans lost in all 60 men, while the Mexicans lost 2,900 killed, wounded, and prisoners, besides a large amount of arms and ammunition.

COOK, FRANCIS AUGUSTUS (1843-). Rear admiral (retired) United States navy; born at Northampton, Mass.; graduated United States Naval Academy (1863); served in Civil War; lighthouse inspector, 11th district (1883-1886); inspector of ordnance, Boston (1890-1892); equipment officer, Boston Navy Yard (1892-1893); for "eminent and conspicuous conduct" while in command of the Brooklyn in battle of Santiago (July 3, 1898) was advanced 5 numbers in rank; member of naval examining and retiring board (1899-1903); rear admiral (March 21, 1903); retired (September 5, 1903).

COOPER, PHILIP HENRY (1844-). Rear admiral (retired) United States navy; born at Camden, N. J.; attended naval academy (1860-1863); served in Civil War; superintendent of naval academy (1894-1898); rear admiral (February 9, 1902); superintendent of 2d naval district (July, 1902-January, 1903); senior squadron commander Asiatic station (March, 1903); commander-in-chief Asiatic fleet (1904); retired (August 5, 1904).

CORBIN, HENRY CLARK (1842-1909). American soldier; colonel in Civil War (1865); brevetted brigadier general of volunteers (1866); honorably mustered out. Returned to regular army as second lieutenant (1866); appointed colonel (1890); lieutenant general U. S. A. and retired (1906). Filled many posts; was with President Garfield when he was shot; conducted army maneuvers at Manassas (1904); commander of Philippine Division (1904); Northern Division (1906).

CORDAY (*kor-day'*), **D'ARMONT, CHARLOTTE** (1768-1793). Born at Saint Saturnin in Normandy. Infuriated at the outrages suffered by her countrymen at the hands of Marat, she gained access to his house in Paris (July 13, 1793), and under pretext of denouncing some fugitive Girondists at Caen, stabbed him in the heart, after giving the information. She was immediately arrested, brought to trial, and guillotined.

CORINTH. (1) May 29, 1862. After the battles of Pittsburg Landing and the capture of Island No. 10, the Federal forces united and moved toward Corinth, Miss. At their approach the Confederates abandoned Corinth and fled with their stores and ammunition. (2) October 3-5, 1862. The desire of the Confederates was to capture the Federal headquarters at Corinth, and on October 2 a large force appeared and on the following day began fighting. The place was in command of Grant, and Rosecrans was placed in charge of the armies. For two days the fighting was kept up, and finally on the 5th the Confederates fled. The loss to the Federals during the battle was 2,359 men; the Confederates' loss was double that number. Detachments pursued the Confederates and at the Hatchie river a battery and several hundred men were captured, and the remainder scattered or drowned.

CORINTH. Ancient Grecian city, at the south end of the isthmus which connects the northern division of Greece with the Peloponnesus. Said to have been called "Ephyra" in early times. Its citadel, the Acro-Corinthus, an isolated hill 1,886 feet high, with precipitous sides, commands one of the finest views in Greece. At the northern foot of this hill, on a broad terrace nearly two hundred feet above the level of the isthmus, lay the city of Corinth. The growth of the city apparently occurred after the Dorian conquest of the Peloponnesus, and by the end of the eighth century B. C. Corinth was the chief trading city of Greece. The government was a strict oligarchy, under the leadership of the family of the Bacchiadae. But early in the seventh century a revolution occurred, and Cypselus became tyrant (*c.* 657 B. C.). The prosperity of the city increased under his rule and that of his son, Periander. Corcyra and Epidaurus were reduced, and Potidaea was established. The tyrants were overthrown about 582 B. C., and a moderate oligarchy established, which, although interrupted by democratic revolutions, apparently remained the usual form of government. Corinth became a member of the Lacedaemonian League, playing her part in the Persian Wars. Its commercial interests were seriously affected by the development of Athenian power, causing the city to be active in promoting the Peloponnesian War. Becoming jealous of Spartan rule, Corinth, after the fall of Athens, formed an alliance with that city and Thebes which resulted in the Corinthian War, 395 B. C. Afterwards Corinth returned to the Spartan alliance, supporting the city in the war with the Thebans under Epaminondas. In 335 B. C. Corinth was garrisoned by the Macedonians, who, with the exception of 242 to 223 B. C., when it was occupied by Aratus for the Achaean League, held the city until 196 B. C. Corinth was restored to the Achaean League when the freedom of Greece was proclaimed by the Romans, but having become the center of the last uprising of Greece against the Roman power, the Roman general, L. Mummius, utterly destroyed it (146 B. C.), and it continued in ruins until rebuilt by Julius Caesar a century later (46 B. C.). Afterwards it became the capital of the Roman province of Achaia, growing both prosperous and powerful, though never fully regaining its early importance. St. Paul planted a church here, to which he addressed two epistles. The city in 1458 was conquered by the Turks under Mohammed II.; captured in 1687 by the Venetians, and retaken in 1715 by the Turks, who held it until 1823. Corinth, reduced to ashes in the Revolutionary War and in 1858 utterly destroyed by an earthquake, is now rebuilt in a more convenient situation on the shore of the Gulf of Corinth.

CORNWALLIS, CHARLES LORD (1738-1805). English general and statesman; served in the Seven Years' War and the American Revolution; was compelled to surrender at Yorktown, October 19, 1781. Becoming governor general of India, he finally crushed Tippu Sahib and dictated the treaty of Seringapatam. Appointed viceroy of Ireland, he quelled the rising of 1798. He returned to India as viceroy (1805) and died there.

CORUNNA (La Coruña), January 16, 1809. The English forces, led by Sir John Moore, directed their course toward Corunna, a seaport on the northwest coast of Spain, where they were intending to embark. The attempt of the French army, under Soult, to prevent their embarkation resulted in a hard fight. The British succeeded in withstanding the French, although Moore was fatally wounded.

COSSACKS. A military division of the people of Russia, whose homes principally are in the southern part of that country. They are organized in eleven voiskos, or corps, the chief of which, the Don, became powerful about the close of the sixteenth century. Military training begins in boyhood; compulsory service in the stanista, or Cossack post, begins at seventeen; field service at twenty; continuing from twenty to twenty-five years. This service is divided into three classes,—active; on furlough with arms and horses; and on furlough without horses, but with arms. Each voisko receives an allowance of land from the crown, and equips and clothes its soldiers. A distinctive uniform of dark green is worn by the Cossack, who now number between 1,500,000 and 2,000,000. The Cossacks were instrumental in exploring and subduing Siberia.

COTTON, CHARLES STANHOPE (1843-1909). Rear admiral (retired) United States navy; born at Milwaukee; appointed to United States Naval Academy (1858); ordered into active service (May, 1861), and served throughout the Civil War; lighthouse inspector, 15th district (1887-1890); member of naval retiring board (1900); commandant navy yard, Norfolk (1900-1903); rear admiral (February 27, 1900); commander-in-chief of European squadron (1903-1904); retired (February 16, 1904).

COVENTRY (Warwickshire, England). Noted for the religious mysteries or plays acted here in the fifteenth century. A magnificent Benedictine monastery was founded at Coventry in 1044 by Earl Leofric and his wife, Lady Godiva. The latter is said to have ridden naked through the town, in fulfillment of a condition laid down by her husband, who had promised certain reforms, if his wife would perform such an act, supposing of course, that she would not do so. This ride of Lady Godiva was for many years celebrated by a procession. The town was incorporated in 1344. The beautiful cathedral of Coventry, with the ancient walls surrounding it, was demolished by Henry VIII. The famous meeting for the intended trial by battle between the dukes of Norfolk and Hereford, immortalized in Shakespeare's "Richard II.," took place here. In the fifteenth century, two memorable parliaments were held in the monastery; the one contained no lawyers, the other passed many attainders against the duke of York, etc. Coventry was famous in the fifteenth, sixteenth, and seventeenth centuries for woolens, broadcloths, caps, and blue thread bonnets.

COWPENS (January 17, 1781). The Americans led by Daniel Morgan defeated the British under Tarleton at Cowpens, in South Carolina. The British lost 320 men killed and wounded, and 600 prisoners; while the American loss was 70 men, only 12 killed.

CRAIG, JOSEPH EDGAR (? -). Rear admiral (retired) United States navy; born in New York; graduated United States Naval Academy (1865); astronomer North Pacific Survey (1874-1875); chief of hydrographic office (April, 1897-January, 1900); accepted for the United States (1900) the Albany, built and armed in England; commander in chief of European squadron (February 10-May 18, 1902); captain of yard, navy yard, Norfolk, Va. (February, 1903-December, 1904); rear admiral (December 28, 1904); commandant League Island Navy Yard (March, 1905).

CRECY. Small town in France in department of the Somme, where a brilliant victory was gained (1346) by Edward III. of England with 35,000 soldiers over 75,000 French soldiers under Philip VI. Great numbers of the French nobility were killed. King John, the blind king of Bohemia, was so overcome by the utter rout that he had two knights interlace his bridle with theirs and rode to "strike a blow," being killed, with eleven other princes of Bohemia; in all 30,000 of the French army perished. The Black Prince, so called from the color of his armor, greatly distinguished himself for England, winning his spurs and knighthood; the crest of the slain King of Bohemia, three ostrich feathers with the motto "Ich Dien" (I serve), was adopted in memory of the victory, and has since been the crest of the English Prince of Wales. In this battle it is claimed that gunpowder was first used as the propellant of an offensive missile.

CRICHTON (*kri'ton*), **JAMES** (1560-1585). "The Admirable Crichton." Born at Eliock, Dumfries. An accomplished scholar and expert swordsman. Tradition relates that he was assassinated at Mantua by Vincenzo di Gonzaga, son of the duke of Mantua.

CROMWELL, BARTLETT JEFFERSON (1840-). Rear admiral (retired) United States navy; born near Springplace, Georgia; graduated United States Naval Academy (1861); served during Civil War; inspector of ordnance, navy yard, Philadelphia (1874-1878), navy yard, Portsmouth (1882-1884); commanded naval rendezvous, Philadelphia (1884-1885); captain of navy yard, Norfolk (1891-1894); member of naval examining board (1895-1898); commandant naval station, Havana, Cuba (1899); president of naval retiring board (1899-1900); rear admiral (March 3, 1899); commandant navy yard, Portsmouth (1900-1901); commander-in-chief of South Atlantic squadron (May-July, 1901), of European squadron (1901-1902); retired (February 9, 1902).

CRONJE (*kron'ya*), **PIET A.** (1835-). A Boer military commander of great ability in the war of 1899-1902; was sent as prisoner of war to St. Helena, May, 1900; was a member of the Transvaal executive council.

CROOKED BILLET (May 1, 1778). With only 53 able-bodied men, General Lacey occupied Crooked Billet, Montgomery Co., Pa. On May 1, 1778, he found himself surrounded by a large number of British, and without making a stand the Americans fled, only a few escaping the cruelty of the enemy.

CROSS KEYS (June 8, 1862). As Jackson and his Confederates retreated up the Shenandoah Valley they were followed by divisions of the Federal army under Generals Fremont and Shields. At Cross Keys, near Harrisburg, Va., a portion of Jackson's forces led by Ewell was overtaken. On June 8, 1862, a brief engagement occurred, and during the night the Confederates withdrew.

CROWN POINT (May 12, 1775). After the capture of Fort Ticonderoga, Col. Seth Warner, with a small force of Americans, made an attack on Crown Point, N. Y., on Lake Champlain. As the fort was defended by only 12 men, these were quickly overpowered and the place occupied by the Americans.

CTESIPHON. On the eastern bank of the Tigris. The Parthian kings commonly made this their winter residence, it finally becoming the capital of the Parthian kingdom. In 637 Ctesiphon was conquered by the Arabs, and later abandoned, its ruins furnishing material for the neighboring Bagdad. The ruins of Seleucia are on the opposite bank, and the two cities are together called El-Modein by the Arabs.

CUIRASS. First used of a jerkin, or leather garment for soldiers, so thick and strong that it was pistol proof, and even musket-proof. Later the name was given to a portion of armor made of metal,—a backplate and a breastplate hooked or buckled together, with a piece called culet or garde de reines joined to the back.

CUMBERLAND, WILLIAM AUGUSTUS, DUKE OF (1721-1765). An English commander. Born in London, 1721. Defeated by the French at Fontenoy (1745). Of his many battles, his one victory was that over the Young Pretender at Culloden (1746). Surnamed "The Butcher" for his cruelties.

CUSTER, GEORGE ARMSTRONG (1839-1876). One of the most daring of American soldiers. Born in New Rumley, Ohio. A distinguished character of the Civil War. Gained his first experience as an Indian fighter in Gen. W. S. Hancock's campaign against the Cheyennes (1867-1868). Later attacked a body of 6,000 Sioux with a force of 600 men at the junction of the Big and Little Big Horn; after a desperate struggle he and his companies were annihilated.

CUSTOZZA. (1) July 25, 1848. Radetzky, with an army of Austrians, gained a brilliant victory over the Italians at Custozza, a village near Verona, Italy. (2) On June 24, 1866, the Austrians, led by Archduke Albert, again defeated the Italians in a long and bloody battle at Custozza.

CUZCO. Ancient capital of the Incas of Peru. In 1534 a municipal government was established by Francisco Pizarro. During the siege by the Inca, Manco Capac, 1536, the town was almost destroyed. Almagro was beheaded here in 1538. The present university was founded in 1692.

CYNOSCEPHALAE. (1) 364 B.C. The Thebans, led by Pelopidas, defeated Alexander of Pherae and the Thessalians, in a battle at Cynoscephalae, in Thessaly. (2) In 197 B. C. Philip V. of Macedon was completely defeated by the Roman consul here. As a result of this victory Greece was freed from Macedonian authority.

CYRUS THE YOUNGER (? -401 B. C.). The second son of Darius Nothus. He is the hero of Xenophon's Anabasis. He led a rebellion against his elder brother, Artaxerxes Mnemon, in 404 B. C., and on its failure, though sentenced to death, was pardoned by his mother's intervention, and made a satrap of a province of Asia Minor. He left Sardis in 401 B. C. with a force of 100,000 Asiatics and 18,000 paid Greek soldiers under the pretense of punishing the robbers of Pisidia. Artaxerxes, being told of his brother's treachery, met him in a battle in Cunaxa, about 60 miles from Babylon. Cyrus was defeated and slain, though the Greek soldiers were victorious over those immediately opposed in battle to them. The retreat of the 10,000 Greeks through the highlands of Armenia back to the sea in the depth of winter forms the subject of Xenophon's Anabasis.

CYZICUS. (1) 410 B.C. During the Peloponnesian War, the Athenian fleet, commanded by Alcibiades, surprised Mindarus and the Peloponnesian navy at Cyzicus, in Asia Minor, and after a severe fight defeated them and almost destroyed the fleet. (2) In 74 B. C., during the Third Mithridatic War, the Romans under Lucullus surrounded the army of Mithridates, at Cyzicus, and, although the Roman army was smaller, it ultimately destroyed the forces of Mithridates.

CZECHS. Slavic people in the extreme northwest of Austria-Hungary. Their Carpathian home invaded by Avars, the Czechs entered Bohemia about 570, dispossessing the Marcomanni. They embraced Christianity in the ninth century. The Russian historian Nestor (1056-1116) first used the name Czech. At present the Czechs of Bohemia (Czechy proper), Moravia, and Prussian Silesia, with the Slovaks of north Hungary, number about 8,000,000.

DAHLGREN, JOHN ADOLF (1809-1870). An American naval officer, inventor (in 1850) of the Dahlgren gun; served on the Federal side in the Civil War; took Charleston, S. C.; commanded the South Pacific squadron (1866-1868); commanded the United States Navy Yard at Washington, D. C.

DAMASCUS. Largest city and capital of Syria in Asiatic Turkey. Founding lost in antiquity, but was seat of a kingdom and subjugated by David. Conquered by Assyria in eighth century B. C., and its people carried away and replaced by Assyrian colonists. Conquered by Pompey in 64 B. C., it became a dependency of Rome. At introduction of Christianity it was the seat of a bishopric. Taken by Mohammedans (635); besieged by Crusaders (1148); taken by Nureddin (1154); Saladin ruling and dying there (1193); conquered by Tamerlane and the Mongols (1401), it was burned but rebuilt. Taken by Turks (1516); by Egyptians (1832); restored to Turkey (1841). Christian massacre by Moslems (1860). It contains the "Street that is called 'Straight,'" in which St. Paul is said to have lived.

DAMIETTA. On November 5, 1219, Damietta, an ancient town of Lower Egypt, was captured by the Crusaders. In 1249 it was taken by Louis IX., and the following year given for his ransom as a prisoner.

DANES. First appeared on the eastern and southern coasts of England in 787; in 795 settled several coast towns of Ireland. Repeated invasions of England occurred after 832, their first winter on the island being that of 851; became firmly established there in 866. Partially subjected by Alfred the Great, but retained possession of East Anglia, Essex, Northumbria, and northeastern part of Mercia (878). Renewed invasions began in 991. Tribute money called Danegeld was paid by the Saxon king, Ethelred II., until a massacre of all the Danes in England (November 13, 1002), by order of that monarch. This was avenged by four expeditions of Sweyn, the Danish king, by whom the country was devastated and finally conquered (1013). Sweyn's son, Canute, contended for the supreme power with Ethelred and his successor, Edmund Ironsides, and upon the death of the latter became sole monarch of England (1016), Danish or Norse rulers continuing until 1042. Danish Norsemen also ravaged the western coasts of the mainland and visited destructively Spain, Andalusia, Africa, Balearic Isles, Italy, and Greece.

DANTON (*dahn-ton'*), **GEORGE JACQUES** (1759-1794). Born at Arcis-sur-Aube, October 28, 1759. Prominent leader of the French Revolution during its first years; gained the enmity of Robespierre and his followers, who caused his downfall. As an accomplice in a conspiracy for the restoration of the monarchy, he, with others, was seized and imprisoned, March 30, 1794, and was guillotined.

DARDANELLES. Narrow channel separating southeast Europe from southwest Asia. Crossed by Xerxes

in 490 B. C., to enter Europe; and by Alexander in 334 B. C., to enter Asia. The former crossed from the neighboring town of Abydos, on the Asiatic shore, opposite to Sestos, the strait at this point being 6,500 feet wide. Alexander crossed at nearly the same place, where also, in the ancient legend, Leander swam across each night to visit Hero.

DARE, VIRGINIA (1587-?). The first child born in America of English parents, at Roanoke, N. C., then a part of Virginia; granddaughter of John White, governor of the colony under Sir Walter Raleigh.

DARNLEY, HENRY STUART, LORD (1545-1567). A Scottish noble. Born December 7, 1545, at Temple Newsam, Yorkshire. The second husband of Mary, Queen of Scots. The conspiracy, through which he met his death, was planned by the Earl of Bothwell.

DARTMOOR MASSACRE (April 6, 1815). American prisoners of the War of 1812, confined in Dartmoor (England) Prison, were fired upon by a prison guard during a suspected mutiny or attempt to escape. Seven were killed and sixty wounded. The British government made liberal provision for the families of the killed and for the relief of the wounded.

DAVITT, MICHAEL (1846-1906). Born in Straide, County Mayo, Ireland. Joined the Irish revolutionary movement in 1867, and in 1879 founded the Irish Land League, for which he obtained funds in the United States. Imprisoned at various times, being released on ticket of leave twice. Member of Parliament (1893, 1895-1899).

DAVOUT (*da-vo'*), **LOUIS NICHOLAS** (1770-1823). French marshal; born at Annoux, Burgundy. Served with distinction in the Revolutionary wars and in all of Napoleon's campaigns. Marshal of France, 1804; member of Legion of Honor, 1805; governor of Grand Duchy of Warsaw, after Peace of Tilsit; Duke of Auerstädt, 1808; Prince of Eckmühl, 1809. To him were largely due the victories of Auerstädt, Eckmühl, and Wagram. In 1819 he took a seat in the House of Peers. Died in Paris.

DAYTON, JAMES H. (? -). Rear admiral (retired) United States navy; graduated United States Naval Academy (1866); commandant naval station, San Juan (October 11, 1899); captain of Naval War College (1903); afterwards president of naval board of inspection and survey; commanding Philippine squadron, Asiatic fleet (1906-1907); rear admiral (February 28, 1906).

DEARBORN, HENRY (1751-1829). American soldier; born at North Hampton, N. H. Entered the army as a captain (1775); served through the Revolution; taken prisoner at Quebec; secretary of war under Jefferson (1801-1809); appointed senior officer of the army in the War of 1812; took Toronto (then York) and Fort George; recalled in 1813; minister to Portugal (1822-1824).

DECATUR, STEPHEN (1779-1820). American naval commander, commanded a squadron during the War of 1812; made captain after making his daring dash into the harbor of Tripoli and burning the frigate Philadelphia, which had fallen into the hands of the Tripolitans (1804); defeated the Algerines (1815), putting an end to the enslaving of Americans by Algerian pirates.

DECELEA (413 B.C.). During the lull between the Sicilian War and the next outbreak of the Peloponnesian War, the Peloponnesians invaded Attica and seized a strong position at Decelea, 14 miles north of Athens. From this secure place bands were sent into all parts of the country for plundering. The occupation of Decelea by the Peloponnesians cut off Athens' most important source of supplies; part of Attica was under Peloponnesian control; and communication with Athens was endangered. The effect of this invasion was so important that it has given the name of the Decelean War to the whole last division of the Peloponnesian War.

DE KALB, JOHN, BARON (1721-1780). Officer in the American Revolution, commissioned as major general in September, 1777. Mortally wounded at battle of Camden, August 16, 1780.

DELHI, once a very important city of India, has been the scene of many disturbances. (1) 1297. Kuttugh Khan, in the First Mongol Invasion, met the Mohammedans at Delhi. In the early part of the battle the advantage seemed to be with the Mongols, but, being unable to keep their position, they were obliged to retreat and leave India. (2) In 1398 the Mongols again invaded India, led by Tamerlane. The Mohammedans, commanded by Mahmud Tughlak, attacked the Mongols, but were defeated and compelled to retreat to Delhi. Soon after, Tamerlane forced the city to surrender, plundered it, and made off with the spoils. (3) On September 11, 1803, a battle was fought at Delhi between 4,500 British, led by General Lake, and 19,000 Mahrattas, under Bourguin. After enticing Bourguin from his position, the British turned upon him and gained a decided victory. (4) In 1804 the Mahrattas, under Holkar, again appeared and besieged Delhi, but the British garrison bravely defended the city and finally Holkar was obliged to withdraw. (5) During the Indian Mutiny, the English, led by Sir Harry Barnard, laid siege to Delhi, which had been occupied by the rebels. For over three months the comparatively small British army kept up the siege, with constant fighting at the outposts and frequent assaults, until finally, on September 14, 1857, a brilliant assault was led by Nicholson and the city captured.

DEORHAM (577). The battle of Deorham, near Bath, England, was fought between the Britons and the West Saxons. The defeat of the former gave the Saxons possession of the lower valley of the Severn, and was an important step in their conquest of England.

DESMOULINS (*day-moo-lan'*), **BENOIT CAMILLE** (1760-1794). Born at Guise, Picardy. Journalist and one of the chief actors in the French Revolution. Voted for the death of the king; but became greatly desirous of moderation,—just and legal trials and less severe sentences. Twice defended by Robespierre when accused before the Jacobin Club, he was finally arrested and executed April 5, 1794.

DETROIT. Leading Michigan city. Site visited by Frenchmen (1610); by La Salle (1670); permanent settlement founded by Sieur de la Mothe Cadillac, the first governor of the surrounding French territory, who built Fort Pontchartrain (1701); trading village established. Occupied by English (1760); besieged (1763); Indians driven off and the only frontier post west of Niagara saved by heroic defense of Col. Robert Rogers and his band of "Rogers Rangers." Fort Lernault built (1778) to further protect 300 settlers in log cabins. During the Revolution it was headquarters of northwest British forces sending out Indian expeditions to ravage frontier. English abandoned fort (1796); name changed by Americans to Fort Shelby. Incorporated as a town (1802) by Legislature of the Northwest Territory; almost destroyed by fire (1805), only a warehouse and a bakery escaping. In 1812 an army of 1,330 British and Indians under Colonel Proctor and General Brock laid siege to Detroit, then occupied by 1,000 Americans commanded by General Hull. Without firing a gun, Hull surrendered the fort and all Michigan to the British. He was courtmartialed and condemned to death, but was pardoned by President Harrison. Incorporated as a village (1815); chartered as a city by Legislature of Michigan (1824); capital of Northwest Territory (1805-1837); of state (1837-1847); supplanted as capital by Lansing.

DETTINGEN. (1) June 27, 1743. In a battle at Dettingen, in Bavaria, during the War of the Austrian Succession, the French, under Noailles, were defeated by the English, led by George II. This was the last battle in which an English ruler took personal command of his troops. This victory resulted in the evacuation of Germany by the French. The French lost about 6,000, the English and their allies only about 2,000.

DEUTSCH-BROD (1422). In a decisive engagement at Deutsch-Brod, a town in Bohemia, Ziska, commander of the Taborite division of the Hussites, defeated Sigismund and his German army.

DE WET, CHRISTIAN RUDOLF (1854-). Distinguished Boer commander and influential leader. Noted for gallantry in war between the Transvaal and the British in 1880-1881; in Boer War of 1899-1902, showed great daring and ability. With the other Boer leaders, he submitted to Lord Kitchener; signed the peace terms at Vereeniging (May 31, 1902).

DEWEY, GEORGE (1837-). A famous officer in the American navy; born at Montpelier, Vermont; was graduated from Annapolis Naval Academy in the class of 1858. At the outbreak of the Civil War Dewey was commissioned a lieutenant, serving on the Mississippi. He was present when the West Gulf squadron forced a passage up the Mississippi ahead of Farragut in 1862. He attained the rank of commodore in 1896 at the age of 59. In 1898, when war with Spain broke out, he was placed in command of the Asiatic squadron. He sailed from Mirs Bay, China, April 27, 1898, under orders to capture or destroy the Spanish

fleet. Admiral Montojo's fleet was in Manila Bay. On Saturday night, April 30, Dewey daringly entered the bay; engaging the Spaniards next morning he defeated them, and completely destroyed their fleet, having only nine wounded and not a single death. Manila, the chief Philippine port, was thus placed in his power. Dewey received the thanks of Congress and a handsome sword, with medals for his men. Rear admiral (1898); rank of admiral re-created to confer it upon him (1899); presided over the Schley inquiry (1901); commander in chief of the mobilized naval forces at the naval maneuvers (1902).

DICKINS, FRANCIS WILLIAM (1844-) Rear admiral (retired) United States navy; born at Beekmanville, N. Y.; graduated at United States Naval Academy (1864); served on Nicaragua Interoceanic Canal Surveying Expedition (1872-1873); head of department of yards and docks, navy yard, Washington (1890-1892); member of examining board (1902); commandant navy yard, Pensacola (1903-1904), League Island Navy Yard (Philadelphia) (1904-1905); rear admiral (June 17, 1904); commanded coast squadron, North Atlantic fleet (1905-1906); retired (1906).

DIESKAU, LUDWIG AUGUST, BARON (1701-1767). German officer in French army distinguishing himself in America. Born in Saxony; served in the Netherlands; brigadier general (1748). Sent to America as major general (1755) to command French troops in the French and Indian War. Ambushed near Fort George and defeated 1,000 men sent against him; deserted by many Indians and Canadians was utterly defeated by Sir William Johnson; severely wounded; held prisoner until 1763.

DORIA (*do're-a*), **ANDREA** (1468-1560). Distinguished Genoese admiral. Fought for various Italian princes; made captain-general of the galleys after Genoa was freed from the French (1529), and cleared northern Mediterranean of African pirates. In wars between the emperor and the French, commanded first a French fleet, but later, with his whole force, supported the emperor, thus hastening the deliverance of Italy from French domination. Entered Genoa without resistance, 1528; refused title of sovereign offered by the emperor; instituted new form of government which continued until the end of the Republic. Victorious over the Turks, 1532; at Tunis, 1535; served with distinction in disastrous expedition of Charles V. against Algiers, 1541. Died at Genoa.

DORR'S REBELLION. Thomas Wilson Dorr (1805-1854) of Providence, R. I., was elected governor by the "Suffragists" in 1842, while the "Landholders" elected Samuel W. King to the same position. Both were inaugurated. The Suffragists objected to the suffrage or right to vote being extended only to freeholders of land valued at $134 or bringing in a rental of $7 annually. They also wanted a fairer apportionment of representation than that which existed. Governor King proclaimed martial law. Dorr fled, was captured, convicted of high treason, and sentenced to death, afterwards commuted to life imprisonment, and was finally released in 1847. Part of what Dorr strove for was granted in the constitution which went into effect in May, 1843.

DOUGLAS (dug'las). Scotch family of great prominence. In 1175 and 1213 charters were witnessed by **WILLIAM OF DOUGLAS.** The first of the family to obtain knighthood was **SIR ARCHIBALD OR ERKENBALD OF DOUGLAS,** named in charters between 1190 and 1232. **GOOD SIR JAMES OF DOUGLAS,** Bruce's greatest captain in the War of the Succession, "Black Douglas," the "hero of seventy fights," was slain in Andalusia (1330) en route to the Holy Land with the heart of his royal master. His younger brother, **SIR ARCHIBALD L. DOUGLAS** (1296-1333), was made Regent of Scotland in 1333; invaded England the same year, but was defeated and slain at Halidon. **ARCHIBALD, EARL OF ANGUS,** surnamed Bell-the-Cat, filled some of the highest offices in the state.

DRAFT RIOTS IN NEW YORK (July 13-16, 1863). Caused by the Conscription Act (March 3, 1863) authorizing a draft from all able-bodied male citizens between the ages of twenty and forty-five, providing for exemption by the payment of $300. The mob rebelled, burned the provost marshal's office, sacked and burned the Colored Orphans' Asylum, the Tribune office was barely saved; the militia was called out; and the draft suspended. More than 1,000 were killed in the four days, and $1,500,000 of property destroyed. The draft was resumed on August 19th and peacefully completed.

DRAKE, SIR FRANCIS (1540-1596). An English naval hero; first English circumnavigator of the globe; raided Cadiz (1587); destroyed shipping in the harbor; was vice-admiral, under Lord Howard, against the Spanish Armada (1588); died on an expedition to the West Indies.

DREPANUM (249 B. C.). During the First Punic War the Carthaginians, under Adherbal, completely defeated the Romans, under Claudius, in a naval battle near Drepanum, a seaport town of Sicily.

DRESDEN, BATTLE OF (August 26-27, 1813). Fought near Dresden between 100,000 French under Napoleon and 150,000 allied Austrians, Russians, and Prussians under Prince Schwarzenberg. The allies were defeated and retreated into Bohemia after a loss of 7,000 or 8,000 on each side, the allies losing over 20,000 prisoners.

DREUX (December 19, 1562). The Huguenots, led by the prince de Conde, were defeated by the Catholics, under Montmorency, in a battle at Dreux, a town in the northwestern part of France, during the first civil war in France. The Huguenots were at first successful, but, carrying the pursuit too far, were attacked and overcome by the Catholics.

DREWRY'S BLUFF (May 16, 1864). One of the battles of the Civil War was fought at Drewry's Bluff, in the vicinity of Bermuda Hundred, in Virginia. The Federalists led by General Butler were attacked by the Confederates under General Beauregard at Drewry's Bluff and forced to retreat to Bermuda Hundred, where they were closely confined by the intrenchments of the Confederates.

DREYFUS (*dri'fus*), **ALFRED** (1859-). French artillery officer; born in Alsace. Arrested October 15, 1894, charged with selling military secrets to a foreign power (presumably Germany or Italy); convicted, publicly degraded from his rank, and sentenced to solitary confinement on the Ile du Diable, off the coast of French Guiana, where he was treated with great severity until his return to France (1899) for retrial by court-martial. Again convicted, but pardoned almost immediately by President Loubet. Completely vindicated at a retrial in 1906, he was reinstated in the army with the rank of major, and, on the very spot where he suffered degradation, received the cross of the Legion of Honor.

DRUSUS, NERO CLAUDIUS. Stepson of Emperor Augustus, and brother of Emperor Tiberius (38-9 B. C.). His great work was the subjugation of the Gauls, Germans, and other tribes. His promising career was cut short by his accidental death. He was given the title of Germanicus, which descended to his son.

DU BARRY, MARIE JEANNE BECU, COUNTESS 1743-1793). A beautiful French woman of obscure birth who for five years (1768-1773) ruled the king and the court. She retired from the court on the death of Louis XV. During the Revolution she lived in London. She returned to France and, by order of Robespierre, was guillotined.

DUEL. A single combat, following a challenge, fought with deadly weapons in accordance with the regulations of the code of honor, which are usually enforced by witnesses, called seconds. The practice probably originated in the judicial combats of the northern tribes that overthrew the Roman power, who settled all disputes by an appeal to arms, "invoking the deity to defend the right." The custom of the private duel arose in France early in the fifteenth century, becoming very prevalent during the reign of Francis I. From France the practice was introduced into England in the beginning of the sixteenth century, and spread rapidly, finding special favor in Ireland. The challenged had the choice of weapon, which was usually the rapier or the pistol. Dueling is illegal in the United States, strict legislation in regard thereto having been enacted after the Civil War. The Articles of War and Navy Regulations also forbid it. The practice here began early, the first duel reported taking place in Plymouth, Mass., in 1681. General Washington discouraged the custom. Dueling has always been considered an offense in the eyes of the law, sending a challenge a breach of the peace, while, if the opponent is killed, manslaughter or murder may be charged against both the survivor and the seconds. Dueling still prevails in France, though as a rule the consequences are trivial, owing to the conditions of the combat. In the German army, dueling is still the favorite way of avenging an insult, but among civilians it constitutes an offense. A feature of many German universities is the dueling among the students.

DUELISTS (Notable). Dukes of Norfolk, Richmond, York, Wellington; Lords Castlereagh, Lauderdale, Londonderry, Paget, Shelbourne, Talbot, Townshend; and Canning, Curran, Fox, Grattan, Hastings, O'Connell, Pitt, Sheridan, in Great Britain. In the United States, Charles Lee and John Laurens, Gen. Cadwallader, and Gen. Conway, Gen. McIntosh and Gwinnett,* of the Revolutionary period; also Commodore Decatur* and Capt. Barron, Aaron Burr and Alexander Hamilton,* Andrew Jackson and Charles Dickinson,* Benton and Lucas,* Henry Clay and John Randolph, De Witt Clinton and Swartout, Cilley* and Graves, David S. Terry and U. S. Senator Broderick.* (*Signifies killed or mortally wounded.)

DUGUAY-TROUIN (*du-gay-troo-an'*), **RENE** (1673-1736). Celebrated naval officer and privateer of France, born at St. Malo. Fought successfully against the Dutch and English; destroyed the Brazilian fleet off Lisbon (1709); captured Rio Janeiro (1711), extorting a ransom of $300,000. Knighted by Louis XIV.

DU GUESCLIN (*du-ga-klan'*), **BERTRAND** (1320-1380). A constable of France; the most famous soldier of his time; born near Dinans, Brittany. Captured at the battle of Auray; ransomed; fought in Spain for Henry of Trastamare against Pedro the Cruel; captured by Edward the Black Prince (1367); ransomed; made constable of France (1370); from that time fought successfully against the English in France. Died while besieging the fortress of Châteauneuf-Randon.

DUNOIS (*du'nwah*), **JEAN DE, BASTARD OF ORLEANS** (1403-1468). National hero of France; son of Louis, Duke of Orleans; born in Paris. Made a councilor and grand chamberlain by Charles VII. (1422). Relieved Montargis (besieged by the English, 1427); bravely defended Orleans until aided by Joan of Arc with whom he joined forces, and in an almost unbroken succession of victories, freed France from the English. Made lieutenant general of Normandy (1449); he expelled the English from that province, and, in 1451, from Guienne.

DUPONT, SAMUEL FRANCIS (1803-1865). United States naval officer; born at Bergen Point, N. J. Served in the Mexican War; placed in command of Philadelphia navy yard, 1860; distinguished himself in the Civil War, receiving the thanks of Congress and the rank of rear admiral (July 16, 1862) for establishing fourteen blockading stations along the southern coast; unsuccessfully attacked Charleston, S. C. (April, 1863); relieved by Admiral Dahlgren (July, 1863). Died in Philadelphia.

DUQUESNE (*du-kain'*), **ABRAHAM, MARQUIS** (1610-1688). Noted French admiral; born at Dieppe. Served under Louis XIII. in war against Spain; entered service of Sweden; became vice-admiral (about 1643); victories over united fleets of Denmark and Holland compelled Denmark to make peace; completely defeated united fleets of Spain and Holland commanded by De Ruyter, who was mortally wounded (1676); cleared the Mediterranean of Barbary pirates; bombarded Genoa (1684); made marquis by Louis XIV.

DUTCH SETTLEMENTS. In 1614 Holland took possession of the valley of the Hudson, and named it New Netherlands. Her claim extended north to the 45th parallel, east to Cape Cod, south to South (Delaware) River, no definite western limit being given, but that never extending many miles from the west shore of the Hudson. Practically, the Dutch country lay between the North (Hudson) and South (Delaware) rivers. In 1618 a fort was built at Bergen, N. J. On the site of an old fort just below Albany, the Dutch built Ft. Nassau, which later moved four miles down stream in the "green and silent valley of the Tawasentha." The first permanent colonists arrived at Manhattan in the spring of 1623. Ft. Amsterdam was built at what later became Bowling Green (New York City). Ft. Nassau was moved to the present site of Albany, its name being changed to Ft. Orange, and eighteen families settled in the neighborhood. This was the beginning of Albany. Another Ft. Nassau was built on South River, opposite the present Philadelphia. One party began the building of Ft. Good Hope (completed June, 1633) where Hartford now is, on the "Fresh River of New Netherlands" (the Connecticut); while still another settled "Wallabout," where the Brooklyn navy yard now is. Two shiploads of cattle, horses, swine, and sheep arrived in 1625. In 1626 Manhattan was purchased from the Indians by Gov. Peter Minuit for 60 guilders, equal in purchasing value to about $120.00. To encourage emigration to the New World, Holland granted a charter giving to any member of the Dutch West India Co. who should take or send out fifty settlers within four years the right to a large amount of land on any navigable river or bay in New Netherlands, such a proprietor to receive the honorary title of "Patroon." In 1631 Zwaanendael (Swandale) was settled a few miles above Cape Henlopen, N. J. But all were massacred by the Indians and the houses burned. Later colonists starved, and finally the settlement was given up. Michael Pauw, in 1630, secured for himself Hoboken, Jersey City, and Staten Island, which remained in his possession seven years. Land in what are now Albany and Rensselaer counties was, with the exception of Ft. Orange, secured by Killian Van Rensselaer. Rensellaerwyck was a successful settlement. Van Rensselaer's manor near Ft. Orange became Beverwyck. Yonkers was settled by Adrian van der Donck. Beaver Road Fort was established on the Schuylkill; and in 1641 a settlement was made at Hackensack. By the treaty of Hartford (Sept. 19, 1650), Gov. Stuyvesant practically abandoned all claim to New England territory and the boundary between the Dutch and English on Long Island was fixed from Oyster Bay to the Atlantic Ocean. New Amsterdam was incorporated as a city in 1653. Delaware was captured from the Swedes by Gov. Stuyvesant in 1655, the Dutch having attempted to settle Delaware in 1629. But in 1665 it was seized by the English, to whom the rest of New Netherlands (including New Amsterdam) had surrendered the year before (1664).

DUTLINGEN or **TUTTLINGEN.** November 24, 25, 1643. The Bavarians, led by Mercy, met the French at Dutlingen, on the Upper Rhine, in Germany, and completely defeated them. The German infantry in the French army was routed or captured, and the cavalry made a hasty retreat.

DYER, NEHEMIAH MAYO (1839-1910). An American naval officer; born at Provincetown, Mass. Entered the volunteer navy (1861); acting master and placed in command of the Randolph (1864); lieutenant commander (1868); commander (1883); captain (1897); commanded the protected cruiser Baltimore in the battle of Manila Bay (May 1, 1898); received the rank of rear admiral (1901) and was retired.

EAGAN, CHARLES PATRICK (1841-). An American soldier; born in Ireland. Entered the Federal army as first lieutenant (1862); mustered out (1865); appointed second lieutenant (1866) and by 1898 had risen to the grade of brigadier general and commissary general. During the Spanish-American War he was found to have issued canned meat rations for the forces in Cuba said to be unfit for food. In 1899 was tried by court-martial for using abusive language before the commission regarding General Miles, and sentenced to suspension from duty and honors for six years; later retired at his own request.

EARLY, JUBAL ANDERSON (1816-1894). American soldier; born in Franklin County, Va.; graduated from West Point (1837); served in the Seminole War (1837-1838); resigned from the army to practise law (1838); major of a regiment of Virginia volunteers in Mexican War; distinguished Confederate officer of the Civil War. After numerous successes, was defeated by Sheridan in the Shenandoah Valley (September-October, 1864), and by Custer at Waynesboro (March, 1865); removed from command by Lee, after reaching by successive promotions the rank of lieutenant general.

EASTERN QUESTION. The complications arising out of the relations of Turkey with the other European countries, which have existed from the middle of the eighteenth century. Its modern phase dates from the Crimean War (1853-1856), with the Congress of Paris (1856), the London Protocol (1871). It was complicated by the opening of the Suez Canal, the War with Russia (1877), and the Congress of Berlin (1878). The Bulgarian War (1885), and the later war (1897), with self-government of Crete, also added to its gravity. With Austrian power supreme in Servia; Russian power in Bulgaria; Greece anxious to restore the Byzantine or Greek Empire; Russia chafing over her confinement in the Black Sea and her defeat by Japan; the "Young Turks" in power regenerating Turkey; Austria moving on the Balkans; and Germany's development another bar to Russia spreading westwards, the question is still open.

EASTPORT. On July 11, 1814, a British squadron commanded by Sir Thomas Hardy and Col. Thomas Pilkington sailed into Passamaquoddy Bay, on the coast of Maine, and anchored near Eastport. The garrison at Fort Sullivan being too weak to withstand the enemy, Eastport was surrendered to the British. The inhabitants in the vicinity of Passamaquoddy Bay were forced to acknowledge British authority, and

British officers and soldiers were stationed in Eastport to keep the people in subjection.

ECNOMUS. 256 B.C. During the First Punic War a naval battle was fought near Ecnomus, a hill in Sicily, between the Roman fleet, commanded by M. Atilius Regulus and L. Manlius Vulso, with the Carthaginian fleet. After a hard fight the Carthaginians were defeated, with the loss of 30 ships sunk and 64 captured.

ECONOCHACA or **HOLY GROUND** (December 23, 1813). During the war with the Creeks, an American regiment led by General Claiborne made an attack on the Indians at Econochaca, or Holy Ground, in Alabama. After a feeble resistance the Indians fled with a loss of 30 killed, and Claiborne plundered and burned the town.

EDGEHILL, BATTLE OF (Sunday, October 23, 1642). Between the Royalist forces under Charles I. and the Parliamentary forces under the Earl of Essex. Over 4,000 in all were slain. The battle was indecisive.

EDWARD THE BLACK PRINCE (1330-1376). Eldest son of Edward III. of England. Named from the color of his armor. Distinguished himself at Cressy (1346), Poitiers (1356), where he took the French king, John II., prisoner; captured Limoges (1370) and massacred 3,000 of the inhabitants.

EL CANEY, BATTLE OF (July 1, 1898). In Cuba, four miles from Santiago de Cuba, between 4,500 Americans under General Lawton and 520 Spaniards under General Vara del Rey, strongly entrenched. American loss was 443, and the Spanish, 420 (100 prisoners).

ELGIN AND KINCARDINE, THE RIGHT HON. VICTOR ALEXANDER BRUCE, EARL OF (1849-). Born near Montreal, while his father was governor general of Canada (1847-1854). He has been governor general of India, and has filled many important offices but to use his own words has "never failed to reckon himself a Canadian."

ELIZABETHTOWN (February 7, 1813). With a party of about 200 men, Major Forsyth endeavored to force the British to release some prisoners which they had claimed as deserters and imprisoned at Elizabethtown, the present Brockville, in Canada. They entered the jail, released the prisoners, and captured a number of militiamen, as well as muskets and stores, returning without losing a man.

ELK HORN. See PEA RIDGE.

ELLERY, WILLIAM (1727-1820). A signer of the Declaration of Independence; born in Newport, R. I. Collector of customs of the port of Newport.

ELLIOT, MAJOR HENRY GEORGE (1826-). Born at Perth, Ont., educated in England; entered the army and served through the Crimean War; at bombardment of Odessa; since 1870 prominent in South African affairs.

EL MOLINO DEL REY (September 8, 1847). El Molino del Rey, near the City of Mexico, was one of the strongest fortifications which opposed the Americans' advance upon the Capital. The place was defended by 14,000 Mexicans under Santa Anna, and when the Americans under General Worth appeared on September 8, 1847, they were plunged into a furious struggle which continued for two hours before the Mexicans were forced back. In this battle the Mexicans lost 2,200 killed and wounded, and about 800 prisoners. The American loss was 116 killed, 665 wounded, and 18 missing.

EMANCIPATION PROCLAMATION. Issued by President Lincoln in a preliminary form September 22, 1862, just after the battle of Antietam, and in a permanent form on January 1, 1863. By it all slaves residing in states then in a state of rebellion were declared free.

EMBARGO. A law or order causing the detention of vessels in ports, whether the vessels be foreign or national. The embargoes issued by the United States were: March 26, 1794, in retaliation against the British orders, lasted 60 days; December 22, 1807, during the war between France and England, to prevent American vessels from engaging in foreign commerce, terminated March 4, 1809; December 17, 1813, to prevent English vessels from procuring provisions, terminated April 14, 1814. The laying of an embargo is now regarded as a great political and economic mistake.

EMMET, ROBERT (1778-1803). An Irish patriot and orator, born in Dublin; as a leader of the United Irishmen, he became involved in the murder of Lord Kilwarden, chief justice of Ireland, and the assassination of Colonel Brown of the Fourth Regiment, July 23, 1803. Was foiled in his attempt to escape to the continent; arrested, tried, and hanged.

EMMET, THOMAS ADDIS (1764-1827). Born in Cork. Elder brother of Robert Emmet. An Irish lawyer and politician. As counsel of the United Irishmen, he, with others, was arrested and imprisoned for treason (1798-1802); gained freedom, was exiled from British territory; came to America in 1804, where he achieved distinction; in 1812 was elected attorney general of New York state.

EMORY, WILLIAM HEMSLEY (1846-). Rear admiral United States navy; born at Washington; graduated United States Naval Academy (1866). On the Macedonian, pursued Confederate cruiser Tacony, summer of 1863; served in Asiatic station (1872-1874), European station (1874-1876); naval attaché American embassy, London (1889-1892); member of board of inspection and survey (1897-1898, 1898-1900); during Spanish War commanded Yosemite; commandant naval station, Key West (1900); rear admiral (November 2, 1906); commanding second squadron, Atlantic fleet (1907).

EMUCFAU (January 22, 1814). During the campaigns against the Indians, a body of volunteers led by Jackson and Coffee entered the valley of the Tallapoosa river in Alabama, and encamped at Emucfau. Early on January 22, 1814, the savages pounced upon the camp and a furious struggle ensued in which the Indians were driven off. Several able American leaders, including General Coffee, were wounded or killed.

ENGHIEN (*on-gan'*), **LOUIS DE BOURBON, DUC D'** (1772-1804). Born at Chantilly (August 2, 1772). Member of the Bourbon family; noted in history for his tragic fate. Allied himself with the royalists (1792) in Rhine campaign against the Republicans. Suspicion was aroused against him upon the discovery of a conspiracy to assassinate Napoleon (1804). The neutral territory of Baden was entered, and the duke captured; brought to Vincennes; after an illegal trial, shot, under orders from Napoleon; later direct proof of his innocence was established.

ENOTOCHOPCO CREEK (January 24, 1814). The savages followed the Americans as they retreated from Emucfau, and as they were crossing Enotochopco creek, in Alabama, charged their rear and flanks. The Americans immediately wheeled about and poured such a deadly fire into the Indian forces that they broke and fled.

ENTERPRISE—BOXER (September 5, 1813). During the War of 1812, a naval battle was fought off the coast of Maine between the Enterprise commanded by Lieutenant Burrows and the British Boxer under the command of Captain Blyth. The fight resulted in the defeat and capture of the Boxer, and the death of both commanders.

ENTERPRISE—TRIPOLI (August 1, 1801). During the trouble between the United States and the Barbary States, the Enterprise, commanded by Lieutenant Sterrett, encountered the Tripolitan ship Tripoli. At the end of a three hours' engagement the Tripoli was a total wreck, and her commander, Mahomet Sous, begged for mercy.

ENTWISTLE, JAMES (1837-). Rear admiral (retired) United States navy; born at Paterson, N. J.; entered United States navy in the engineering service (October, 1861), and served during Civil War; engineer of the Olympia (1897), and participated in battle of Manila Bay (May 1, 1898); highly commended by Admiral Dewey, awarded Dewey medal, and recommended by the Secretary of the Navy and board of officers for advancement in numbers; rear admiral and retired (April, 1899).

EPHESUS. Situated in Lydia. One of the twelve Ionic cities of Asia Minor. Its reputed founder was Androcles, son of Codrus, the last king of Athens. From early times it seems to have been a sacred place, from the presence of the great temple of Artemis (Diana), while its commercial prosperity was due largely to its situation at the beginning of one of the great trade routes into the interior of Asia Minor. About 655 B. C. it suffered from the Cimmerian invasion, and early submitted to the Lydian kings. The city played no prominent part in the Graeco-Persian, Peloponnesian, or later wars. Its prosperity seems to have greatly increased after the time of Alexander the Great. Lysimachus and the kings of Pergamum strengthened and improved the city, and the Romans made it the capital of the province of Asia. St. Paul labored for nearly three years in Ephesus, and a

vigorous Christian church was established. Here the Apostle John and other prominent men of the Apostolic age made their headquarters. In 263 the Goths destroyed its great temple, a blow from which Ephesus never recovered. The third general council of the Christian Church met here in 431.

ERA OF GOOD FEELING. From 1817 to 1824, when there was virtually only one political party in the United States—the Democratic-Republican. After the War of 1812, the Federalist Party passed away, and in 1821 President Monroe was elected by 231 out of 232 electoral votes. By some writers it is confined to Monroe's second administration.

ERFURT. An important fortress in Saxony until 1873; belonged to Prussia (1803-1806), passing then to France. Here, in 1808, Napoleon played conqueror with Alexander of Russia and a host of German princes present. In 1814 Prussia recovered it and in 1850 the Union Parliament of North Germany convened here.

ERICSSON, JOHN (1803-1889). Born in Sweden; engineer in army; went to England (1826) and worked on steam machinery, introducing new screw propeller. Came to New York (1839); identified with many innovations, mainly for the building of monitors in the Civil War. His first one was built in less than four months and defeated the Confederate Merrimac in Hampton Roads (1862).

ERIKSON, LEIF. A Norseman, son of Erik, the Red, who was exiled to Greenland and later founded colonies there. According to three accounts in the Icelandic sagas, Leif came to America about 1000 A.D., discovered and explored the new land where he spent the winter. Returning in the spring to Greenland, he named the three regions visited, Helluland, Markland, and Vinland, the last denoting the grapes found. These places are variously identified by some who accept the claims as respectively Newfoundland, Nova Scotia, and parts of New England; while others find Helluland in Labrador, Markland in Newfoundland, and Vinland in Nova Scotia and Cape Breton Island.

ESSEX. For some time during 1814, the American frigate Essex was confined in the harbor at Valparaiso, by the British boats Phœbe and Cherub. When he attempted to escape, with his consort, the Essex Junior, the British attacked, and in a short time Captain Porter was obliged to surrender, the Essex being almost totally destroyed.

ESSEX—ALERT (August 13, 1812). While the British sloop Alert, commanded by Langharne, was cruising about in search of the American Hornet, she encountered the Essex and opened fire. The conflict was short and resulted in the surrender of the Alert.

ESSEX, ROBERT DEVEREUX, EARL OF (1567-1601). A favorite of Queen Elizabeth; born at Netherwood, Herefordshire. Distinguished himself at battle of Zutphen, Holland; assisted Henry IV. of France against the Spaniards (1591); joint commander with Lord Howard in expedition against Spain (1596); earl marshal of England (1597); succeeded Lord Burghley as chancellor of Cambridge; lord lieutenant of Ireland (1599), concluding there a truce with the rebels, which was regarded by the Court as treason. Falling into further disgrace, Essex was condemned to death and executed.

ESSLING (May 21, 22, 1809). Napoleon received his first great defeat at Essling, in lower Austria, where the Austrians, led by Archduke Charles, overpowered him and took 30,000 prisoners. Also known as the Battle of Aspern.

ESTAING (*aiz-tan'*), **CHARLES HECTOR, COMTE D'** (1729-1794). A French admiral. Entered royal navy; was made lieutenant general (1763); vice admiral (1777); fought against English at West Indies and in America; when the treaty of peace was signed was in command of the French and Spanish fleet before Cadiz; elected to the Assembly of Notables (1787); commanded the National Guard (1789); chosen admiral by Legislative Assembly (1792). Executed (April 28, 1794), for his loyalty to the royal family.

EUGENE (*eu-zhain'*), **FRANCOIS, PRINCE OF SAVOY** (1663-1736). A celebrated Austrian general. Born in Paris (October 18, 1663). Renounced France and entered the service of the Austrian emperor Leopold against the Turks, displaying rare talents in war; noted especially at the siege of Vienna (1683), and the battle of Zenta (September 11, 1697), crushing the Turkish power in Hungary. Aided Marlborough in the War of the Spanish Succession (1701), and with him gained brilliant victories at Blenheim (August 13, 1704); Oudenarde (1708); Malplaquet (1709); was an opponent of the French in the question of the succession to the throne of Poland (1733-1735).

EUTAW SPRINGS, BATTLE OF (September 8, 1781). In the American War of Independence, 60 miles northwest of Charleston, S. C., between 2,000 Americans under General Greene and 2,800 British under General Rawdon. In the first engagement Greene was victorious; in the second the British beat off all attacks. The British loss was 800; the American, about 547.

EVANS, ROBLEY DUNGLISON (1846-). Rear admiral (retired) United States navy ("Fighting Bob Evans"); born in Floyd County, Va.; graduated United States Naval Academy (1863); served in Civil War; commanded Yorktown at Valparaiso, Chile (1891), when relations between United States and Chile were strained; commanded Iowa in Spanish War, taking active part in battle with Cervera's fleet (July 3, 1898); president of board of inspection and survey; commander-in-chief Asiatic station (October, 1902-1904); commanding Atlantic fleet (1905-1907); commander-in-chief of Atlantic fleet on its tour around the world (December, 1907-February, 1909), but obliged by ill-health to resign at San Francisco (May 9, 1908).

EWELL, RICHARD STODDERT (1817-1872). An American soldier of the Confederate army during the Civil War. Born in Washington, D. C.; as lieutenant he served in the Mexican War, attaining the rank of captain for his excellent service in the engagements of Contreras and Churubusco. Resigning his commission at the beginning of the Civil War (1861), he joined the Confederacy, and, as major general, led a division at the first and second battles of Bull Run and Antietam. Succeeded to the command of Jackson after his death at Chancellorsville, attaining the rank of lieutenant general; took part in the battles of Gettysburg and the Wilderness; was captured at Sailor's Creek (April 6, 1865). Retired to private life after the war.

EXMOUTH, EDWARD PELLEW, VISCOUNT (1757-1833). An English admiral; born at Dover. In the battle of Lake Champlain (October 11, 1776), at the age of 19, he saved his vessel after his superior officers had been wounded; took part in Burgoyne's campaign the following year. In 1816 went to Algiers to enforce the abolition of Christian slavery. By this expedition 3,000 Christians, mostly Spaniards and Italians, were liberated. On his return to England, Exmouth received the thanks of Parliament, and was promoted to the rank of viscount. In 1821 retired from public service.

EYLAU (February 8, 1807). Eylau, a town in Prussia, was the scene of a very bloody engagement between the Russian and Prussian allies and the French under Napoleon. The outcome was rather doubtful, but Napoleon claimed the victory, as the allies were the first to leave the field.

FAIRFAX, THOMAS, LORD (1612-1671). Born at Denton, Yorkshire (January 17, 1612). At the beginning of the civil war was a leader of the Parliamentary army, distinguishing himself at Marston Moor (July 2, 1644), and Naseby (June 14, 1645). His last years were spent in retirement at Bilburgh, near York, where he died (February 12, 1671). **THOMAS, LORD FAIRFAX** (1692-1782), his grandson, born in England; spent part of his life in Virginia; was an American colonial pioneer. Through marriage of the Washington-Fairfax families, he became a stanch friend of George Washington, employing him in important surveying work and exerting every effort in the futherance of his interests with the Provincial Government; was an ardent royalist during the Revolution, but his advance in years and the respect which he had won allowed him to dwell in peace. His death occurred soon after the surrender at Yorktown.

FAIRFIELD (July 8, 1779). After the British had plundered New Haven, they sailed to Fairfield, a village southwest of New Haven. As the defenders had already fled, the invaders met with no opposition, and many buildings were destroyed.

FANNING, EDMUND (1737-1818). Born on Long Island; prominent as partisan Loyalist during Revolutionary War. Appointed surveyor general by England; organized corps of 460 Loyalists (1777), taking active part in partisan warfare in Northern Department as the King's American Regiment; made councilor and lieutenant governor of Nova Scotia (1783); lieutenant governor of the Island of St. John (1787-1799); of Prince Edward Island (1799-1804). General in the British army (1808).

FARMVILLE (April 7, 1865). From Richmond, Va., Lee and his army retreated west toward Farmville. On April 7 they were met at that town by a force of

Federals under Gen. Theodore Read, and after a sharp skirmish the latter were repulsed and Lee crossed the Appomattox. At that time other divisions of Federals arrived and renewed the attack, capturing between 6,000 and 7,000 prisoners, 16 pieces of artillery, and 400 wagons.

FARNHAM, RALPH (1756-1861). Last survivor of the battle of Bunker Hill; the first white settler of Acton, Maine. A public concert was given in his honor at Boston (October, 1860). He lived to the age of 104 years, 9 months, and 19 days.

FARRAGUT, DAVID GLASGOW (1801-1870). Born at Campbell's Station, near Knoxville, Tenn.; a brave American naval officer; first admiral of the United States navy. In 1822-1823 served under Commodore Porter against the West Indian pirates, and in 1825 was commissioned as lieutenant. At beginning of Civil War entered service of the Federal government; under Commander David Porter was given charge of the important naval expedition against New Orleans (April 18, 1862); passed the forts guarding the city under terrific fire, and with a loss of only one vessel, the Confederates losing their entire fleet; took formal possession of the city, April 25, 1862; on Aug. 5, 1864, he attacked Mobile, and after a hard fight forced his way, with his fleet, past the forts, taking possession of the harbor; this was Farragut's last and greatest battle. Appointed rear admiral (July, 1862); vice-admiral (December, 1864); admiral (July, 1866), the latter two expressly created for him by Congress. He is the most distinguished American naval officer.

FAWKES, GUY (1570-1606). English conspirator who, allied with Catesby and others, thought to restore Roman Catholic supremacy by blowing up, with gunpowder, King James I., his ministers, Lords and Commons, at the assembling of the House of Parliament (November 5, 1605). He was arrested almost in the act, and executed as a traitor; Parliament making the Fifth of November forever a day of national thanksgiving.

FIELD OF THE CLOTH OF GOLD. A name given on account of the gorgeous display to the place of meeting of Henry VIII. of England and Francis I. of France (June 7-June 24, 1520) in an important interview. It was on a plain between Guisnes and Ardres in the modern department of Pas-de-Calais.

FISH DAM FORD (November 12, 1780). A small force of Americans under Sumter, defeated the British led by Wemyss, at Fish Dam Ford, Broad river, S. C..

FISHER'S HILL (September 22, 1864). From Opequan, the Confederates, led by Early, retreated to Fisher's Hill, south of Winchester, Va. There, on September 22, they were attacked by Sheridan, and after an overwhelming defeat they retreated in confusion, pursued by the Federals. About 1,100 prisoners and 16 guns were taken by Sheridan, while the Confederates lost many more in killed and wounded.

FITZGERALD, EDWARD, LORD (1763-1798). An Irish politician and revolutionist. Born at Carton Castle, near Dublin, Oct. 15, 1763. Educated in France; prominent as a leader in the uprising of the United Irishmen (1798). Arrested on a charge of treason, he died in prison while awaiting trial.

FIVE FORKS (April 1, 1865). After Sheridan's raid in the valley of the Shenandoah, he joined the Federal forces in the vicinity of Richmond, Va. On March 31 Sheridan's division led by Warren was repulsed by Lee at Dinwiddie Court House, and Sheridan forced back toward Dinwiddie. The following day Sheridan advanced to make an attack. Lee's army made a desperate resistance but were completely defeated; and as they fled along White Oak Road the Federals gave chase and captured over 5,000 prisoners. The loss to Sheridan was nearly 7,000 men.

FLAG (First Union). It is said that a flag of alternate red and white stripes, representing the thirteen colonies, was unfurled at Washington's headquarters, Cambridge, on January 2, 1776. On June 14, 1777, by order of Congress, the blue field of white stars in the corner (the part of the flag called "the union") was introduced. The first flag determined by law to be the flag of the United States was undoubtedly made in Philadelphia by Mrs. Betsy Ross. Tradition says that Washington penciled the plan of it. It is claimed that the first military use of the flag was at Ft. Stanwix (now Rome, N. Y.), in August, 1777, when the fort was besieged. On that occasion the banner used was improvised from a red petticoat, a white shirt, and Col. Gansevoort's blue cloak. Congress decided in 1818 that the number of stripes should thereafter be the original thirteen, but a new star should be placed in the "union" for each additional state.

FLEETWOOD. See BRANDY STATION.

FLEURUS. (1) August 29, 1622. While the Germans, after their defeat at Hochst, in the Thirty Years' War, were marching toward Fleurus, a village of Belgium, they were intercepted by the Spaniards, under Cordova, whom they routed severely. (2) On July 1, 1690, a battle was fought at Fleurus between the French, under Luxembourg, and the Germans and Dutch, under Waldeck. The allies were defeated with a loss of 14,000.

FLODDEN FIELD, BATTLE OF (September 9, 1513). Between 32,000 English under the earl of Surrey and the Scotch under James IV. The Scotch were defeated with a loss of from 8,000 to 10,000, including the king, the archbishop of St. Andrews, twelve earls, and many nobles.

FOLGER, WILLIAM MAHEW (1844-). Rear admiral (retired) United States navy; born at Massillon, O.; graduated at United States Naval Academy (1864); inspector of ordnance, navy yard, Washington (1888-1890); chief of bureau of ordnance (1890-1893); lighthouse inspector, 11th district (1896-1898), 3d district (January-April, 1898, 1901-1904); commanded Philippine squadron, Asiatic fleet (April-September, 1898), cruiser squadron, Asiatic fleet, until March 30, 1905; rear admiral (June 1 1904); retired (June 30, 1905).

FONTENOY (May 11, 1745). While the French forces, commanded by Marshal Saxe, were besieging Tournay, a city in southern Belgium, 50,000 British, Dutch, and Austrian troops tried to relieve the city by attacking the French at Fontenoy, near there. The French, however, being reinforced, held their own, and beat back the allies. A grand charge by the famed "Irish Brigade" decided the battle. A great blow to England, as it came at the same period as the threatened Stuart invasion.

FOOTE, ANDREW HULL (1806-1863). Officer in the American navy; born in New Haven, Conn. Teacher of midshipmen at U. S. naval hospital, Philadelphia (1841-1843). As commander of the brig Perry cruised in African waters (1849-1851) to protect American commerce and suppress the slave trade. While in command of the Portsmouth on the East India station, established fortified posts at Canton for the protection of American residents, and was fired upon from the Barrier Forts, which a week later he stormed and captured. Commanded Brooklyn Navy Yard (1858-1861). Assuming at St. Louis command of the Western flotilla (Sept. 6, 1861), he devoted himself for some time to preparations for action; captured Fort Henry (February 6, 1862); unsuccessfully attacked Fort Donelson on the 14th, and was wounded; in coöperation with General Pope captured Island No. 10 (April 7, 1862); forced by his wound to resign his command (July, 1862), in which month he had been appointed rear admiral. Chief of Bureau of Equipment and Recruiting for several months (1862-1863); appointed (June 4, 1863) to succeed Rear Admiral Dupont as commander of the fleet off Charleston, but died in New York (June 26).

FORREST, NATHAN BEDFORD (1821-1877). A prominent Confederate soldier; born near Chapel Hill, Tenn. Was at Fort Donelson; assumed several cavalry commands; said to have been the head of the Ku-Klux Klan at one time.

FORT BOONE (August 8-20, 1778). Daniel Boone, who with 50 men, occupied Fort Boone, in Madison Co., Ky., was attacked by a small detachment of British under Captain Duquesne. The Americans would not surrender, and finally, after maintaining a heavy bombardment for several days, the British retired.

FORT BOWYER. On September 15, 1814, a force of 1,300 British and Indians attacked Fort Bowyer, near Mobile, Ala. The fort was then held by 134 Americans under Maj. William Lawrence, and they succeeded in repulsing the British with a loss of only five men killed and four wounded, while the British lost 232 men.

FORT BROWN (May 3-10, 1846). When the United States began to have trouble with Mexico over a bit of land between the Nueces and Rio Grande rivers, in Texas, troops were immediately sent to the Texas frontier. An army of 4,000 men under Gen. Zachary Taylor were stationed at Point Isabel, near the mouth of the Rio Grande. The first skirmish of the war occurred a few miles up the river, when a detachment of Taylor's men were attacked by the Mexicans. Later Taylor moved up the river and built Fort Brown, after which he returned to Point Isabel, leaving Major Brown at the fort. On May 3 the Mexicans began a bom-

bardment which they kept up until the 10th, but the fort was bravely defended, although Brown was killed.

FORT CHAMBLY (October 19, 1775). With the assistance of some of the Canadians, Montgomery determined to capture Fort Chambly, north of St. John's, in Canada. Under cover of the darkness, the Americans floated cannon down the river past St. John's, and with little resistance the garrison at Fort Chambly surrendered on October 19th. A very large supply of ammunition, firearms, and food was given over to the Americans.

FORT CLINTON (October 6, 1777). Fort Clinton, on the Hudson river, near West Point, was captured by the British army during the War of the Revolution.

FORT DONELSON (February 16, 1862). After the capture of Fort Henry, Grant turned his attention to Fort Donelson, on the west bank of the Cumberland river in Tennessee. On February 14, 1862, the Federal fleet made an attack, but withdrew with two vessels crippled. The land forces with reinforcements which increased their number to 15,000 made an attack on February 15th, and fought a desperate battle until dark with the Confederates, who attempted to break through the lines. The following day Buckner, upon whom the command had fallen, surrendered with 15,067 men, 65 guns, and 17,600 arms.

FORT DUQUESNE (November 25, 1758). Fort Duquesne, on the present site of Pittsburg, Pa., was settled by the French in 1754. In 1755 the English tried to capture it but were not successful. The winter of 1758 was very severe, and when the English heard that the garrison was too weak to offer much resistance they sent an expedition to capture it. The French, however, had already evacuated the fort, having burned it to the ground. Under English control a new fort was built and called Pitt, in honor of William Pitt.

FORT ERIE. (1) On July 3, 1813, a force of Americans under General Brown appeared before Fort Erie, opposite Buffalo, and demanded the surrender of the British. Without attempting a defense, Major Buck surrendered 170 men. (2) In August, 1814, Fort Erie was besieged by the British under Lieutenant Colonel Drummond. Their first attack and bombardment was made on the 14th, but they were compelled to retreat with a loss of 221 men killed, 174 wounded, and 186 prisoners. The British still continued bombarding the fort until September 17th, when the Americans made a successful sortie and captured and destroyed the British batteries. With heavy losses Drummond at once retreated, and the Americans abandoned Fort Erie after destroying it.

FORT FISHER. (1) On December 13, 1864, an expedition consisting of a land and naval force commanded by General Butler, started toward Fort Fisher, an important stronghold guarding Wilmington, N. C. The bombardment began December 24 and in less than two hours the fort capitulated and the following day Butler withdrew. (2) A second expedition led by General Terry was sent against Fort Fisher in January, 1865. The garrison fought desperately to hold the fort, but at the end of five hours were forced to surrender 2,083 prisoners, on January 15. The loss to the Federals in the assault was 955.

FORT FRONTENAC (August 27, 1758). An army of 3,000 English commanded by Colonel Bradstreet landed on the Canadian shore of Lake Ontario near Fort Frontenac, and after a few days of effective cannonading the French surrendered. The capture of this point severed communication between Quebec and the Ohio valley.

FORT GEORGE. (1) During the French and Indian War the French troops led by Montcalm captured Fort George, opposite Fort Niagara on the Niagara river. (2) On May 27, 1813, Fort George was attacked and captured by the Americans under General Boyd. (3) On July 8, 1813, there was a skirmish near Fort George, which resulted in the British driving the Americans back to the fort. (4) The British again attacked the fort on July 17, 1813, but the Americans commanded by Colonel Scott gallantly defended it.

FORT GRISWOLD (September 6, 1781). Benedict Arnold, in charge of an army of British, captured Fort Griswold, on the Thames river, in Conn., from the Americans. Colonel Ledyard was killed as he was surrendering his sword.

FORT HARRISON. On September 5, 1812, a band of Indians attacked Fort Harrison, on the Wabash river, in Indiana. The fort was then occupied by a small garrison under Captain Taylor, and most of the soldiers were sick with a fever. In even this weak condition they were able to defend themselves until relief came.

FORT HENRY (February 6, 1862). In response to President Lincoln's command for a general movement of the Federal forces, General Halleck sent an expedition to capture Fort Henry, on the Tennessee river, in northern Tennessee. On February 5, 1862, a land and naval force sailed to within four miles of the fort, where the infantry under General Grant were landed. The following morning the boats advanced to make the attack, and after an engagement of almost an hour and a half the Confederates surrendered. The Federal infantry came up later, and Grant assumed command of the fort.

FORT McALLISTER (December 13, 1864). After devastating the country around Atlanta, Ga., Sherman continued his march toward Savannah, arriving at Fort McAllister in December. McAllister stood just south of Savannah, on the Ogeechee river, and guarded the harbor. On December 13 the Federals made an attack from the land side, and in a few minutes were in possession of the fort. Sherman then turned his attention to Savannah, and after careful preparation for the siege discovered that the Confederates had abandoned the city on December 20. It was entered the next day by Sherman and his army, thus ending his march to the sea. Only 308 men were lost out of an army of 66,000.

FORT McHENRY (September 13, 1814). In attempting to capture Baltimore, the British first bombarded Fort McHenry, southeast of the city. For 25 hours the British ships threw shells, but after the loss of two vessels and many men they withdrew.

FORT MACKINAC (July 17, 1812). Immediately after the declaration of war, and before the Americans had learned of it, Captain Roberts with 600 British and Indians attacked Fort Mackinac, in Michigan, and Lieutenant Hancks surrendered with little resistance.

FORT MADISON (September 5-8, 1812). A small force of regulars commanded by Hamilton and Vasques at Fort Madison, near St. Louis, on the Mississippi river, was attacked by a band of Indians on September 5th. For three days the assault was continued, but the Indians were finally obliged to withdraw.

FORT MEIGS (May, 1813). The British under Proctor attempted to capture Fort Meigs, on the Maumee river, in Ohio, built and defended by Harrison and his American forces. General Clay arrived with reinforcements and the British retreated. A second attempt to capture the fort in July, 1813, was also unsuccessful.

FORT MERCER (October 22, 1777). After the defeat of the Americans at Germantown, Howe proceeded to gain control of the Delaware river. To this end, he sent a detachment south to Fort Mercer, and that fort was abandoned by the Americans only after the fort on the opposite side of the river had been taken.

FORT MIFFLIN (November 15, 1777). After a desperate struggle in which the British lost heavily, Fort Mifflin, just south of Philadelphia, was surrendered by the Americans. The capture of this stronghold gave the British control of the Delaware river.

FORT MIMS MASSACRE (August 30, 1813). When the Creek Indians began to wage war against the Americans, Fort Mims, near Montgomery, Ala., became a place of safety for the frightened inhabitants. On August 30, 1813, a large body of Indians attacked the fort, and although its defenders fought desperately, they were completely overpowered. Of the 550 persons there, 400 were massacred, the negroes were made slaves, and about 12 escaped into a swamp.

FORT MONTGOMERY (October 6, 1777). Fort Montgomery, near West Point on the Hudson river, was captured by the British during the Revolutionary War.

FORT MOTTE (May 12, 1781). In order to maintain their hold on Charleston and Augusta, the British transformed the home of Mrs. Rebecca Motte, just above the confluence of the Wateree and Congaree rivers, in South Carolina, into a fort. On May 8, 1781, this post was besieged by the Americans led by Marion and Lee, and on May 12th the garrison of 150 men surrendered.

FORT NECESSITY (July 4, 1754). Early in Washington's career he commanded a small force of men who occupied Great Meadows in Virginia, and built a fort there called Fort Necessity. The French were in possession of most of the surrounding country, and soon a French army led by Villiers attacked the English at Fort Necessity and the latter were obliged to evacuate.

FORT NIAGARA. (1) July 25, 1759. An English army under Prideaux and Sir William Johnson were sent toward Montreal through the Ohio valley. Fort Niagara, then held by the French, was captured after a siege of three weeks. This victory gave the English control of the entire upper Ohio valley. (2) On November 21, 1812, the British batteries opposite Fort Niagara conducted an active bombardment of that fort. The firing continued until evening, and although the Americans were short of ammunition, they succeeded in holding the fort.

FORT PILLOW (April 12, 1864). Fort Pillow, about 40 miles above Memphis, Tenn., was defended by Major Booth and a garrison of 557 men. On April 12 the fort was attacked by Forrest and a large force of Confederates. The garrison was about to surrender when Major Bradford, who assumed command on the death of Booth, refused to do so. The Confederates at once renewed the attack, and the garrison fled. The enemy gave chase and murdered between 300 and 400 without the slightest mercy.

FORT ST. GEORGE (November 23, 1780). At Brookhaven, L. I., the British took possession of St. George's manor house, fortified it and named it Fort St. George. Major Tallmadge, with a small force from Fairfield, Conn., was sent to destroy the forage which the British had collected there. The garrison at the fort were taken by surprise November 23, 1780, and compelled to surrender 54 of their number, and about 70 tons of hay were burned.

FORT ST. PHILIP. On January 9, 1815, five British ships of war appeared before Fort St. Philip, on the Mississippi river below New Orleans, and for nine days that fort was vigorously bombarded. The garrison was commanded by Major Overton, and the fort was so gallantly defended that the British finally withdrew.

FORT STEEDMAN (March 25, 1865). In the hope of reaching Grant's supplies at City Point, Va., Lee arranged a plan for the capture of Fort Steedman, between the Appomattox and Hatcher's Run. The attack was made on March 25. At first the Confederates were successful, but their reinforcements failed to arrive and the garrison rallied so strongly that Lee was completely repulsed, losing over half of his troops in the action.

FORT STEPHENSON. On August 1, 1813, Major Croghan, who occupied Fort Stephenson (Now Fremont), Ohio, was attacked by a large force of British regulars led by General Proctor, while 2,000 Indians guarded the roads to cut off reinforcements. For two days the fort was bombarded, and on August 2d a vigorous assault was made, but the garrison gallantly defended the post with only one man killed and seven wounded.

FORT SULLIVAN, CHARLESTON, S. C. (June 28, 1776). Clinton having been sent to America to hold the colonies for the Crown, he expected Cornwallis and Parker to arrive at Charleston, S. C., with reinforcements. The colonists strengthened their position at Charleston by building a log fort on Sullivan's Island, giving them command of the harbor. When the British ships arrived they stationed troops on another island and opened fire on Fort Sullivan, but the Americans aimed well and finally the British gave up the attempt.

FORT SUMTER (April 12, 1861). The first conflict of the Civil War in the United States occurred at Fort Sumter, S. C. On April 12, 1861, General Beauregard and his Confederate troops laid siege to the fort, then held by a small garrison of 80 men under Maj. Robert Anderson. Anderson and his men kept the enemy at bay until the 14th, when, being unable to hold the fort, they lowered their flag and fled.

FORT WAGNER. On July 11, 1863, after several attacks on Fort Sumter, General Gillmore turned his attention to Fort Wagner, an important stronghold on Morris Island, near Charleston, S. C. This attempt, as well as one made on July 18, was unsuccessful, the Federals being driven back with heavy losses. After spending some time in making trenches the attack was renewed. By August 23 Fort Sumter, opposite Wagner, was reduced; and after a vigorous bombardment day and night Fort Wagner was abandoned by the Confederates September 6, thus leaving the Federals in possession of the whole of Morris Island.

FORT WASHINGTON (November 16, 1776). Fort Washington, a very important position just north of New York City, was held by a division of Washington's best men under Colonel Magaw. The British, commanded by Howe, marched against it with a large army and after an active bombardment compelled its surrender and took 2,600 prisoners and all the ammunition.

FORT WATSON (April 23, 1781). After the conflict at Guilford, the Americans resolved to regain South Carolina. To this end, Lee and Marion united their forces and on April 15th laid siege to Fort Watson, in Sumter Co., S. C. On April 23d the fort surrendered to the Americans.

FORT WILLIAM HENRY (August 3-9, 1757). With an army of 7,600 men, including about 2,000 Indians, the French led by Montcalm, laid siege to Fort William Henry, at the head of Lake George. The garrison there was commanded by Colonel Monroe. After resisting the French as long as possible, and calling in vain for reinforcements from General Webb, the English were obliged to capitulate. Everything was destroyed, and as the English were evacuating many were robbed and scalped by the Indians, in spite of Montcalm's efforts to prevent it.

FOUCHE (*foo-shay'*), **JOSEPH, DUC D'OTRANTE** (1763-1820). A French politician and minister of police; born at Pellerin. Taught at Juilly, Arras, Vendôme; principal of College of Nantes (1789). Elected deputy of National Convention (1792); voted for death of Louis XVI.; prominent in inauguration of Worship of Reason and in spoliation of churches. After holding presidency of Jacobin Club was excluded therefrom by Robespierre. Made minister of police (1799); took part in coup d'état of eighteenth Brumaire; under the empire was also minister of interior, controlling the internal government of France during Napoleon's prolonged absences. Falling into disgrace, fled from France (1810), but soon returned. Exiled by law against regicides (1816), he retired to Prague, became an Austrian subject (1818), and died at Trieste.

FRA DIAVOLO (1770-1806). Real name, Michele Pezza; born in Calabria. Expelled from a monastery, became chief of a band of Italian brigands and displayed great cruelty. Made a colonel by Ferdinand of Naples, whom he aided against the French. Attempted to stir up insurrections in Calabria (1799, 1806). Captured by Masséna at San Severino, and hanged as a bandit, at Naples. Auber's opera, "Fra Diavolo," is not based upon historical truth.

FRANKLIN (November 30, 1864). When Sherman learned that General Hood was marching toward Nashville, Tenn., he sent a force of 25,000 Federals to protect his base of supplies there. At Franklin, 20 miles south of Nashville, Schofield's division encountered General Hood. Four times the Confederates charged their opponents, but Schofield was well supported by the other brigades and after a sanguinary battle the Federals proceeded toward Nashville. General Hood's loss in this battle was 8,000 soldiers; the Federals' loss was 3,641.

FRANKLIN, SAMUEL RHOADS (1825-1909). Rear admiral (retired) United States navy; born at York, Pa.; served in Mexican and Civil wars; superintendent naval observatory (1884-1885); commander-in-chief of European station (1885-1887); was president of international marine conference; rear admiral (January 24, 1885); retired (August, 1887).

FRAZIER'S FARM. See GLENDALE.

FREDERICKSBURG (December 13, 1862). General Burnside, with a Federal army numbering 100,000, met 90,000 Confederates under General Lee, at Fredericksburg, Virginia, during the Civil War. Burnside crossed the Rappahannock river on the 12th, and the next day attacked Lee's forces. In view of the fact that the Confederates occupied an almost impregnable position, it was unwise for the Federals to continue their attack, but Burnside was obstinate and would not listen to the protests of his subordinates. Division after division was ordered forward, only to be cut down by the steady fire from the Confederate muskets. That night, when the Federalists retreated, 12,000 men had been left on the field, dead or dying; the Confederate loss was about 5,000 men.

FREEMAN'S FARM. See SARATOGA.

FREIBURG (August 3, 5, 10, 1644). After a very sharply contested battle at Freiburg, a town in the province of Baden, Germany, the French, under Conde, forced the retreat of the Bavarians, under Mercy, and captured all their artillery and baggage. Several times in its later history Freiburg was captured by the French, but was never long retained by them.

FRENCH AND INDIAN WAR. The struggle in America between the French and English (1754-1760). Almost coincident with the Seven Years' War in Europe. It was marked by Braddock's defeat at Fort Duquesne (1755); the British defeat at Ticonderoga (1758); capture of Louisburg by the English, of Fort Frontenac, and Fort Duquesne (1758); and, finally,

the defeat of the French under Montcalm by the English under Wolfe on the Plains of Abraham near Quebec (September 13, 1759). By the Treaty of Paris (1763), which closed the Seven Years' War, all Canada passed into the hands of the English.

FRENCH REVOLUTION. Its chief leaders: Comte de Mirabeau (1789-1791); Danton, from the death of Mirabeau to 1793; Robespierre, from June, 1793, to July 27, 1794. Next to these three were St. Just, Couthon, Marat, Carrier, Hébert, Santerre, Camille Desmoulins, Roland and his wife, Brissot, Barnave, Sieyès, Barras, Tallien, etc. Its great days: 1789, June 17, the Tiers Etat constituted itself into the "National Assembly"; June 20 the day of the "Jeu de Paume," when the Assembly took an oath not to separate till it had given France a constitution; July 14, storming of the Bastille; October 5, 6, the king and National Assembly transferred from Versailles to Paris. This closed the ancient régime of the court. 1791, June 20, 21, flight and capture of the king, queen, and royal family. 1792, June 20, attack on the Tuileries by Santerre; August 10, attack on the Tuileries and downfall of the monarchy; September 2, 3, 4, massacre of the state prisoners. 1793, January 21, Louis XVI. guillotined; May 31, commencement of the Reign of Terror; June 2, the Girondists proscribed; October 16, Marie Antoinette guillotined; October 31, the Girondists guillotined. 1794, April 5, downfall of Danton; July 27, downfall of Robespierre. The Revolution was caused by a half century of lack of confidence in the ruling monarchy and the government; French armies defeated; people overtaxed; nobility opposing all reforms; the country was in a state of tyrannic and oppressive chaos. The Revolution swept away the Bourbon monarchy and the old feudal régime.

FRIEDLAND (June 14, 1807). In a battle at Friedland, in northern Prussia, Napoleon, with an army of 80,000, defeated the allied Russian and Prussian forces. The Peace of Tilsit was negotiated soon after this victory.

FRISIANS. A Germanic people who for about 2,000 years have dwelt on the shores of the North Sea, between the Scheldt and the Elbe, and northward to the coast of Jutland. From the time of Drusus to about the end of the first century, they were subject to the Romans; and were subdued by Charlemagne after an almost two hundred years' struggle with the Franks. In the seventh century Christianity was introduced among them by Wilfred, archbishop of York, and by Willibrord. The religious center of their heathenism had been the island of Heligoland. While in eastern Friesland the dynasty of Cirksena ruled from 1430 to 1744, the Frisians never politically formed one united people, but were governed by a number of small chieftains. Bands of Frisians settled in England in the fifth century. They have been and still are a capable, seafaring race, always possessing a strong instinct for freedom.

FUNSTON, FRED (1865-). American soldier; born at New Carlisle, Ohio. After a connection as botanist with the Department of Agriculture (1891), he offered his services to the Cuban Junta (1894), and was there promoted lieutenant colonel for bravery; captured by the Spanish, condemned to death but set free; organized the Twentieth Kansas Volunteers (similar to "Rough Riders") and was made colonel; served in the Philippines (1898); made brigadier general (1899); relieved because of illness and returned home same year; returned to the Philippines (1901); captured Aguinaldo. During the San Francisco earthquake he took military charge of the city and did heroic work.

GADSDEN PURCHASE. In 1853 the United States bought from Mexico a tract of land now forming a part of New Mexico and Arizona. It contains 45,535 square miles bounded on the north by the Gila river, on the east by the Rio Grande, and on the west by the Colorado. The United States gave $10,000,000 for it. The Mexicans also abandoned all claims based on the Indian raids of 1848 and 1853. The treaty so displeased the Mexicans that Santa Anna, who acted for them, was banished.

GAETA (the ancient Cajeta). Gaeta, a city of Italy, has undergone many sieges. During the year 1799 it was taken by both the French and the English; by the French in 1806, and by the Austrians in 1815 and 1821. February 13, 1861, Gaeta surrendered to the Sardinian general, Cialdini, after a siege.

GAINES'S MILL (June 27, 1862). One of the Seven Days' Battles near Richmond, Va., during the Civil War, was fought at Gaines's Mill, a few miles east of Mechanicsville. After his encounter at Mechanicsville, Porter moved to Gaines's Mill, followed by A. P. Hill and his Confederates. Both armies were reinforced; the Federals numbered 35,000; the Confederates, 60,000. A closely contested struggle occurred on June 27, but Porter was able to keep the Confederates at bay until his men had crossed the Chickahominy river with the guns and wagon trains. During the night, after Porter and the remaining troops had crossed, the bridges were destroyed. Both sides sustained heavy losses. Also known as the battle of the Chickahominy and the battle of Cold Harbor.

GAMBIER, JAMES, BARON (1756-1833). British admiral; born in the Bahamas. Took part in capture of Charleston (1780); in victory off Ushant (1794); governor of Newfoundland and commander-in-chief of naval station (1802-1804); commanded fleet which bombarded Copenhagen (1807); in supreme command in the Channel (1809), when French fleet was destroyed in Basque Road by Lord Cochrane (Dundonald). One of the commissioners in negotiations of Treaty of Ghent (1814). By successive promotions, attained the rank of admiral.

GANANOQUI VILLAGE. On September 20, 1812, 95 Americans led by Captain Forsyth landed near Gananoqui, a village near the Thousand Islands, in Canada, where the British had collected ammunition and stores. After making a brief resistance, the British retreated. A large quanity of supplies were seized by the Americans and the storehouse burned.

GARCIA (*gar-thee'ah*) **Y INIGUEZ, CALIXTO** (1836-1898). Cuban patriot; born at Holguin, Cuba. Leader in Ten Years' War (1868-1878); became commander-in-chief of Cuban army. Captured during rebellion of 1880, deported to Spain, and held there under police surveillance for fifteen years. Escaped to Paris (1895), then to United States, where he became active as a filibuster. Subsequently won several brilliant victories in Cuba, and at El Caney (Spanish-American War), on July 1, 1898, led a Cuban force of 4,000. While head of a commission to discuss Cuban affairs with President McKinley, Garcia died at Washington, D. C.

GARIBAL'DI, GIUSEPPE, GENERAL (1807-1882). A distinguished Italian patriot; born at Nice. He took an active interest in the national movement in Italy. Took part in the uprising in Genoa (1834). Condemned to death he fled to France, thence to South America; took part in the struggle of Uruguay against the Argentine Republic; returned to Europe when Italy rose against Austria (1848); defended Rome against the French (1849); fled to Genoa, thence to Tunis, thence to New York; was an exile for several years. In 1860 he returned to Italy and took part in the efforts to unify Italy with the help of Sardinia. He kept up the struggle until 1870, when he went to help the French Republic. He entered the Italian Parliament in 1874.

GATES, HORATIO (1728-1806). American Revolutionary general; born in England. Served under Braddock and was severely wounded at Fort Duquesne (1755); lived in retirement in Virginia (1763-1775); placed in command of the army which returned from Canada; captured Burgoyne's army at Saratoga (1777).

GENEVA ARBITRATION. The meeting of the Board of Arbitrators at Geneva in 1872 to settle the Alabama Claims.

GENEVA CONVENTION (1864). An international agreement to respect the persons and property of those who in time of war voluntarily give their services to care for the sick and wounded. Such must have a recognized costume, flag, and arm-badge (red cross on a white ground), and, if taken prisoners, are to be discharged without ransom. Frequently called "The Red Cross Society," and was first brought into operation in the Franco-German War (1870-1871).

GENOA. (1) December 6-10, 1746. On account of ill-feeling among the inhabitants of Genoa, in northern Italy, against the Austrians garrisoned there, the citizens rose in arms and drove the soldiers from the city with a loss of 5,000 men. (2) March 13, 1795, during the wars of the French Revolution, the French were defeated by the English in a naval battle near Genoa. (3) In April, 1800, the Austrians laid siege to Genoa, then occupied by the French. On account of a blockade by the British, provisions were scarce, and finally on June 5th the city capitulated.

GERARD (*zhay-rar'*), **ETIENNE MAURICE, COMTE** (1773-1852). Marshal of France; born at Damvilliers, Meuse. Served under Dumouriez and Jourdan; became chief of staff to Bernadotte; famous for his

splendid charge at Austerlitz (1805); also won distinction at Jena (1806), Erfurt (1806), Wagram (1809). Fought in Spain and Russia. Received various high appointments after the first restoration. Fought gallantly at Ligny (June 16, 1815). Obliged to leave France after second restoration, but returned (1817). Elected to Chamber of Deputies (1822). Active in Revolution of 1830. Minister of war under Louis Philippe. Marshal of France (1831). Commanded expedition to Belgium, capturing Antwerp (December, 1832). Grand chancellor of Legion of Honor (1835).

GETTYSBURG. Decisive battle of the world (1863), also of the American Civil War. General Meade with 90,000 Federals fought three days with 80,000 Confederates, and, after vacillating fortune for two days, on the third day forced the Confederates to retreat. It was practically the beginning of the end of the war. The "unity" of the States and emancipation of the slaves were assured, and secession rendered a dead issue. Victory stopped the Confederates' daring invasion of the North, and to the end of the war the South was always on the defensive. The losses including both armies were 5,664 killed, 27,206 wounded, 10,584 captured or missing, after three days of fighting.

GHENT. Ghent, in Belgium, has been the scene of several contests and uprisings. (1) The most famous seems to have been the revolt against a tax levied by Charles V. in 1539. The city rose in arms, but as the neighboring towns would not uphold it, the German army entered the city without resistance. The leaders of the revolt were killed, all things owned in common were confiscated, and the payment of a heavy fine demanded. (2) During an attempt on the part of Spain to reduce the Hollanders to obedience, city after city surrendered without a struggle. This caused Ghent to become disheartened, and on September 17, 1584, it disgracefully surrendered to Alexander of Parma with an immense quantity of provisions, ammunition, and a splendid equipment. (3) In 1678, when the European allies were waging war against France, Ghent was captured by the French army after a short bombardment. (4) During Marlborough's campaigns in the War of the Spanish Succession, Ghent was taken by the French and retaken by the Allies. (5) In 1745, immediately after the Battle of Fontenoy, during the War of the Austrian Succession, Ghent was again taken by the French.

GHENT, TREATY OF. Signed at Ghent, December 24, 1814; ratified by the United States Senate, February 17, 1815. It closed the War of 1812. The American negotiators were John Quincy Adams, James A. Bayard, Henry Clay, Jonathan Russell, and Albert Gallatin. The English were Lord Gambier, Henry Goulburn, and William Adams.

GHERARDI (*gay-rar'dee*), **BANCROFT** (1832-1903). An American naval officer; born in Jackson, La. Midshipman (1846-1850); in the Civil War he commanded the Chocorua and the Port Royal, and with the latter he chased the Confederate gunboats Morgan, Gaines, and Selma, at Mobile Bay (August 5, 1864); rear admiral (1887); commanded the Brooklyn Navy Yard (1887-1889 and 1893-1894); commander in chief of the North Atlantic Squadron (1893-1894); in charge of the Columbian naval parade and review in New York harbor (1893); retired (1894).

GIBRALTAR. Town and fortress on rocky promontory forming east horn of Bay of Algeciras, Spain, at entrance to Mediterranean. Made a British Crown colony (1704) under administration of a governor. Called "The Key of the Mediterranean," commanding the 13 mile wide strait between Spain and northern Africa. The rock is gray marble, very hard, three miles long, three quarters of a mile wide, and has a high point of 1,439 feet. The colony is self-supporting. The port is free and an important coaling station. Shipping of port exceeds 4,000,000 tons annually, mostly in British bottoms. Population, including 5,349 soldiers in garrison, is 27,460 (1901), mainly British with some Spaniards, Jews, and Moors. About 10,000 daily laborers on the promontory live in the town of La Linea de la Concepción and are not included in above estimate. During the War of the Spanish Succession (1704) the combined fleets of England and Holland, commanded by Sir George Rooke, attacked Gibraltar, and after a siege of two days captured the stronghold. From 1779 to 1783 an active siege was carried on by the French and Spanish, but the ineffectual blockade was finally lifted.

GIDEON. A Hebrew warrior who freed the people from the oppression of the Midianites. This occurred about 1245 B. C. Gideon is also called Jerubbaal. He became one of the "Judges" of Israel and his son, Abimelech, was made a "king" in Shechem. He captured and put to death the two Midianite kings, Zeba and Zalmunna.

GLADIATORS. Swordsmen whose profession was to fight for the public amusement. They were either free-born citizens of a low class usually, or slaves, captives, or malefactors, and were carefully trained in schools. They were first exhibited in Rome in 264 B. C., at funerals, but later at festivals. The andabatae wore helmets with no opening for the eyes; mirmillones used Gallic weapons, sword and shield; retiarii carried a net and a three-pronged lance; Thraces used a short sword and round buckler. The people cried "Habet" (He has it) if the gladiator were severely wounded and defeated, and he lowered his arms. If the spectators turned their thumbs down the gladiator was killed; if up, his life was spared. Sometimes none were spared alive. Great cruelty and callousness were often shown by the spectators. A rudis or wooden sword was presented to discharged gladiators, who were called rudiarii. The Greeks disliked gladiatorial combats, and practically none ever took place in their cities.

GLENDALE, or **FRAZIER'S FARM** (June 30, 1862). One of the Seven Days' Battles in the vicinity of Richmond, Va., during the Civil War. After pursuing the Federals as they marched south from the Chickahominy river, Longstreet and Hill overtook them at Glendale. The battle which ensued was fought desperately, and both sides sustained heavy losses, but the Federals still held the field when the fighting ceased at night.

GLOUCESTER, SIEGE OF (August, 1643). The Royalists and Parliamentarians of England had been engaged in war about a year when King Charles I. and his forces laid siege to Gloucester, on the Severn River. The inhabitants put forth every effort to hold the city, and as they were assisted by volunteers from London, the Royalists were finally compelled to raise the siege.

GOLDING'S FARM (June 28, 1862). During the Seven Days' Battles in the vicinity of Richmond, Va., a small division of the Federal troops under Franklin were attacked by the Confederate artillery at Golding's Farm, near Woodbury's bridge, on the Chickahominy river. After a brief skirmish the Confederates were repulsed with a loss to the victors of 368 men.

GO'MEZ Y BAEZ, MAXIMO (1826-1905). Cuban general, born at Bani, Santo Domingo. Served in the Spanish army, but, becoming disgusted with Spanish rule in Cuba, resigned, and became a planter. Joined the insurgents in the Ten Years' War (1868-1878), and was made commander-in-chief on the death of General Agramonte (1873); also holding that office in the revolution which broke out in 1895, carrying on a successful guerrilla warfare until the coming of the Americans (1898), at whose disposal he placed his small force. At the end of the Spanish-American War, influenced his people to maintain friendly relations with the United States, and civil reorganization was assured. For receiving for his army the three million dollars voted by the United States government, Gomez was deposed from supreme command (March, 1899).

GONSAL'VO or **GONZALO OF CORDOVA, HERNANDEZ DE AGUILAR** (1443 or 1453-1515). Noted Spanish general, born at Montilla, near Cordova. Became distinguished in the war of Queen Isabella of Castile against Portugal and in the war against the Moors, conducting the negotiations for the surrender of Granada (1491). Assisted Ferdinand of Naples against the French (1495), ultimately driving them from Naples, and earning the title of "Great Captain." Again defeated the French (1503), establishing Spanish rule, and was appointed viceroy of Naples. Deprived of this office (1507) through the jealousy of Ferdinand, Gonsalvo retired to Granada.

GOODRICH, CASPAR FREDERICK (1847-). Rear admiral United States navy; born at Philadelphia; graduated United States Naval Academy (1864). Attached (1864) to the Macedonian in pursuit of Confederate steamers Florida and Tallahassee; brought Greely Relief-ship Alert to New York (1884); president Naval War College (1897-1898); during war with Spain commanded St. Louis and Newark; commandant navy yard, Portsmouth (1903-1904); rear admiral (February 17, 1904); commander-in-chief of Pacific squadron (1905-1906); commandant Brooklyn Yard since June 1, 1907.

GORDIAN KNOT. Gordius, chosen king of Phrygia, dedicated his car and yoke to Zeus, at Gordium; the

knot of the yoke being so skillfully tied that whoever should unloose it would, an oracle declared, become ruler of all Asia. Alexander the Great, coming to Gordium, cut the knot in two with his sword and applied the prophecy to himself.

GORDON, CHARLES GEORGE, called **"CHINESE GORDON"** and **"GORDON PASHA"** (1833-1885). English soldier; born at Woolwich. Served with distinction in Crimean War. Employed in surveying and settling Russo-Turkish frontier in Asia (1856-1858). Joined Anglo-French forces in China (1860); remained at Tientsin in command of royal engineers, exploring the interior; made commander of "Ever Victorious Army" (1863), suppressing Tai-ping rebellion and making accessible rich provinces and cities of the silk districts. Received from Chinese emperor the yellow jacket and peacock's feather of a mandarin of the first class, also the gold medal and title of Ti Tu, the highest Chinese military rank; but refusing from him a large sum of money. Commanded royal engineers at Woolwich (1865-1871), becoming noted for charitable work among the poor and sick. Sent by Ismail Pasha to establish authority of Egypt in Upper Nile basin (1874), and appointed governor of Equatorial Provinces. Later made a pasha. Appointed governor of the Sudan by the Khedive (February, 1877), developed natural resources of country, established communication between widely separated districts, suppressed rebellion and slavery; resigned (1879). For a few months was private secretary to Lord Ripon, governor general of India (1880). Connected with the Cape government (March-October, 1882). Visited the Holy Land (1883). Commissioned (1884) to withdraw the scattered garrisons of the Sudan and effect the evacuation of the country. Shut up in Khartum by the insurgent Mahdi, Gordon bravely repelled the besiegers for over ten months; but two days before the arrival of a tardily dispatched British army under Gen. Wolseley, the town was betrayed and the heroic commander slain.

GOTHS, THE. Powerful ancient nation of the Germanic race, whose first known locality was the Prussian shore of the Baltic (about 335 B. C.). Early in the third century the Goths were settled at the mouths of the Danube; invaded Roman province of Dacia (222-235, 244-249); utterly defeated the Roman legions (250-251), slaying the emperor Decius; then conquered many Grecian towns. Ravaged coasts of Europe and Asia (269); defeated by Romans under Claudius II. (269); ceded province of Dacia (272) by Aurelian. Under their king, Alaric, fought unavailingly against Constantine the Great, but with fair success against the Romans under Valens (367-369). They now began to be distinguished as Visigoths and Ostrogoths,—Goths of the west and the east; the former inhabiting the Dacian province and banks of the Danube, the latter the shores of the Black Sea. The Visigoths, seeking protection of the emperor Valens against the Huns, about 200,000 of them were allowed to pass into Moesia (376). Many entered the Roman army, but a dispute arose, resulting in a battle near Adrianople (378), in which the emperor Valens was slain. About the middle of the fourth century, the Goths became converts to Christianity.

Ostrogoths. Part of the Ostrogoths, conquered by the Huns, whom they were compelled to aid, joined Attila in his famous expedition against Gaul, falling by thousands before their kinsmen, the Visigoths, at the battle of Châlons (451); following which they settled in Pannonia and were joined by the Ostrogoths, who had been admitted within the Roman empire on the coming of the Huns. Theodoric, their greatest ruler (476-526), fought successfully against the eastern emperor, Zeno, obtaining a grant of some of the richest provinces in the empire, becoming chief of the imperial guard and consul for the year 484; utterly defeated (493) Odoacer, king of Italy, and reigned over that country until his death (526); ruling, on the whole, wisely and to the advantage of his subjects. In 536 Belisarius entered Rome and, although invited by the Goths to become their king, held the city for his master, Justinian, emperor of the East; but neither he nor his successors then subdued the Goths. Totila (541-552), a noble Goth, was overcome in battle of Taginae by the imperial general, Narses (552). His successor, Teias, fought bravely, but was killed in battle (553). From this time the Ostrogoths, broken and dispersed by their misfortunes, disappear from history as a distinct nation.

Visigoths. The famous Alaric, king of the Visigoths, invaded Greece upon the death of Theodosius the Great (395), his retreat being purchased by a commission to govern Illyricum; invaded Italy (402), pillaging Rome in 410. His successor, Athaulf (410-415), withdrew from Italy into southern Gaul, crossing the Pyrenees into Spain about 412. Under Wallia (415-419), their power was extended over a large part of southern Gaul and Spain, and assistance was given to the Romans in their contests against the Vandals and Alani. In the battle against Attila at Châlons, Theodoric I. (419-451), son of the great Alaric, was slain. Euric (466-483) greatly extended the sovereignty of the Visigoths in both France and Spain; drew up a code of laws and introduced arts of civilization. But under his successors the Franks gained ascendency and under Theudis (531-548) the rule of the Visigoths was confined exclusively to Spain. Here they prevailed until 711, when their power was completely broken by the Saracens.

GRAHAM, JOHN, VISCOUNT DUNDEE, CLAVERHOUSE (1650?-1689). Scottish officer; noted for merciless severity toward the Covenanters in the south of Scotland, whom he defeated at Bothwell Bridge (June, 1679), killing 400 and torturing 1,200; was slain in the battle of Killiecrankie while successfully opposing the army of William and Mary under General MacKay.

GRANADA. (1) In 1319 the Moors at Granada, a city of southern Spain, were attacked by the Spanish army, under the regents Pedro and John of Castile. The Moors bravely defended their city and overpowered the enemy, both regents being slain. (2) On April 26, 1491, a Spanish army, led by Ferdinand, appeared before Granada and besieged it until November 25, when Abdallah, the Moorish king, was obliged to surrender.

GRANICUS. A small river near Troy in Asia Minor. Alexander fought his first battle here against the Persian forces, whom he defeated in 334 B. C.

GRANT, FREDERICK DENT (1850-). An American soldier, son of General Ulysses S. Grant; born at St. Louis, Mo. He served under Sheridan against the Indians (1873-1879); resigned from the army (1881); United States minister to Austria under Harrison; police commissioner of New York City (1894-1898). During the Spanish-American War was colonel of the 14th New York Infantry; brigadier general of U. S. Volunteers (1898); served in Porto Rico and the Philippines; commander of the Departments of Texas and of the Lakes (1902-1904), of the East (1904-1908), later of the Lakes; major general U. S. Army (1906).

GRASSE, FRANCOIS JOSEPH PAUL, COUNT DE (1722-1788). A French admiral who commanded the French fleet at the siege of Yorktown during the War of Independence. With a fleet of 29 vessels he landed at Chesapeake Bay (August 30, 1781), blockaded the James and York rivers, and repulsed an attack by the English fleet under Graves. He met an English fleet under Rodney off Santo Domingo (April, 1782), was defeated, and carried prisoner to London. He was charged with incapacity, court-martialed, and exonerated.

GRAVELOTTE (also St. Privat). August 18, 1870. During the Franco-German War the French, under Bazaine, met the German army, under William of Prussia, in a sharply contested battle at Gravelotte, in the province of Lorraine. The French held their own at Gravelotte, but a successful movement of the Germans at St. Privat, a neighboring town, forced the French to abandon all of their positions and retire to Metz, where they were subsequently blockaded.

GRAVES, THOMAS, LORD (about 1725-1802). An English admiral. During the American War of Independence Graves commanded a squadron in a contest with the French fleet under De Grasse (1781).

GREAT BRIDGE (December 9, 1775). Captain Fordyce, with his army of loyalists, were sent by Lord Dunmore to prevent Colonel Woodford reaching Norfolk, Va., and ultimately Suffolk, where the Americans had military supplies. The Americans met the British at the Great Bridge, nine miles from Norfolk, who did their best to check the advance of Woodford, but Captain Fordyce being slain, the British lost courage and fled in confusion. Colonel Woodford, being reinforced, proceeded to Norfolk without difficulty.

GREAT MEADOWS (May 28, 1754). The French and Indian War was precipitated by a skirmish at Great Meadows, in Virginia, when Washington, with a small force of men, fired upon and killed a number of Frenchmen under Jumonville.

GREENE, NATHANAEL, GENERAL (1742-1786). Noted soldier of the American Revolution; born at Patowomut, R. I. Appointed major general (August 9, 1776); served with especial distinction at Trenton,

Princeton, Brandywine, and Germantown. Became quartermaster general (1778). On October 30, 1780, succeeded General Gates as commander of the Army of the South, and succeeded in driving the English forces from all Georgia and the Carolinas except three coast towns. Retired to his Georgia estate (1785) and died there.

GREEN SPRING, or **CEDAR SPRING** (August 1, 1780). A detachment of British dragoons and riflemen under Captain Dunlap, were sent to capture Colonel Clark, who was working for independence in South Carolina. The armies met at Green Spring, near Spartanburg, and after a sharp engagement the British were defeated and driven back.

GRIDLEY, CHARLES VERNON (1845-1898). An American naval captain; born at Logansport, Ind. Served at Mobile Bay (1864) and in several capacities until in 1897 he was made captain and given command of the Olympia, flagship of the Asiatic Station. He directed his vessel at the battle of Manila Bay (May 1, 1898) so as to receive Dewey's commendation for skill and courage, especially as he was seriously ill while commanding in person. He was granted sick leave immediately, but died at Kobé, Japan, on his way home.

GRIERSON'S RAID (April 17-May 2, 1863). In order to cut the Southern railroad and destroy the Confederate bridges, Col. B. H. Grierson was sent on an expedition from La Grange, Tenn., to Baton Rouge, La. The column started on April 17 and arrived at Baton Rouge May 2, with a loss of only 24 men. During the journey 100 rebels were killed or wounded, 500 taken prisoners, almost 50 miles of railroad and telegraph destroyed, and 1,000 horses and mules taken.

GROCHOW (February 25, 1831). In a bloody contest at Grochow, a town near Praga, in Poland, the Poles, under Prince Michael Radziwill, forced the Russians, under General Diebitsch, to retreat. The former lost about 5,000; the latter about 10,000.

GROSS-GORSCHEN. See LUTZEN.

GROSS-JAGERNDORF (August 30, 1757). A battle at Gross-Jägerndorf, in Silesia, during the Seven Years' War, resulted in the defeat of the Prussians, under Marshal Lehwaldt, by the Russians, under General Apraxine.

GROUCHY (*groo-she'*), **EMMANUEL, MARQUIS DE** (1766-1847). French marshal; fought in Savoy, La Vendée, and under Moreau in Piedmont; prominent in all Napoleon's campaigns. Bourbon restoration caused his banishment and loss of rank; was among the first to offer his services to Napoleon when he returned from exile in Elba, and was made a marshal of France. Ordered to operate against Blücher and the Prussians after their defeat at Ligny, Grouchy refused the entreaties of his generals to leave Wavre and go to the aid of Napoleon at Waterloo; his absence from that famous battle being considered the cause of Napoleon's defeat. Proscribed under the Second Restoration, Grouchy spent four years in Philadelphia, Pa., returning to France in 1819, and was restored to his titles and estates.

GROVETON (August 29, 1862). During the Civil War in the United States, an indecisive battle was fought at Groveton, Va. The Confederates, numbering about 80,000, were led by Jackson and Longstreet. The Federals numbered about 50,000, and were led by Pope. Both armies fought desperately, and when the struggle ceased at night both parties rested on the field.

GUADELUPE-HIDALGO, TREATY OF (February 2, 1848). A treaty between the United States and Mexico at the close of the Mexican War. The American negotiator was Nicholas P. Trist of Virginia, chief clerk of the State Department. The treaty was proclaimed July 4, 1848. The Rio Grande was made the boundary for the east; and the Gila and Colorado were so followed in the west as to give New Mexico and Upper California to the United States. The United States agreed to pay $15,000,000, all the claims against Mexico under the conventions of 1839 and 1843, and claims of citizens of the United States against Mexico not to exceed $3,250,000. Under this clause 182 claims were allowed and 70 were rejected.

GUANTANAMO BAY (June 6-16, 1898). During the Spanish-American War, the Americans decided to convert the fortifications along Guantanamo Bay, 35 miles east of Santiago, Cuba, into a naval station. To this end a strict bombardment was begun on June 6. On the 10th a force of marines attacked and repulsed the Spaniards. During the 10 days in which the Americans were there, exposed to the fire of the enemy in ambush, their loss was about 22.

GUELPHS AND GHIBELLINES. Two great political parties which in the latter part of the Middle Ages distracted northern and central Italy with their wars and contentions. "Guelph" is thought to be derived from "Welf," the name of a princely family in Germany, powerful in the twelfth century, when it was a rival of the House of Hohenstaufen by whom the imperial throne was occupied. Henry the Lion, duke of Saxony and Bavaria, the most famous ruler of the House of Guelph, defied Frederick Barbarossa, but was finally deprived of nearly all his possessions (1180-1181). The origin of Ghibelline is uncertain. Traditionally it is believed to be a modification of Waiblingen, the name used as a battle cry under which the first Hohenstaufen emperor (Conrad III.) fought the battle of Weinsberg, when Welf VI., uncle of Henry the Lion, was defeated (1140). The names Ghibellines and Guelphs were used in Italy about the beginning of the thirteenth century. In general, the former upheld the imperial power in Italy, while the latter opposed the emperors. The Guelphs may be called the national party, and were composed of two factions,—the principalities and city republics, which contended for their provincial or municipal rights and privileges, and the Church, which endeavored to assert its independence of the emperors. The great stronghold of the Guelphs was Florence, with whom Bologna and Milan usually sided, while Arezzo, Pisa, and Verona were Ghibelline. Opposite sides were taken by the great Italian families, these sometimes varying in their allegiance, but the nobles of the more northern districts, inclining to the Ghibellines, while those of the central were Guelphs. When German emperors ceased to predominate in Italy, the contest became a mere struggle of rival factions; in 1334 the terms "Guelph" and "Ghibelline" were banned by papal censure.

HAARLEM (December 11, 1572-July 12, 1573). During the War for Independence in the Netherlands, the Spaniards laid siege to Haarlem, a town in Holland. Several assaults were made, but without success, until finally famine made its reduction inevitable. The surrender was followed by a heartless massacre of over 1,000.

HACHETTE (*ah-shet'*), **JEANNE LAINE** (1454-?). French heroine, who, at the age of eighteen, aided in defending Beauvais against Charles the Bold of Burgundy (1472), striking dead with a hatchet the standard bearer of the assaulting army, which so disheartened the assailants that they withdrew.

HAGUE PEACE CONFERENCES. (1) Nicholas II., czar of Russia, was the initiator of the First International Peace Conference designed to secure disarmament. The sessions were held at The Hague by invitation of Queen Wilhelmina, May 18 to July 29, 1899. One hundred delegates, representing 20 European, 4 Asiatic, and 2 American powers (Mexico and the United States) attended. Baron de Staal of the Russian delegation presided. Three great conventions, 3 declarations, and 6 resolutions were accepted. Arbitration, the keynote of the first great convention, established, first, the right of nations to offer mediation; second, a commission of inquiry to discover the facts of difference; third, the Permanent Court of International Arbitration, consisting of 4 members for each power, serving 6 years, to settle disputes between nations. The second convention adapted the Red Cross to maritime warfare; the third comprised a code of laws and customs of land warfare, including these prohibitions: explosives dropped from balloons (five years from date); projectiles diffusing suffocating or injurious gases (not accepted by United States and Great Britain); use of bullets which expand or flatten in the human body. (2) The second meeting was in session June 15 to October 18, 1907, with 256 members, representing 44 powers,—21 European, 4 Asiatic, and 19 American governments. Thirteen conventions, 1 declaration, and 7 resolutions were adopted; a Court of Arbitral Justice to consist of 15 judges living at The Hague was proposed, and an International Prize Court established. The topics discussed included declaration of war, rights of neutrals, naval warfare, private property at sea, forcible collection of debts, and disarmament. The corner stone of the "Palace of Peace," presented to the nations by Andrew Carnegie, was laid by this conference.

HAITI. Columbus discovered the island of Haiti in 1492, and four years later Bartholomew Columbus founded Santo Domingo, the first European town in the New World. The relentless taskmasters quickly exterminated the natives, and imported negroes from Africa to take their places as laborers, who soon formed by far the greater part of the mainland, but in the seventeenth century a colony of French buccaneers were

allowed to make their headquarters at the western end of the island, resulting in the ceding of that part to France by the Treaty of Ryswick (1697). There grew up a prosperous and wealthy French colony who would not allow civil rights to any portion of the colored population, which, encouraged by the reception given their appeals by the people of France, rose against their oppressors during the French Revolution, when there was much dissension among the white population. This insurrection broke out in 1791, and was notable for its bloody excesses. The freedom of the blacks was proclaimed in 1793 by the commissioners of the French Convention. The British invaded the island at this time but were expelled in 1798 by the blacks under Toussaint L'Ouverture. The eastern part of the island had three years previously been ceded by Spain to France, and this was now included by Toussaint, who within his sphere of authority reigned as dictator in practical independence until 1801, when a force under General Leclerc having been sent by Napoleon to subdue the island, Toussaint was captured and deported to France, where he died in prison, 1803. Other leaders filled his place, and in December, 1803, the French were finally expelled. Dessalines, the victorious general, declared Haiti independent and in 1804 assumed the title of emperor; but was assassinated in 1806. Christophe, a negro, then held for some years the northern part of Haiti, assuming the royal title in 1811; while to the south a mulatto republic was established by Petion. Christophe died in 1820, when Boyer, the successor of Petion, seized the power and then conquered the eastern part of the island, which Spain had reoccupied, but which had revolted and formed a republic. Until his overthrow in 1843, Boyer ruled the whole island (as president) with firmness and wisdom. In 1825 France recognized the independence of Haiti. In the east, the Republic of Santo Domingo was formed in 1844, while in the west strife for political ascendency between the blacks and mulattoes lasted many years. The negro president, Soulouque, in 1849 proclaimed himself emperor as Faustin I., and during his ten years of despotic rule more than once attempted to annex to his dominions the Republic of Santo Domingo. Early in 1859 the Republic was restored by the mulatto Geffrard, who retained control until 1867. Civil war raged in 1888-1889 between the generals Legitime and Hippolite, rival candidates for the presidency. The latter was victorious and, until his death in 1896, ruled with unlimited authority. His successor, Gen. Simon Sam, was president until forced to resign in May, 1902. Then followed civil war between Boisrond-Canal, head of the Provisional Government, and M. Firmin, Haitian Ambassador at Paris. The latter established a rival government at Gonaives, in the northern part of the island, but was overcome in October, 1902, and in December the army proclaimed General Nord president.

HALE, NATHAN (1755-1776). Revolutionary patriot; born at Coventry, Conn.; lieutenant (1775); captain (1776). In September, 1776, he entered the English lines at Long Island and New York, disguised as a Dutch school teacher, was detected and hanged as a spy. His last words were: "I only regret that I have but one life to lose for my country."

HALLECK, HENRY WAGER (1815-1872). Commander-in-chief of United States army (1862-1864); born in Westernville, N. Y.; graduated from West Point (1839); served during Mexican War; held various administrative offices in California; resigned from army (August 1, 1854), and practised law in San Francisco; re-entered army (August 19, 1861), as major general; commanded Department of Missouri, embracing Missouri, Iowa, Minnesota, Illinois, Arkansas, and western Kentucky, stopping contractors' peculations, training disorganized troops, dismissing "placemen," bringing order out of chaos (1861-1862); general in chief of the armies of the United States (1862-1864); chief of staff general army (1864-1865); successively commanded military divisions of the James, the Pacific, and the South until his death. His book, "Elements of Military Art and Science," was much used in Civil War as a manual for volunteer officers.

HAMPDEN, JOHN (1594-1643). English statesman and patriot. Resisted the court, both outside and inside Parliament; suffered persecution and imprisonment; mortally wounded at Chalgrove Field.

HAMPTON ROADS (March 8, 9, 1862). The naval battles which occurred in Hampton Roads are among the most famous in history, as they mark the change from the old to the new method of naval warfare. Upon the occupation of the Norfolk Navy Yard by the Confederates the Merrimac was reconstructed with ironclad sloping sides, and fitted with powerful guns. On March 8, 1862, as she descended the Elizabeth river commanded by Franklin Buchanan, her advance was opposed by the sloop Cumberland. In answer to the firing from the Cumberland, the Merrimac rushed headlong at her, ramming her prow and conducting a deadly fire at the same time. The Cumberland immediately sank with the entire crew. The Congress was her next victim, and after this victory the Merrimac withdrew. The following morning the Minnesota was sighted, grounded on a bar, and the Merrimac at once advanced but was confronted by the Monitor. After a sharp engagement the Merrimac was obliged to withdraw, pursued by the Monitor.

HAMPTON, WADE (1818-1902). American soldier and politician, born at Columbia, S. C. Although opposed to secession, he entered the Confederate army, raising and equipping a force called "Hampton's Legion"; served with distinction throughout the war; made lieutenant general in command of all Lee's cavalry (Aug., 1864). Governor of South Carolina (1877-1879); United States Senator (1879-1891); United States commissioner of railroads (1893-1897).

HANCOCK, WINFIELD SCOTT (1824-1886). American general; born in Montgomery Co., Pa.; graduated from West Point (1844); served in the Mexican War (1847); in Department of the West as quartermaster and assistant adjutant general (1848-1855); captain (1855); served in border troubles; chief quartermaster on Pacific coast (1859-1861); brigadier general of volunteers (1861) in the Army of the Potomac; in action at Williamsburg, Antietam, Fredericksburg, Chancellorsville, Gettysburg, where he repulsed the famous charge of Pickett and Pettigrew; in the Wilderness and at Petersburg; major general of volunteers (1862); brigadier general of regular army (1864); major general (1866); in command from 1866 to 1880 in Missouri, Dakota, and of the military division of the Atlantic; Democratic nominee for president (1880), but was defeated; one of the greatest of the Federal generals.

HANGING ROCK (August 6, 1780). After a battle of four hours, a large detachment of British and Tories were defeated by General Sumter, at Hanging Rock, on the Catawba river, in South Carolina.

HANNIBAL (247-183 B.C.). Famous Carthaginian general, son of Hamilcar Barca. At 26 he was the commander-in-chief of the Carthaginian army and fought during the Second Punic War. He undertook the subjugation of Spain, and during the progress besieged a Roman town, Saguntum, for 8 months. The refusal of the Carthaginians to give up Hannibal to the Romans brought on the Second Punic War. He crossed the Pyrenees and later the Alps and descended upon Rome from the north. The passage took 15 days in the face of great difficulties. He rested his 26,000 troops, then routed the Romans under Scipio, near the Ticinus, and again at the Trebia (218 B.C.); conquered Flaminius at Lake Trasimenus (217 B.C.); almost annihilated a Roman army under Varro at Cannæ (216 B.C.); was 15 years in Italy; recalled home to defend Carthage against Scipio; was defeated and fled after the battle of Zama; committed suicide (183 B.C.).

HANOVER COURT HOUSE (May 27, 1862). During the Civil War in the United States, a battle was fought at Hanover Court House, 17 miles north of Richmond, Va., between the Federals led by General Porter and the Confederates commanded by General Branch. Although the Federals were outnumbered they defeated their opponents.

HANSEATIC LEAGUE. A union of some of the towns in North Germany made for common defense and protection in the thirteenth century. It was begun by Lübeck uniting with Hamburg in 1241 and 1255; in 1259 with Rostock and Wismar against pirates; and in 1284-1285 by the union of Lübeck, Wismar, Rostock, Stralsund, and Greifswald against Denmark. The entire league at one time included eighty-five towns and was ostensibly formed for the protection of commerce, and was for many years the undisputed mistress of the Baltic Sea and the German Ocean. It declined rapidly in the fifteenth century.

HARDEE, WILLIAM JOSEPH (1815-1873). A prominent Confederate soldier; born in Savannah, Ga. Fought through the Atlantic campaign. After the war he became a planter at Selma, Ark.

HARLEM HEIGHTS (September 16, 1776). Small divisions of the British army which occupied New York City, attacked the Americans at Harlem Heights, near New York City, and although both American leaders were killed in the skirmish, the British were defeated.

HARMONY, DAVID BUTTZ (1832-). Rear admiral (retired) United States navy; born at Easton, Pa.; served during Civil War; chief of bureau of yards and docks (1885-1889); chairman lighthouse board

(1889-1891); rear admiral (March 26, 1889); commander-in-chief of Asiatic station (1892-1893); retired (June 26, 1893).

HARPER'S FERRY (September 15, 1862). On September 12, a detachment of Lee's army under Jackson crossed the Potomac at Williamsport, Md., and started south toward Harper's Ferry. The fortifications on Loudon and Maryland Heights were easily taken, and on September 15, after a brief bombardment, Colonel Miles surrendered Harper's Ferry with 11,583 men, 73 guns, 13,000 small arms, 200 wagons, and a large quantity of supplies.

HARRISBURG. Capital of Pennsylvania, on Susquehanna river. John Harris opened trading post (1726); town laid out (1785); incorporated as Harrisburg (1791); capital of state (1812); chartered as city (1860); Harrisburg Convention (1828) led to passage of high protective tariff bill of that year.

HARTFORD. Port of entry and capital of Connecticut. At head of navigation for large vessels on Connecticut river; 50 miles from Long Island Sound. The fort named "House of Hope," built by Dutch (1633), practically first settlement. Because of sectarian dispute, Newtown, Mass., colonists migrated and settled Newtown around the fort (1635) under Pastors Stone and Hooker. Name changed to Hartford after Hertford in England, the birthplace of Stone (1638); free men of Windsor, Hartford, and Wethersfield adopted famous "Fundamental Orders of Connecticut," the first written constitution adopted by a people organizing a government (1639); for which Hartford is frequently termed "Birthplace of American Democracy." Fort seized and Dutch expelled from Connecticut (1654); Hartford Convention met (1814-1815); capital of state until 1701, when honor was shared with New Haven; since 1875 sole capital. Population, 79,850 (1900); estimated 95,822 (1906).

HASDRUBAL (-207 B. C.). Punic general; brother of Hannibal. Fought for years against the two Scipios, on the whole successfully; killed on the banks of the Metaurus.

HASTINGS. Decisive battle of the world (1066) in which William the Norman defeated Harold the Saxon; founding the great Anglo-Norman dynasty from which arose the British Empire. William claimed that the crown had been promised to him by Edward the Confessor; he tricked Harold into an oath to support him; Harold broke the oath and became king. The Normans were greatly in advance of the Saxons in war, economics, and architecture; the discipline of their fighting men was superb; that of the Saxons very poor. Both were equally brave. The vast Norman host landed; defeated the Saxons at Hastings in Sussex; bringing into England the virile Norman blood and Norman civilization. William erected Battle Abbey, where King Harold fell.

HAVELOCK, SIR HENRY (1795-1857). English soldier; born at Bishop-Wearmouth, Durham. Served with distinction in Afghan and Sikh wars; invaded Persia. Upon outbreak of the Indian Mutiny (1857), hastened from Allahabad to relief of Cawnpore, arriving there too late to prevent a massacre. Pushing on to Lucknow, after numerous victories the Residency of that city was gained, Sept. 25, 1857; but Havelock was in turn besieged, holding his own until rescued by Sir Colin Campbell, Nov. 19, 1857. Five days later General Havelock died; but in England, before news of his death reached there, he was made a K. C. B. and a baronet. The rank and pension were given to his widow.

HAW (February 25, 1781). A force of Americans under Lee and Pickens completely surprised Colonel Pyle and a band of Loyalists near the Haw, in Orange County, Va. A few escaped but most were killed or wounded. The Americans did not lose a man.

HAWKE, EDWARD, LORD (1705-1781). English admiral; born in London; fought successfully against the French, becoming famous for his victory over Marshal Conflans in Quiberon Bay (1759). Created K. C. B. in 1747; appointed vice admiral of Great Britain and first lord of the admiralty, 1765; raised to the peerage, 1776.

HAWKINS, SIR JOHN (1532-1595). English naval commander; born at Plymouth; made several voyages to the West Indies; first Englishman to engage in the slave traffic (1562); member of Parliament (1572); treasurer and comptroller of the Royal navy; took part as rear admiral in defeat of Spanish Armada (1588), winning knighthood for his bravery; with Drake, was a founder of the fund for disabled seamen known as "the chest at Chatham"; erected "Sir John Hawkyns Hospital" at Chatham, 1592.

HAWLEY, JOHN MITCHELL (1846-). Rear admiral (retired) United States navy; born at Northampton, Mass.; graduated United States Naval Academy (1868); for services during Samoan hurricane (1889) while executive officer of Nipsic, received thanks of state of Massachusetts; first officer to establish recruiting stations in the West; during war with Spain had charge of all recruiting stations in the West and Southwest, and enlisted about 1,900 men. Received (1898), from Illinois naval militia, a jeweled sword; inspector 5th lighthouse district at Baltimore (1902-1904); commander-in-chief of South Atlantic squadron (November, 1904-January, 1905); rear admiral and retired (July, 1907).

HAY-PAUNCEFOTE TREATY (1901). Between United States and Great Britain, represented by John Hay and Lord Pauncefote, respectively; signed Nov. 18, ratified by U. S. Senate Dec. 16, 1901. Abrogated the Clayton-Bulwer Treaty; assured to United States sole control of an Isthmian canal and sole right of maintaining its neutrality; the United States to adopt practically the same rules regarding equal rights of all nations in navigation of the canal as those governing navigation of Suez canal; no change in sovereignty of territory traversed by canal to alter principle of neutrality nor equal rights of all nations to enjoy benefits of the canal.

HEBERT (*a-bair'*), **JACQUES RENE** (1755-1794). Politician and journalist of the French Revolution; born at Alençon; famous as the editor of *Le Père Duchesne* (1790-1794), a rabid revolutionary journal. As a member of the Revolutionary Commune, approved September massacres of 1792. Substitute procureur for the Commune, Dec., 1792, by whom he was presented with a civic crown. Insulted Marie Antoinette at her trial. Denounced Robespierre (1794), who caused his arrest and execution.

HELENA (July 4, 1863). While Grant was besieging Vicksburg, Miss., he recalled the troops from Helena, Ark., but left 3,800 men under Gen. B. M. Prentiss to hold the place. On July 4 the Federals were surprised by 8,000 Confederates under Sterling Price and T. H. Holmes, and the latter were defeated with a loss of 2,111. Two other assaults were also made but were repulsed with heavy losses to the Confederates.

HELMET. A covering used to protect the head in warfare, made wholly or in part from metal. In use from the earliest times, in many different forms. The simplest, that in the shape of a close fitting skullcap, is represented on the Assyrian monuments. A neck protection was sometimes provided. Elaborate helmets were worn by Greeks of the Homeric age. Bell-shaped helmets, sometimes with wing-like projections, were worn by the Etruscans. Under the later empire the Greek style of helmet was worn by the Romans, before which a plain skullcap, strengthened by cross-bands of iron, with a neck guard, was used. A skullcap with the figure of a boar on top was apparently used by the Anglo-Saxons. The Franks had no protection for the head. Conical helmets, with a straight piece descending in front to protect the nose, are shown in the Bayeux tapestry. Those in vogue from the twelfth century to the fourteenth century were cylindrical in form, covering the head and a part of the neck, with round openings through which to see and breathe. Being very heavy, they were not put on until the moment of conflict, and only when the knights fought on horseback. In the fourteenth century they were largely discarded by western knights for the lighter bascinet. The Saracens at the time of the crusades wore light globular iron helmets, richly ornamented and adorned with plumes. Helmets naturally lost their utility when firearms became generally employed, those still in use being really more ornamental than of practical benefit. Continental heraldry shows a great variety of helmets. The forms used in English heraldry are as follows:—

I. Helmet of the king and princes of royal blood; full-faced, composed of gold, the visor divided by six projecting bars.
II. Helmet of a duke or marquis; steel, with five gold bars.
III. Helmet of earls, viscounts, and barons; set in profile, silver adorned with gold, having five bars.
IV. Helmet of knights and baronets; full-faced, visor thrown back without bars, steel.
V. Helmet of esquires; profile, steel, visor closed. No woman save the sovereign may have a helmet placed over her coat of arms.

HELVETII. A Celtic people who probably occupied the region now the western part of Switzerland. The first mention of them is of their defeat of a Roman army, 107 B. C. They accompanied the Cimbri on

their invasion of North Italy in 101 B. C. But their attempted irruption into Gaul, repulsed by Caesar, is the great event of their history. This occurred at Bibracte (modern Mont-Bewray, in Burgundy), the remnant returning to their country and becoming subject to the Romans. The Helvetii suffered another catastrophe in the commotions following the death of Nero. Having remained faithful to Galba, Caecina, a general of Vitellius, attacked them, giving them over to the rapacity of his legions. As a distinct people they scarcely afterwards appear.

HEMPHILL, JOSEPH NEWTON (1847-). Rear admiral United States navy; born at Ripley, O.; graduated United States Naval Academy (1866). Served on different duties and stations; during Philippine outbreak was present at Manila, and at Venezuela during Andrade-Castro revolution; chief of staff of North Atlantic fleet (1902-1903); captain New York Navy Yard (1904-1906); president of board of inspection and survey (1906-1907); commanding Philippine squadron (May, 1907).

HERCULANEUM. Ancient city of Italy, at the northwestern base of Mt. Vesuvius. Founded by Oscans, but apparently a foothold was gained by the Etruscans. With the rest of Campania, it was conquered by the Samnites, later falling into the hands of the Romans. A violent earthquake seriously injured the city in 63, and, with Pompeii and Stabiae, it was buried in 79 by the memorable eruption of Vesuvius. Owing to later eruptions, it now lies at a depth of from 30 to 120 feet below the surface. The two large villages of Portici and Resina are above it, on the modern surface, rendering excavation rather difficult. The value and interest of the art relics of Herculaneum far exceed those found at Pompeii, and have been conveyed to the museum at Naples.

HERKIMER, NICHOLAS (1715-1777). An American soldier. Served as lieutenant of militia in the French and Indian War; was in command of Fort Herkimer when the French attack on German Flats was made (1758); appointed a colonel of militia (1775); in 1776 became brigadier general of the New York militia. His most noted feat was the relief of Fort Stanwix when besieged by Colonel St. Leger after Ticonderoga had fallen into the hands of Burgoyne's army (1777); later served in the indecisive battle of Oriskany, where he was mortally wounded. A monument was erected to his memory in 1884 on the field of Oriskany.

HESSIANS. Soldiers of the Landgrave of Hesse and other petty German states hired by Great Britain to fight against the Americans in the Revolutionary Wa.

HIGGINSON, FRANCIS JOHN (1843-). Rear admiral (retired) United States navy; born at Boston; graduated United States Naval Academy (1861); served during Civil War; commanded naval rendezvous, Boston (1874-1875); lighthouse inspector, 5th district (1880-1882); captain of yard, Mare Island Navy Yard (1894-1895); New York Navy Yard (1896-1897); during Spanish War commanded the Massachusetts and for "eminent and conspicuous conduct in battle" during that war was advanced three numbers in rank; chairman of lighthouse board (1898-1901); rear admiral (March 3, 1899); commander-in-chief of North Atlantic fleet (1901-1903); commandant navy yard, Washington (1903-1905); retired (July 19, 1905).

HILLABEE TOWNS (November 18, 1813). Hearing that Bill Scott, who commanded the Indians at Talladega, was among the Hillabees, in Alabama, General Cocke ordered General White to march against them. White did not know that the Hillabee tribes were friendly, and with his men entered the Indian villages and razed them to the ground. At one place 60 warriors were slain, and over 200 taken as prisoners to Fort Armstrong.

HOBKIRK'S HILL (April 25, 1781). The Americans under Greene were defeated at Hobkirk's Hill, near Camden, S. C., by an English and Tory force under Lord Rawdon. Also known as the second battle of Camden.

HOBSON, RICHMOND PEARSON (1870-). American naval constructor; born in Greensboro, Ala. In the war with Spain he sank the collier Merrimac across the entrance to Santiago Harbor (June 3, 1898) to "bottle up" Cervera's fleet. Raised and refitted many of the Spanish war ships; naval constructor (1898); captain (1901); resigned (1903). In 1906 he was elected to Congress from Alabama.

HOCHKIRCHEN (October 14, 1758). The Austrians, led by Count Daun, took the Prussian camp at Hochkirchen, in Saxony, by surprise, and seized the artillery. The Prussians, under Frederick the Great, hastily retreated toward Bautzen, with a loss of 9,000 men, besides much of their equipment.

HOCHST (June 20, 1622). The Imperialists, under Tilly, overtook the Palatinate troops, under Christian of Brunswick, at Hochst, a town near Frankfort, in Germany, and completely routed them.

HOCHSTADT. The French, led by Moreau, defeated the Austrians at Hochstädt, in Bavaria, June 19, 1800. See also BLENHEIM.

HOFER, ANDREAS (1767-1810). A patriot leader of Tyrol. Born at Sankt Leonhard, in the valley of Passeier, Nov. 22, 1767; commanded a body of sharpshooters against the French on Lake Garda (1796); in 1805 opposed Ney in the valley of Passeier and after the ceding of Tyrol to France, by the Peace of Pressburg, was chosen as one of the secret envoys to Vienna, sent to represent to the archduke John the sufferings of the people and their desire to be reunited with Austria. This proved of no avail and Tyrol was made part of Bavaria. The Tyrolese then revolted, with Hofer as their leader, the Bavarians being defeated in every battle and forced to evacuate the Tyrol. The Treaty of Vienna resulted in another invasion by the French and Bavarians, and Hofer was forced to flee to the mountains. January 28, 1810, he was betrayed to the French, taken to Mantua, given a summary trial, and by order of Napoleon was sentenced to be shot.

HOHENFRIEDBERG (June 4, 1745). During the War of the Austrian Succession, the Saxons were attacked and defeated by Frederick the Great at Hohenfriedberg, in Silesia. The Prussians then turned upon the Austrians, coming to the assistance of the Saxons, and routed them.

HOHENLINDEN (December 3, 1800). At Hohenlinden, a village of Bavaria, the Austrians, led by Archduke John, were defeated by Moreau, commanding the French and Bavarians.

HOLLY SPRINGS. On December 20, 1862, after the departure of Grant, a Confederate force under Van Dorn dashed into Holly Springs, compelled the garrison to surrender, and captured an immense quantity of Grant's supplies.

HOLY ALLIANCE, THE. League formed, after the fall of Napoleon, by the sovereigns of Russia, Prussia, and Austria. The participants in the alliance were "to take for their sole guide the precepts of that Holy Religion, namely the precepts of Justice, Christian Charity, and Peace." The text of the alliance was worked up by Alexander I. of Russia, and was signed at Paris, September 26, 1815. All the governments of Europe except England, which had declined, and Rome, which had not been invited, subsequently joined the alliance, though it is questionable if any of the participants in the treaty except Alexander took it seriously. Some of the articles of the document were: (1) That the contracting monarchs were to aid one another in the protection of religion, peace, and justice. (2) That the Christian religion was to regulate the relations between the contracting governments, and between subjects of these governments. (3) That any power choosing to accept the principles of the covenant should have the right of admission to the alliance. The most noteworthy result of this union was the Monroe Doctrine brought about by the attempt of the alliance to extend its influence into the New World. Aside from this it accomplished little, and after the death of Alexander (1825) the alliance gradually lost authority until, in 1854, the war of Russia against France, England, and Turkey brought about its complete dissolution.

HOOD, JOHN BELL (1831-1879). American Confederate soldier; born at Owingsville, Ky. Led a division at Gettysburg, Chickamauga, and took part, rather unsuccessfully, in several battles against Sherman. His continued failure caused him to be relieved of his command (1865).

HORNET—PEACOCK (February 24, 1813). Lawrence, in command of the Hornet, fought a naval battle in West Indian waters with the English boat Peacock commanded by Peake. The Peacock was completely defeated and destroyed, sinking before all her survivors could be saved.

HORNET—PENGUIN (March 23, 1815). While coasting along the Cape of Good Hope, the United States sloop-of-war Hornet encountered the British brig Penguin, and after a short battle the latter was captured and sunk. The British frigate Cornwallis sighted the Hornet soon after this engagement, and the Hornet's crew were obliged to throw the guns and stores overboard to avoid capture.

HORSESHOE BEND (March 27, 1814). The greatest blow to the Creek tribes was their defeat at Horseshoe Bend, in Alabama. General Jackson led the whites, 2,000 strong, including Indian allies, and in a short time the Creeks were surrounded. The battle raged until evening, when the Indians with Weathersford, their chief, surrendered.

HOWE, SIR WILLIAM (1729-1814). British soldier in the American War of Independence; led the British at Bunker Hill; succeeded General Gage (1775); led at Long Island (August 27, 1776), White Plains (October 28, 1776); captured Forts Washington and Lee; fought Brandywine (September 11, 1777), and occupied Philadelphia. Resigned and was succeeded by Sir Henry Clinton.

HOWELL, JOHN ADAMS (1840-). Rear admiral (retired) United States navy; inventor of a fly wheel torpedo, disappearing gun carriage, and an amphibious vehicle now under trial; originated gyroscopic steering torpedoes, etc. Born at Bath, N. Y.; graduated United States Naval Academy (1858); served in Civil War; president of steel board (1891-1894); commandant navy yard, Washington (1893-1896), League Island Navy Yard (1896-1898); commander-in-chief of European squadron (February-April, 1898); commanded northern patrol squadron (April-October, 1898); rear admiral (August 10, 1898); president of naval examining and retiring boards (1898-1902); retired (March 16, 1902).

HOWISON, HENRY LYCURGUS (1837-). Rear admiral (retired) United States navy; born at Washington; graduated United States Naval Academy (1858); present at many important engagements during Civil War; commanded Pacific squadron (1886); president of steel inspection board (1888-1890); commandant Mare Island Navy Yard, Cal. (1893-1896), navy yard, Boston (1897-1899); rear admiral (September 30, 1898); commander-in-chief of South Atlantic station until retirement (October 10, 1899).

HUBBARDTON (July 7, 1777). When General Burgoyne, with an army of 7,500 men, marched south from Quebec to recapture the points which the Americans had taken, he found that they had already been obliged to abandon many places on account of inadequate forces. At his approach, the garrisons at Crown Point and Ticonderoga retreated. St. Clair and the small force of Americans who had occupied Ticonderoga, fled toward Skenesborough (Whitehall, N. Y.), pursued by the British. At Hubbardton, Vt., the two armies met, and after an obstinate battle the Americans fled. The capture of Ticonderoga by the British was an important step in their plan to gain New York.

HUDSON, HENRY (? -1611). Date of birth and early life unknown. First heard of (1607) as commander of the Hopeful in quest of northeast passage to the Spice Islands, in which he touched coasts of Greenland, Spitzbergen, and went as far north as 80° 23′ before returning to England. In another voyage reached Nova Zembla and for Dutch East India Company sailed (1609) in the Good Hope and the Half Moon to try for the Northeast passage. Discovered Sandy Hook and explored Hudson river as high as Albany. Sought the northwest passage (1610), reaching the strait now bearing his name; passed into Hudson Bay; crew mutinied at privations (1611); bound Hudson, throwing him into a small boat with his son and seven faithful men, none of the party being heard of again.

HUNDRED DAYS (March 20 to June 22, 1815). The period of Napoleon's second reign as French emperor, lasting from his entry into Paris from Elba until the resumption of power by Louis XVIII. Napoleon's abdication followed quickly upon the defeat at Waterloo (June 15, 1815).

HUNDRED YEARS' WAR. The long series of wars waged between England and France from 1337 to 1453. While there was not continuous war, there was not lasting peace. The chief events were: Crécy (1346), Poitiers (1356), Agincourt (1415), and the raising of the siege of Orleans by Joan of Arc (1429). Continuous attempts to gain French crown and territory.

HUNKER, JOHN JACOB (1844-). Rear admiral (retired) United States navy; born at Pittsburg; graduated United States Naval Academy (1866); during war with Spain, organized and commanded transport fleet and convoys assembled (June, 1898) at Tampa, Fla., to carry Shafter's army to Santiago, Cuba; commanded expedition which captured Nipe Bay, Cuba (July 21, 1898); rear admiral (June 6, 1906).

HUNS. An ancient nation (or collection of tribes) of Turko-Tatar affinities, who repeatedly invaded the Roman dominions, bringing the empires of both the East and the West to the verge of destruction. They overran the Chinese Empire about 200 B. C., but during the reign of Wu-ti (141-87 B. C.) their power was much broken. Ultimately they separated into two distinct camps, one of about 50,000 families going southward, the other attempting to retain its original place, but the most warlike finally going west and northwest. For a while a large number were established on the bank of the Volga; then, probably early in the fourth century, overcame the Alani, a people dwelling between the Volga and the Don. Their next victory was over the Ostrogoths, whom they completely subdued and held in servitude. The Visigoths, to escape the fate of their brethren, appealed to the emperor Valens (376) for permission to settle south of the Danube, as auxiliaries of the Romans. During the period of the early migrations the Huns were extending their power over the neighboring German tribes, without attempting any attack on the Roman Empire. But so much did they increase in power that in the reign of Theodosius the Younger their sovereign, Rugilas, or Roas, was paid an annual tribute to secure the Empire of the East from further injury. Rugilas died about 434 and was succeeded by his nephews, Attila and Bleda, the latter being put to death by his brother about 444. Attila, the most renowned leader of the Huns, carried his arms as far as Gaul, where he was successfully encountered by the Romans and Visigoths. The next year Attila ravaged Italy, Rome itself being saved, it is said, only by the awe inspired in the barbarian conqueror by Leo. I., its bishop. The power of the Huns was broken with Attila's death, about 453. Many joined the Roman armies, others aided fresh hordes of invaders from the east and north in their attacks upon the empire, and gradually the race was absorbed.

HUNYADY, JANOS (about 1387-1456). The national hero of Hungary. To him more than to any one man Europe owes it that the Turks did not extend their conquests. He was defeated at Varna (1444) and again at Kossovo (1448); defended Belgrade heroically (1456).

HUTCHINS, CHARLES THOMAS (1844-). Rear admiral (retired) United States navy; born at Kingston, Pa.; graduated United States Naval Academy (1866); served on sailing-ship Relief on voyage to France with supplies for starving French (1871); watch officer and navigator, flagship Lancaster, European station, at bombardment of Alexandria, Egypt, and commanded fleet which landed a party on shore for five days; personally thanked by king of Sweden and Norway; present at coronation of the czar at Kronstadt (1884); commanded U. S. S. Buffalo, carrying recruits to China and training landsmen (1900-1902); commanding new U. S. battleship Maine (1904-1905). Retired (1905).

HYKSOS. A dynasty of Egyptian kings, known also as the Shepherd Kings. Of their origin nothing positive is known, the only certainty being that before conquering Egypt they had founded an empire in Syria. The date of their conquest of Egypt is very doubtful,—perhaps 2100 B. C. A strong fortress on the northeastern frontier of the delta in the Sethroite nome, called Avaris (Egyptian, Hatwaret), was built and strongly garrisoned by the Hyksos, to maintain the connection between the Syrian and Egyptian provinces. The conquerors readily adapted themselves to Egyptian ways, the kings assuming Egyptian names and probably leaving the old administration untouched. There were apparently six kings of this dynasty, who resided in Memphis, Avaris, and perhaps Heliopolis, the Delta being under their direct administration, while the country above Memphis was left to tributary princes of the old nobility, a proceeding which was fatal to their dominion. One of the three princes of Thebes named Sqenen-re started a revolt which lasted many years, extending through the reigns of two short-lived Theban princes (Kames and Snekhten-re). In the war of independence the princes of the nomes north of Thebes apparently did not join the national cause, and were annihilated. The Pharaohs of the foreign dynasty seem to have been almost completely expelled when Amasis I. (Ahmose, 1684 B. C.) ascended the throne, but in their last stronghold, Avaris, they had sustained a long siege. In the third or fourth year of Amasis Ahmose Avaris fell and the surviving inhabitants were distributed as slaves.

IBERVILLE (*e-bayr-veel'*), **PIERRE LE MOYNE SIEUR D'** (1661-1706). A French-Canadian soldier, explorer, and founder of Louisiana. One of the ten famous sons of Charles le Moyne of Montreal. Participated in the expedition for the destruction of Schenectady (1690); captured and demolished the

stone fort at Pemaquid, built to protect New England (1696); destroyed St. John's, Newfoundland, also all British settlements on the island. Sailed from France (1699) to the gulf of Mexico, in quest of the mouth of the Mississippi, which, being successful, built Fort Biloxi, and later Mobile. He died in France.

ICARIANS. A communistic society founded by Cabet. In 1847 Cabet acquired some land in Texas and in 1848 sixty-nine persons set out for the colony but were unable to stand the climate. After a few months they returned to New Orleans, where they were joined by Cabet and 400 others. In 1849 Cabet and 300 followers went to Nauvoo, Ill., and founded a colony on land deserted by the Mormons. In 1856, in consequence of dissensions, Cabet and those who sided with him were expelled. In 1860, through financial distress, Nauvoo was abandoned and a new settlement was founded in Iowa. After some years of prosperity the society split into two factions in 1880. Some of the Iowa community founded the Icaria Speranza on a business basis in California. In 1895 the Iowa community was dissolved.

ILOILO (February 11, 1899). With a small force of Americans General Miller was sent to take possession of Iloilo, an important seaport on the island of Panay, in the Philippines. When the city was reached, however, the Spanish general had already surrendered to the insurgents, but the place was taken without difficulty by General Miller.

IMPERIAL FEDERATION. A plan to unite Great Britain, Ireland, and the colonies more firmly and intimately. The league was formed in 1884.

INCAS. Aboriginal Indians of Peru, possessed of a high degree of civilization. The government was very despotic, extending "not only to the visible acts, but to the private conduct, the words, the very thoughts" of the subjects, who were "not allowed to be happy or miserable in any way but that established by law." Under the reign of Huayna Capac, at the period of the discovery of Columbus, the Inca empire attained its greatest power and extension. After his death a long and desolating war of succession ensued between his two sons, Huascar and Atahualpa. The latter had been successful and was on his way to Cuzco, the capital of the empire, when he was met by Pizarro, the Spanish conqueror. Atahualpa, desiring peace, made a friendly visit to Pizarro, was taken prisoner and his people massacred. The inca offered a very large ransom, to be paid in two months. After the partition of this treasure, Atahualpa was murdered, by order of Pizarro, in the square of Cajamarca, Aug. 29, 1533. In 1536 the nominally reigning inca, Manco, escaped from his Spanish masters and organized a revolt, but was finally defeated.

INDIAN CREEK MASSACRE. In May, 1832, the inhabitants of Indian Creek, in Illinois, were surprised by a party of Indians, and 15 persons massacred.

INDIAN WAR, KING PHILIP'S. Between the colonists and the Wampanoags of Rhode Island (1675), Philip, son of Massasoit, acting as chief. After two years' desperate fighting, and with great loss on both sides Philip, with his wife and son, were captured. Shortly after he was killed at his home at Mt. Hope, near Bristol, R. I. Many of the Indian prisoners were sold as slaves to South America and the West Indies, among them Philip's wife and son. With the death of Philip, the Indians became discouraged, and southern New England never again stood in fear of these once powerful tribes.

INGERSOLL, ROYAL RODNEY (1847-). Rear admiral United States navy; member (1908) of general board, Washington, D. C.; born at Niles, Michigan; graduated United States Naval Academy (1868); served as naval officer in all parts of the world; during war with Spain commanded U. S. S. Supply; author of "Text-Book of Ordnance and Gunnery," "Elastic Strength of Guns," "Exterior Ballistics."

INKERMAN (November 5, 1854). The Russians, 50,000 strong, attacked Inkerman, a seaport of the Crimea held by about 8,000 British troops. The besiegers were kept at bay until French reinforcements relieved the British, when the Russians retreated with a loss of about 9,000 men.

IONIANS. A people who migrated from southern Greece to Asia Minor, probably in the eleventh and tenth centuries B. C. Twelve important cities, in historical times, claimed to be Colophon, Ephesus, Erythrae, Lebedus, Miletus, Myus, Phocaea, Priene, Samos, Teos, Clazomenae, Chios, afterwards Smyrna (of Aeolic origin) joined the league. A temple of Poseidon on the promontory of Mycale, called the Panionium, was their common sanctuary, and here the national assembly was held. Ionia was the most advanced and most prosperous part of Greece during the eighth, seventh, and sixth centuries B. C. About 560 B. C. the Ionians were conquered by Croesus; in 545 by Harpagus, general of Cyrus. They revolted from the Persians in 500-499, but in 494 were again subdued. By the defeat of Xerxes they became free to join Athens in a league, formed in 476, in which they finally became her subjects. In 404 this league was dissolved by the defeat of Athens in the Peloponnesian War, but the alliance was renewed in 378 and continued to 357 B. C. Except for this renewal, the Ionian cities were independent in government until merged in the kingdom of Alexander and his successors. Ultimately they passed under Roman rule, forming a part of the Empire of the East, and have now been under Turkish dominion for centuries.

IRONSIDES. Originally applied to Cromwell, this name was also given to his famous regiment of 1,000 horse, recruited from the hardy God-fearing yeomen of the eastern counties, who continually distinguished themselves,—scattering Prince Rupert's cavalry at Marston Moor, at Naseby converting a rout into a decisive victory, etc.

ISLAND NO. 10 (April 7, 1862). During the Civil War, Island No. 10, in a bend of the Mississippi river, about 10 miles south of New Madrid, Mo., was an important stronghold of the Confederates. On March 16th the Federal fleet, commanded by Foote, laid siege to the place and for several weeks kept up an active bombardment. At the same time, Pope was at work making a canal from the Mississippi to New Madrid, which would allow vessels to reach the town without passing the island. On April 7 the Confederates were surprised to find themselves surrounded by boats and troops, and, resistance being useless, they surrendered. Without the loss of a man the Federals forced the surrender of almost 7,000 men and took possession of immense quantities of stores, arms, and ammunition.

ISSUS. (1) 333 B.C. The Macedonians, under Alexander the Great, encountered the Persians, under Darius, at Issus, in Asia Minor, and gained a complete victory. The Persian army consisted of 600,000 men; while the Macedonians numbered only 30,000 men. (2) In 194 Issus was the scene of a struggle between Severus and Niger, in which the latter was defeated with the loss of 20,000 men, and he himself was slain.

ITALIANS (Massacre of, at New Orleans; March 14, 1891). Eleven Italians confined for the murder of chief Hennessy, in the parish prison, New Orleans, were massacred. Six of them had just been acquitted by jury trial.

ITHOME (743 B. C.). At the opening of the Messenian Wars, Messenia was invaded by the Spartans. The Messenians fled to their fortifications on the mountain of Ithome, which they held for 20 years, and then were obliged to evacuate. The Spartans laid every town in ruins, and the Messenians who would not submit to Spartan rule were exiled.

IUKA (September 19, 1862). The headquarters of the Federal army of the Tennessee were at Corinth, Miss. In September the Confederates under Van Dorn and Price appeared in the vicinity, and on the 13th Price captured Iuka, a short distance southeast of Corinth. Two detachments led by Rosecrans and Ord were at once sent to attack Price, but their plans miscarried and on September 19 Price attacked Rosecrans. After a battle in which the latter lost some of his artillery and 790 men, Price withdrew.

IVRY (March 14, 1590). At Ivry, a town of northwest France, the Huguenots, under Henry IV., gained a brilliant victory over the Catholics, under the duc de Mayenne, during the Eighth Civil War.

JACKSON (May 14, 1863). After the battle at Raymond the Federals under McPherson and Sherman moved toward Jackson, Miss. On May 14 they encountered the Confederates led by Joseph E. Johnston on their way to reinforce Pemberton at Vicksburg. At the end of the engagement which followed, Johnston was obliged to retreat toward Canton, while the Federals entered Jackson.

JACKSON, THOMAS JONATHAN (STONEWALL) (1324-1863). A famous American soldier; born Jan. 21, 1824, at Clarksburg, West Virginia; prominent as a Confederate officer during the Civil War,—known as "Stonewall Jackson." Became major general, September, 1861; captured Harper's Ferry (1862) with 11,500 prisoners. He was wounded through a mistake of his own men, his party being taken for Federal cavalry. He died May 10, 1863.

JAFFA (anciently known as Joppa). Jaffa, a seaport of Syria, was taken by Napoleon in 1799, and later, in the same year, captured by the British.

JAIL DELIVERY AT PARIS. September 2-7, 1792. During the French Revolution Paris was for a time at the mercy of the mob. All persons suspected of assisting the royal cause were thrown into prison, and on September 2 the massacre began under the direction of Marat. Day and night the slaughter continued without interruption; without any distinction of class, people were dragged from the jails and put to death without trial. The number who lost their lives at this time is variously estimated at from 4,000 to 10,000.

JAMESON, LEANDER STARR (1853-). A Scottish physician and soldier. Educated at London University; practised at Kimberley, Cape Colony. His association with Cecil Rhodes led to his appointment as Administrator of Rhodesia in 1891, under the British South African Company, holding the position until his invasion of the Transvaal (1895), when he was defeated at Krugersdorp, and surrendered to the Boers. (See "Jameson's Raid.") He was brought to England and sentenced to fifteen months' imprisonment for an infringement of the foreign enlistment act (1896); released in seven months owing to illness; served in the Boer War (1899-1900); elected to the Cape Legislative Assembly for Kimberley (1900); leader of the Progressive party after death of Cecil Rhodes; premier of Cape Colony (1904-1908). Director in many of the important South African companies.

JAMESON'S RAID (Transvaal, South Africa). An appeal for help from Uitlanders in Johannesburg was received by Dr. Leander S. Jameson, who, on December 29, 1895, crossed the frontier with a force from Pitsani Pitlogo. The next day Sir Hercules Robinson telegraphed Dr. Jameson to retire. On December 31, Dr. Jameson's party, outnumbered and without resources, were defeated by the Boers near Krugersdorp, and after a fight at Vlakfontein on January 2, 1896, surrendered conditionally. It is held by some that the expedition was not intended to upset the native government, but to obtain documentary evidence believed by Cecil Rhodes to be in existence concerning an alliance between the Transvaal Government and Germany. Dr. Jameson and other prisoners were handed over to Sir Hercules Robinson and taken to England, where they were tried and declared guilty of offenses under the foreign enlistment act. A new trial was appealed for by the defendants. Dr. Jameson was sentenced to imprisonment without hard labor for fifteen months, but was released on December 2, 1896, because of illness.

JANIZARIES or **JANISSARIES.** This Turkish military force was first instituted by Orkhan (1326-1359), the son and successor of Othman (founder of the Ottoman Turkish Empire), who levied a systematic tribute of young children from conquered Christian people. These tribute children were trained under Mohammedan guardianship and with Christian captives taken in war and Turkish subjects who were attracted by the special privileges offered formed a special corps of picked troops, of many nationalities, which became the bulwark of the empire and a dictatorial power. After 1360 the corps was more perfectly organized by Amurath I., its strength raised to 12,000. The drafting of Christian children and captives ceased after the sixteenth century, and the corps was recruited by voluntary enlistment. The Janizaries were composed of two classes, one a standing force numbering from 25,000 to 100,000, garrisoned in Constantinople and the chief towns; the other, called "jamaks," a trained militia numbering from 300,000 to 400,000, scattered throughout all the towns of the empire. The Janizaries proper were divided into regiments (ortas). The aga was at the head of the whole force, his powers extending to life and death. In times of peace the Janizaries acted as a police force. They served on foot, generally forming the reserves of the Turkish army, and were famous for the "wild impetuosity of their attacks." From them was formed the sultan's bodyguard. Eventually they became very unruly, their history abounding in conspiracies, assassinations of agas, viziers, and sultans, and every kind of atrocity; becoming more dangerous to the sultan than foreign enemies. Several sultans made unsuccessful attempts to reform or dissolve the corps. The Janizaries bitterly opposed the reforms of Sultan Mahmud II., especially the reorganization of the army on the European model. The opposition becoming open revolt, on June 15, 1825, Mahmud ordered to be unrolled the flag of the Prophet, and the faithful to be arrayed against the mutinous corps. Deserted by their aga and other principal officers, the Janizaries were defeated with a loss of 16,000; 6,000 to 8,000 of them being killed in the assault or by the flames, when their barracks were burned. June 17, 1826, a proclamation declared the Janizaries dissolved. All opposition was defeated with bloodshed, thousands being put to death and over 20,000 banished. There are in the Imperial Museum at Constantinople 150 life-size figures showing the appearance of these famous troops.

JARNAC. March 13, 1569. In the third religious war of France, the Huguenots were completely overpowered by the Catholics at Jarnac, in western France, and the Huguenot leader, the prince de Conde, was slain.

JAY TREATY. Negotiated in 1794 between the United States and Great Britain, represented by John Jay and Lord Grenville respectively. Ratified June 24, 1795. It provided for the removal of British garrisons from forts on the northwestern frontier; the settlement of boundary disputes by a joint commission; the collection of British debts; and a commercial agreement.

JEMMINGEN (1568). The duke of Alva was sent by Spain to suppress a revolt in the Netherlands. At Jemmingen he so completely defeated Louis of Nassau that the latter was compelled to swim the Ems river and escape into Germany with a small remnant of his army.

JENA. October 14, 1806. Napoleon defeated the king of Prussia in a battle at Jena, in Saxe-Weimar, both armies sustaining heavy losses.

JERUSALEM. (1) 70. For about six months Jerusalem was besieged by the Romans, led by Titus. The defenders were finally overcome and 97,000 sold into slavery by the Romans. (2) In 637 the Moslems invaded Syria and, after a siege of four months, forced the surrender of Jerusalem. (3) June 7-July 15, 1099. During the First Crusade Jerusalem was assaulted and captured and 70,000 Moslems massacred.

JEWELL, THEODORE FRELINGHUYSEN (1844-). Rear admiral (retired) United States navy; born at Georgetown, D. C.; graduated United States Naval Academy (1864); served on all foreign stations; commanded naval torpedo station (1890-1893); superintendent of naval gun factory (1893-1896); member naval examining board; commander-in-chief of European squadron (1904); rear admiral (March 15, 1904); retired (November 22, 1904).

JOAN OF ARC (JEANNE D'ARC) (1412-1431). Born (January 6, 1412) in the village of Domremy, near Vaucouleurs, France, of a peasant family. Believing herself to be the deliverer of France from England, she convinced Charles VII. of her divine authority and he resolved to employ her. Donning male attire she made a triumphant entry into the besieged city of Orleans, from which time she was known as the "Maid of Orleans." She persuaded the Dauphin to be crowned, July 17, 1429, at Rheims. Afterwards captured by the Burgundians and sold to the English; imprisoned at Rouen, and after a trial which was a mere mockery of justice, was condemned as a sorceress and a heretic, and burned to death, May 30, 1431.

JOHNSTON, JOSEPH EGGLESTON (1807-1891). An American military officer; born in Prince Edward County, Va.; greatly distinguished himself in the Florida and Mexican wars; made brigadier general of Virginia volunteers and later full general in the Confederate service; took an active part in the first battle of Bull Run, where he personally led a charge with the colors of the Fourth Alabama Regiment in his hands; took command of Bragg's army at Dalton, Ga.; was succeeded in this command by General Hood. After the war he engaged in business; was member of Congress in 1876-1878, and United States commissioner of railways in 1885-1889. He died in Washington, D. C.

JOLIET, LOUIS (1645-1700). Born in Canada; educated as a Jesuit at Quebec; became a voyageur; went searching for copper at Lake Superior and to discover more direct route from upper lakes to Montreal. Penetrated to Sault Sainte Marie (1669); selected by Frontenac to explore the Mississippi, then supposed to empty into the "Sea" of California (1672). Reached Mackinaw, spending the winter with Père Marquette. Discovered river emptied into Gulf of Mexico; returned by Illinois river and Lake Michigan to Quebec. His maps still exist. Was given island of Anticosti; built fort and was appointed royal hydrographer (1693); granted seigniory of Joliet, still in the possession of the family.

JONES, JOHN PAUL (1747-1792). A famous Scotch-American naval officer; born in Kirkcudbrightshire, Scotland; his name was originally John Paul; engaged in the African slave trade (1766-1767); removed to Virginia and assumed the name of "Jones"; at the outbreak of the Revolution was commissioned first lieutenant of the flagship Alfred in the new navy; promoted captain and cruised around the British Isles doing great damage to shipping; entered the Russian

service as rear admiral (1788); resigned (1791) and took an active part in the progress of the French Revolution. He died in Paris, and was given a public funeral by the National Assembly. In 1905 his body was found and brought to the U. S. by a U. S. squadron and re-interred at Annapolis, Md.

JONESBORO (August 31, September 1, 1864). After destroying the roads southwest of Atlanta, the Federals under Howard pushed toward Jonesboro, a town south of Atlanta. Upon their arrival they found a Confederate force commanded by Hardee in possession. The Confederates made an attack on August 31, and after a sharp skirmish were defeated and forced to retreat to Lovejoy. This Confederate defeat led Hood to abandon Atlanta on September 1, and General Slocum at once took possession of the city.

JULY REVOLUTION. The French revolution of July, 1830, which overthrew the Bourbon dynasty and placed Louis Philippe on the throne.

JUNON (June 20, 1813). While the British fleet lay in Chesapeake Bay, the frigate Junon was attacked by the Constellation, commanded by Capt. Joseph Tarbell, and a flotilla of gunboats. Before the engagement became decisive, the attacking squadron was dispersed by frigates which came to the relief of the Junon.

KAISERSLAUTERN (November 30, 1793). In an encounter at Kaiserslautern, a town west of Mannheim, in Germany, the duke of Brunswick gained a victory over the French.

KANSAS-NEBRASKA BILL. Passed by the United States Congress in 1854 for the organization of Kansas and Nebraska as territories. The provisions which the bill contained for permitting the citizens of these territories to regulate slavery as they chose was a possible nullification of the Missouri Compromise of 1820, which prohibited slavery north of 36° 30′ N. latitude. It passed the Senate and House after bitter debates and renewed the contest of the North and South over the slavery question.

KARS. (1) November 28, 1855. In a battle at Kars, a town in Asiatic Turkey, the Turks defeated the Russians, but after the battle was over Kars was obliged to capitulate. (2) November 8, 1877. The Russians again besieged Kars in 1877, and after twelve hours of severe fighting the town was captured.

KASKASKIA (July 4, 1778). In the spring of 1778, George Rogers Clark, with an expedition from Virginia, set out to gain the allegiance of the towns in the Ohio and Mississippi valley. On July 4th he reached Kaskaskia, on the Mississippi river in Illinois, and captured it from the British without bloodshed.

KEARNY, PHILIP (1815-1862). An American soldier; born in New York City; graduating from Columbia in 1833; was appointed lieutenant of first dragoons (1837), and in 1839 was one of the three officers sent by the United States government to Saumur Cavalry School; in 1839-1840 served as a French volunteer against the Algerians and Arabs; as a captain of cavalry he fought in the Mexican War (1846-1847). In 1859 he served with the French in Italy, receiving the cross of the Legion of Honor for his great bravery throughout this campaign. He reëntered the U. S. army in May, 1861, at the beginning of the Civil War, as a brigadier general of volunteers; took a conspicuous part in the Peninsular campaign and the second battle of Bull Run, and was killed while reconnoitering at Chantilly (September 1, 1862).

KEARSARGE—ALABAMA (June 19, 1864). Just as the Confederate cruiser Alabama was arriving at Cherbourg, France, she sighted the Federal steamer Kearsarge and challenged Captain Winslow to a battle. On June 19 the boats moved further out to sea and opened fire. At the end of an hour the Alabama struck and began to sink, many of the crew being lost before the Kearsarge could save them.

KELLERMAN, FRANCOIS CHRISTOPHE, DUKE OF VALMY (1735-1820). A French general born near Rothenburg, Bavaria. In 1752 entered the French army; served throughout the Seven Years' War, and in Polish expedition of 1771. He warmly espoused the cause of the French Revolution, and in 1792 was leader of the Army of the Centre. On September 20, 1792, repulsed the Prussians and delivered France in the famous victory of Valmy; afterwards commanded the Army of the Alps, but was imprisoned for a year on an alleged charge of treason against the republic, and was liberated only by the fall of Robespierre; created marshal of France (1804), and duke of Valmy (1809). After 1812 led the reserves in Germany, and at the restoration attached himself to the Bourbons; created a peer in 1814.

KEMPFF, LOUIS (1841-). Rear admiral (retired) United States navy; born near Belleville, Ill.; served during Civil War; executive officer of Mohican on eclipse expedition to Siberia (1869); lighthouse inspector, 13th district (1874-1876); commander naval rendezvous, San Francisco (1880-1881); member of naval examining and retiring boards (1895-1896); commandant Mare Island Navy Yard (1899-1900); rear admiral (March 3, 1899); squadron commander, Asiatic fleet (1900-1902); refused to join foreign admirals in firing on Taku forts (1900), but after U. S. S. Monocacy was struck by a shot from Chinese forts, united with forces at hand to protect life and property of Americans; commandant Pacific naval district (1902-1903); retired (October 11, 1903).

KENESAW (June 27, 1864). After several days of skirmishing in vicinity of Marietta, Ga., the Confederates under Johnston made a final stand on Kenesaw Mountain. The Federals, commanded by Sherman, made an assault on June 27, but were repulsed with heavy losses.

KERNSTOWN or WINCHESTER (May 25, 1862). Major General Jackson, with a Confederate army numbering 15,000, was stationed at Kernstown, Va., while a Federal army of 5,000, under General Banks, occupied Winchester, a village near Kernstown. On May 25, 1862, Banks made an attack, and after a desperate struggle the Federals were compelled to retreat with a loss of 904 men. The Confederate loss was 400 men.

KETTLE CREEK (February 24, 1779). While Colonel Boyd was on the way to Augusta, Ga., with 700 Tories, he was surprised at Kettle Creek, in Wilkes County, by Pickens and Dooley with about 300 men. The Tories fought desperately, but were overpowered and taken prisoners. This defeat ended the organization of Tory bands in the south.

KHYBER PASS. A narrow defile 33 miles long in the Khyber mountains in northwestern India, connecting the Punjab with Afghanistan. In places a ravine 50 to 450 feet wide is inclosed by perpendicular cliffs 1,400 to 3,000 feet high. It is the only pass through which artillery can be carried; of strategical importance dating from Alexander the Great; ruins of native forts exist on the heights. In the Afghan wars (1839-1842 and 1878-1880) the British troops were here opposed. Since then it is controlled by the Anglo-Indian government; open to traffic Tuesdays and Fridays.

KIDD, WILLIAM (about 1650-1701). A British navigator; the notorious Captain Kidd of piratical fame; born probably in Greenock, Scotland. He went to sea in his youth, and in the French and English War gave such efficient service to the colonists that the New York City council awarded him 150 pounds (1691). In 1695 was commissioned by the earl of Bellomont (Gov. of New York), to assist in the suppression of piracy. He sailed from Plymouth (April 23, 1696), going to New York. While cruising off the coast of Madagascar it became rumored that he himself had turned pirate. On July 1, 1699, Kidd reached Boston, and delivered to the authorities the returns of his plunder. He was arrested and sent to England, where he was found guilty of piracy and murder, and hanged (May 23, 1701).

KILPATRICK, HUGH JUDSON (1836-1881). An American soldier; born near Deckertown, N. J. Served on the Federal side during the Civil War; commanded cavalry under General Sherman during the march to the sea, and through the Carolinas; brevetted major general (1865) for gallant work during the war; made major general of volunteers (1865); appointed U. S. minister to Chile (1865-1868 and 1881); his death occurred in Santiago.

KING GEORGE'S WAR. That portion of the War of the Austrian Succession fought in America (1744-1748) between England and France. The chief events were: capture of Canso, N. S. (1744), by the French, and the capture of Louisburg by the English under Sir William Pepperell (1745). The Treaty of Aix-la-Chapelle (1748) closed the war, all captures being surrendered by both sides.

KING'S MOUNTAIN (October 7, 1780). When the southern mountaineers learned that Major Ferguson was scouring the country, a band of about 1,000 backwoodsmen, with Shelby and Sevier as leaders, hurried to meet the British. Ferguson had placed his men on King's Mountain, near the boundary between the Carolinas. Making repeated attacks from all sides of the hill at once, the British were finally exhausted and almost annihilated. Ferguson was slain and the few remaining British soldiers taken prisoners.

KING WILLIAM'S WAR. That portion of the War of the League of Augsburg fought in America between France and England (1689-1697). The chief events were: capture of and massacres in towns of New England by the French under Frontenac (1689-1690); attack on Quebec by Sir William Phipps (1690); and close of the war by the Peace of Ryswick.

KITCHENER, HORATIO HERBERT, VISCOUNT AND BARON KITCHENER OF KHARTUM (1850-). A British commander-in-chief; born at Kerry, Ireland; entered the army as lieutenant of royal engineers (1871); appointed major of Egyptian cavalry (1882); promoted lieutenant colonel; served in Egypt, where he became adjutant general, and second in command of the Egyptian army; governor of Suakim (1886-1888); Soudan frontier (1889); made sirdar, or commander of the Egyptian forces, receiving the rank of brigadier general (1892); captured Dongola (1896); created K. C. B. and major general; with the capture of Khartum was completed the reconquest of the Sudan (1898); raised to peerage, grant of £30,000, and created G. C. B.; appointed governor general of the Sudan; went to South Africa with Lord Roberts (1900) as his chief of staff; appointed first in command of British forces in the war against the Boers (1900); defeated the Boer general, and peace was secured (1902); for his great service to the British nation he received a sum of £50,000 and the thanks of Parliament, also the title of viscount was bestowed upon him by King Edward; commander-in-chief of the Indian army (1900-1902); promoted to lieutenant general and general; was commander-in-chief in India (1902-1909).

KITTANNING (September 8, 1756). During the French and Indian War, Kittanning was an Indian village on the Allegheny river. Colonel Armstrong, with a force of 300 British, surprised the town and after a desperate attempt to defend themselves the Indians were defeated and the town destroyed.

KLEBER (*klay-bare*), **JEAN BAPTISTE** (1753-1800). A French general; born at Strassburg; entered the Austrian army (1776); as general of brigade he commanded in the Vendean War (1794); defeated the Austrians in several battles; went to Egypt with Bonaparte; was wounded in the siege of Alexandria (1798); recovered and won the battle of Mount Tabor (1799); received chief command in Egypt on Bonaparte's departure; destroyed the Turkish army at Heliopolis and while attempting to conclude a treaty with the Turks was assassinated by a Turkish fanatic at Cairo.

KNOX, HENRY (1750-1806). An American soldier; born in Boston; entered the Continental army as aide to General Ward at the battle of Bunker Hill (1775); became colonel of artillery (1775); brigadier general and chief of artillery (1776); major general (1782); received the surrender of New York City from Sir Guy Carleton (1783); became commander-in-chief of the army (1783-1784); was the first Secretary of War in Washington's cabinet (1785-1795); died in Thomaston, Maine.

KNOXVILLE (December 5, 1863). After the engagement at Campbell's Station, the Federals under General Burnside retreated to Knoxville, pursued by the Confederates led by Longstreet, and on November 17 the latter encamped before the city. For ten days the Federals were confined within the city by the watchful Confederates, during which time assaults and skirmishes were frequent. As soon as Longstreet learned that Federal reinforcements were approaching he raised the siege and hastened toward Virginia.

KOLIN or **KOLLIN** (June 18, 1757). During the second campaign of the Seven Years' War, the Prussians, under Frederick the Great, met the Austrians, under Daun, at Kolin, in Bohemia. The Prussians made a brave charge, but were beaten by the Austrians with heavy losses.

KONIGGRATZ. July 3, 1866. In the Seven Weeks' War King William I. of Prussia defeated Benedek, the Austrian general, in a severe engagement between the towns of Königgrätz and Sadowa, in Bohemia. The battle is also named Sadowa. This victory established the supremacy of Prussia in Germany, gave Venetia to Italy, united north Germany, and led to the legislative independence of Hungary.

KOSCIUS'KO, THADDEUS (1746-1817). Polish general and patriot; born at Siechnowice in Lithuania; became a captain in the Polish army; left the army and went to America (1776); made a colonel of engineers by recommendation of Benjamin Franklin (1776), and served under Gates (1777); was chief engineer in constructing the fortifications at West Point; was adjutant to General Washington; served as engineer-in-chief during General Greene's southern campaign (1780-1781); was brevetted brigadier general and received the thanks of Congress for services rendered during the war; returned to Poland (1786), and reëntered the Polish army. A monument has been erected to his memory at West Point.

KUNERSDORF (August 12, 1759). One of the most bloody battles of the Seven Years' War was fought at Kunersdorf, a village in Prussia. The Prussian army of 40,000, led by Frederick II., was completely defeated and routed by the combined forces of Austria and Russia, commanded by Laudon and Soltykoff.

LA BELLE ALLIANCE. Name of a farm located about thirteen miles from Brussels. Here on the morning of June 18, 1815, Napoleon assembled the French infantry numbering about 74,000 men. At Mont St. Jean, some two miles farther north, was stationed the duke of Wellington. The French tirailleurs were posted at the Farm of La Haye Sainte. The battle of Waterloo is referred to by the French as the Battle of Mont Saint Jean, and by the Prussians as the Battle of La Belle Alliance.

LA COLLE MILLS (March 30, 1814). While a force of Americans under General Wilkinson was marching toward Montreal, they attacked a blockhouse and stone mill on the La Colle river in Quebec, which were occupied by a British garrison. After fighting about two hours, in which time the British were reinforced, Wilkinson retired.

LADYSMITH (November 2, 1899-February 28, 1900). The English, under Sir George White, were besieged at Ladysmith, in southern Africa, by the Boers. A continuous bombardment, with now and then a sharp contest, almost forced the British to surrender, but they held their ground until Sir Redvers Buller finally relieved them. In addition to rather heavy losses by fighting, the garrison was still further reduced by disease.

LA FAYETTE, MARIE JEAN PAUL ROCH YVES GILBERT MOTIER, MARQUIS DE (1757-1834). French general; born at the castle of Chavagnac, in Auvergne. Early entered the army, and came to America (1777) to aid the colonists in the war of independence. Was made a major general in the Continental army (1777), and became one of Washington's most efficient officers, serving throughout the war, the year 1779-1780 excepted. After the Yorktown campaign he returned to France (1781); became commander-in-chief of the National Guard (1789); was captured by the Austrians (1792) in defending the frontier; and commanded the National Guard during the revolution of 1830.

LAKE BORGNE (December 14, 1812). After the movements of the British in Chesapeake Bay, they started for New Orleans. On December 14, 1812, the combined military and naval forces of England were met at Lake Borgne, east of New Orleans, by a fleet sent from New Orleans to intercept them. At the end of about an hour's fighting, the Americans were overpowered and forced to surrender, leaving the British in control of Lake Borgne.

LAKE CHAMPLAIN. (1) October 11, 13, 1776. The American fleet of 37 vessels commanded by Benedict Arnold, encountered the British fleet of 38 well-equipped vessels under Captain Pringle, on Lake Champlain, near Plattsburg. When the fighting ceased at dark on October 11th, the badly damaged American boats broke through the British line and sailed for Crown Point. Carleton, with a squadron from Quebec, pursued the Americans, and on the 13th overtook them. Only six boats of the fleet escaped after these encounters with the British. (2) September 11, 1814. After General Prevost had been repulsed in his march toward Plattsburg, he led his troops toward Lake Champlain to support the British fleet. On September 11th the British squadron of 16 vessels commanded by Captain Downie, met the American fleet of 14 vessels under Capt. Thomas Macdonough. After a severe fight of over two hours every British warship had surrendered, although the American ships had also suffered considerably. The British loss was over 200 men; the Americans lost about 110 men.

LAKE DWELLINGS. During what is known as the Lacustrian Period human habitations for security from wild beasts were built over the waters of a lake. Such dwellings exist to-day in central Africa, the Philippines, on the Amazon, and in Venezuela. By the aid of relics left by the lake dwellers it has been proved that they were in Switzerland and Italy during the Neolithic or New Stone Age, and according to Dr. Keller, remained there until the first century of the Christian era, when these lake dwellings ceased to be occupied.

Herodotus described the Paeonians as living on platforms in Lake Prasias in Thrace about 450 B. C. The lake dwellers built their homes on a platform supported by piles or trunks of trees planted in the bed of a river or lake with the upper parts standing six or eight feet above the water. If the bottom was hard, stones were heaped about the base of the piles. The platforms were sometimes very long, and outhouses for domestic animals, as well as many houses, could be accommodated upon them. Boats and narrow pile bridges served as communication with the land. In Ireland and Scotland these structures are technically called "crannogs," and are composed largely of stones bound together by a framework of logs, much on the principle of the Swiss "fascine" dwellings. The lake dwellers are supposed to have been of Asiatic origin, and to have made their way at their leisure entirely across Europe and into Scotland and Ireland by way of Hungary and the valley of the Danube.

LAKE ERIE (September 10, 1813). The most famous naval victory for the Americans during the War of 1812 was fought near Put-in-Bay, in the western part of Lake Erie. The best fleet which the Americans could equip consisted of 9 vessels of 54 guns, manned by about 400 men and commanded by Commodore Oliver H. Perry. There were in the British fleet 6 vessels, 63 guns, manned by 500 trained sailors under the command of Commodore Barclay. The Americans began the engagement in the morning of the 10th, and at 3 o'clock in the afternoon the British surrendered. The British lost 527 men; the Americans, 60 men.

LAKE GEORGE, N. Y. (September 8, 1755). A body of English settlers in Massachusetts, Connecticut, and New Hampshire, led by General William Johnson, marched north to Lake George in New York, to capture it from the French. A large force of Canadian militia and Indians surprised the English and drove them in confusion toward the American camp on Lake George. The band of soldiers who were holding the camp opened fire and forced the French and their allies to retreat with heavy loss. In the evening the retreating Frenchmen were attacked by reinforcements from New Hampshire and completely routed.

LAMBERTON, BENJAMIN PEFFER (1844-). Rear admiral (retired) United States navy; born in Cumberland County, Pa.; graduated United States Naval Academy (1864); served in Civil War; lighthouse inspector, 6th district (1885-1888), 5th district (1894-1898); Admiral Dewey's chief of staff at battle of Manila Bay (May 1, 1898); for "eminent and conspicuous" conduct in this battle was advanced seven numbers in rank; commanded Admiral Dewey's flagship Olympia (1898-1899); member of naval examining and retiring boards (1900); lighthouse board (1900-1903); commander-in-chief of South Atlantic squadron (1903-1904); rear admiral (October 11, 1903); chairman of lighthouse board (1905-1906); retired (February 25, 1906).

LAMIAN WAR. War of the allied states of Greece against Antipater (323 B. C.). Antipater met reverses early in the war and sought refuge in Lamia, where he was besieged for several months. He escaped with the aid of Craterus, ended the war, and subdued the allies.

LANGENSALZA. (1) February 14, 1761. During the Seven Years' War the French were defeated by the Hanoverians in an encounter at Langensalza, in Prussia. (2) June 27, 1866. The second battle at Langensalza was fought between the Prussians, led by Flies, and the Hanoverians, under their king. After severe fighting the Prussians compelled the king to surrender.

LANNES (*lan*), **JEAN, DUC DE MONTEBELLO** (1769-1809). Marshal of France; born at Lectoure. Entered the army (1792), and distinguished himself at Abukir, Acre, Montebello, and Marengo. Was much esteemed by Napoleon. Rendered splendid service at Austerlitz, Jena, Eylau, Friedland, and in Spain. He was mortally wounded at Aspern.

LAON. March 9, 1814. The fortress of Laon, in the northern part of France, held by the allied forces of Bernadotte and Blucher, was attacked by the French. After a hard and obstinate fight, the latter were driven off with great loss.

LA ROTHIERE. February 1, 1814. A sharp contest occurred at La Rothiere, in France, between the French, led by Napoleon, and the allies, led by Blucher. The French were forced back and La Rothiere taken, but Napoleon regained possession of the village before the close of the battle.

LAS GUASIMAS (June 24, 1898). While an army of Americans was on its way toward Santiago, Cuba, two divisions led by Wood and Roosevelt met the Spaniards at Las Guasimas. A sharp contest ensued, which resulted in the defeat of the Spaniards. Only a few men were lost on each side.

LATIN WARS. Latium was the name of a broad plateau on the western coast of Italy. The inhabitants were called Latins, a name later given to the language of Rome. As Rome grew it destroyed or absorbed all of the neighboring states. The towns revolted against the impositions of Rome in 390 B. C. and the Latin War which followed lasted for two years. At the end of that time Latium was completely humbled. The Latins took part in the Social War in 89 B. C., but never afterward opposed Rome. At the end of the republic all of the inhabitants of the Latin towns enjoyed the privileges of Roman citizenship.

LATOUR (*lah-tur'*), **D'AUVERGNE, THEOPHILE MALO CORRET DE** (1743-1800). Hero of French Revolution; born at Carhaix. Served with distinction at siege of Port Mahon (1782) and in wars of 1792-1800. Steadfastly refusing all promotion, he was named by Napoleon "the First Grenadier of France," his column of 8,000 grenadiers bearing the title "Infernal Column" for their murderous bayonet charges. Slain at Oberhausen, Bavaria, the whole French army mourning his death for three days.

LAURENS, JOHN (1753-1782). American soldier; born in South Carolina; educated in England. Entered Continental army (1777) as one of Washington's aides; fought with great bravery; secured a loan from France (1781). His unusual abilities, courtesy, and chivalric devotion to his country won for him the title of "Bayard of the Revolution." Killed in an insignificant skirmish on the Combahee River, S. C.

LAWRENCE, JAMES (1781-1813). American naval hero; born at Burlington, N. J. Distinguished in war with Tripoli, 1804-1805. As commander of the Hornet captured British brig-of-war Peacock, with a loss of one man killed and two wounded (February 24, 1813). Challenged by Captain Broke of the Shannon, Lawrence, in command of the frigate Chesapeake at Boston harbor, went out with a new crew, and in the unsuccessful engagement was mortally wounded (June 1, 1813). His dying words, "Don't give up the ship," became a motto in the navy.

LAWTON, HENRY WARE (1843-1899). American soldier; born at Manhattan, O. Served as a volunteer in the Civil War, after which he entered the regular army. Fought with distinction against Sioux and Ute Indians, 1879, and in 1886, captured Geronimo. Commissioned brigadier general in the war with Spain, leading with great skill and bravery at El Caney (July 1, 1898). Assigned to the Philippines (Dec., 1898) as second in command to Gen. Otis, and actively engaged there until slain in battle at San Mateo, Luzon, Dec. 19, 1899.

LEE, FITZHUGH (1835-1905). American soldier; born at Clermont, Va.; graduated from West Point, 1856; served with distinction as a Confederate officer in the Civil War, attaining the rank of major general (1863). Governor of Virginia, 1886-1890; U. S. consul general at Havana, Cuba, 1896-1898. During Spanish-American War served in Cuba as major general U. S. volunteers, and at close of hostilities became military governor of Havana. Appointed brigadier general in regular U. S. army, Feb., 1901, retiring from active service the following month.

LEE, HENRY (1756-1818). American soldier and statesman; born at Leesylvania, Va. Known as "Light Horse Harry" for his daring and activity in the Revolutionary War; noted especially for his capture of the British post at Paulus Hook, and his service with Gen. Greene's army in the south. Member of State Legislature, 1789-1791; Governor of Virginia, 1792-1795; commanded militia which quelled Whisky Insurrection in Pennsylvania (1794). Federalist representative in Congress (1799-1801), delivering there the funeral oration for Washington containing the famous words, "First in war, first in peace, first in the hearts of his countrymen."

LEE, ROBERT EDWARD (1807-1870). One of the greatest of American generals. Commander-in-chief of Confederate army, having refused President Lincoln's offer of command of the army of the United States. Born at Stratford, Va.; graduated from West Point (1829); served in Mexican War, attaining rank of colonel; superintendent at West Point, 1852-1855; commanded United States troops which overcame and captured John Brown at Harper's Ferry, Va. (1859). (For Gen. Lee's campaigns in the Civil War, see that subject.) Lee's surrender to Gen. Grant at Appomattox Court House (Apr. 9, 1865), virtually ended the Civil War. Soon after (Aug. 24, 1865) he accepted

the presidency of Washington College at Lexington, Va., holding this position until his death, after which the institution was renamed Washington and Lee University.

LEGION OF HONOR. Founded in 1802 by Napoleon and organized two years later; the distinction being conferred for meritorious conduct in civil or military life. Originally the order comprised 3,665 chevaliers, 450 officers, 300 commanders, 105 grand officers, and a grand master, the last office being held by Napoleon. At their initiation the members were obliged "to pledge their support to the defense of the State and of the liberties achieved by the Revolution." With the successive changes of dynasties in France, the order experienced many alternations. In 1872 the present constitution was formed, the order being reorganized into five classes,—chevaliers, officers, commanders, grand officers, and grand crosses. Salaries are given, ranging from 250 francs for a chevalier to 3,000 francs for a grand cross. The order numbered 43,851 in 1892, the law of 1897 fixing the maximum number of additional crosses to be issued at 14,320. A five rayed star of white enamel edged with gold, bearing the image of the Republic with the inscription Republique Francaise on its obverse, two flags and the motto "Honneur et Patrie" on the reverse, is the emblem of the order. A wreath of oak and laurel surmounts it and it is suspended from a red ribbon. A portrait of Napoleon surmounted by an imperial crown was originally used in place of the emblem of the Republic. The order is conferred on foreigners, and occasionally upon women.

LEICESTER (*les'ter*), **ROBERT DUDLEY, EARL OF** (1532?-1588). A favorite of Queen Elizabeth. Commanded expedition (1585) to aid the Netherlands in their struggle for independence from Spain; elected governor by the states-general (1586); recalled 1587.

LEIPZIG, BATTLES OF. (1) Between Tilly with 44,000 men and Gustavus Adolphus of Sweden allied with John George I., Elector of Saxony, with a united force of 20,000 (September 1, 7, 1631). Tilly routed the Saxon troops but was beaten by the Swedes. (2) Between the Swedes under Torstenson and the Imperialists on October 23, 1642. The Swedes were victorious. (3) Between the French under Napoleon with 130,000 and the allied Austrians, Russians, Prussians, and Swedes under Prince Schwarzenberg with 200,000 men. Napoleon directed the battle in person. The battle began on the morning of October 16 and lasted until the evening of Oct. 19, 1813. Napoleon was beaten but made a masterly retreat across Germany. His power was effectively shattered.

LE MANS (January 10-12, 1871). The battle of Le Mans, in northern France, was fought between the Germans, under Prince Frederick Charles, and the French, led by Chanzy. The French army was utterly routed and many taken prisoners.

LEPANTO, BATTLE OF. Fought October 7, 1571, near the Curzolari Islands at the entrance to the Gulf of Patras, between the Turkish fleet and the combined fleets of Venice, Spain, and the papal states which formed the Holy League. It was caused by an effort of Sultan Selim II. to take Cyprus from Venice. The Christian fleet was victorious. The Turks lost 30,000 killed, wounded, and prisoners; the Christians, 3,000. The Turkish naval power in the Mediterranean was broken, though Cyprus was taken by a land force of Turks.

LEUTHEN (December 5, 1757). During the Seven Years' War, Leuthen, a town in Prussia, was the scene of a hard fight between 33,000 Prussians, under Frederick the Great, and 90,000 Austrians, led by Prince Charles of Lorraine and Count Daun. The Austrians were overthrown and finally forced to surrender.

LEUTZE, EUGENE HENRY COZZENS (1847-). Rear admiral United States navy; born at Dusseldorf, Prussia; graduated United States Naval Academy (1867). While on leave from the academy (1864), volunteered for service on board Monticello, North Atlantic squadron; member Nicaraguan surveying expedition (1872-1873); hydrographic office (1874); interoceanic survey (1875); coast survey (1876-1880); took part in capture of city of Manila (August 13, 1898); commandant navy yard, Cavité, P. I. (1898-1900); superintendent naval gun factory, Washington (1900-1902); since 1905 commandant navy yard, Washington, and superintendent naval gun factory; rear admiral (July 6, 1907).

LEXINGTON (April 19, 1775). After attempting to establish a British army around Concord and Lexington, in Massachusetts, Colonel Smith realized that the inhabitants had been informed of his movements and were preparing to defend themselves. As he led his army toward Boston, the Americans fired from their hiding places and killed many of his men. At Lexington he was reinforced by Lord Percy and tried to beat back the Americans, but their forces were constantly increasing and the British were obliged to seek shelter in their ships in Boston harbor. The British lost 273; the Americans, but 93.

LEXINGTON, MO. (September 20, 1861). After the battle of Wilson's creek, General Price, with a force of 28,000 Confederates, appeared before Lexington, in northern Missouri, where a garrison of 2,780 Union forces under Colonel Mulligan was stationed. On September 12, 1861, Price began an investment, and on the 20th, after repeated attacks, Mulligan was obliged to capitulate with 2,600 men.

LIAOYANG. Both the Russians and Japanese had placed troops in the vicinity of Liaoyang, a short distance south of Mukden, in Manchuria. The Japanese, commanded by Oyama, pressed the Russians toward Liaoyang, and an attempt to surround the Japanese having failed, the Russians were obliged to evacuate Liaoyang, which they did September 3, 1904.

LIEGNITZ, in Silesia. (1) April 9, 1241. Duke Henry of Silesia and the Christian allies were defeated here by Batou Khan. (2) May 3, 1634. The Bohemians, led by Colloredo, met defeat at the hands of Arnheim, commander of the Saxons, in a battle at Liegnitz. (3) August 15, 1760. During the Seven Years' War a battle was fought at Liegnitz between Frederick II. of Prussia and the Austrians, in which the latter were utterly routed with heavy loss.

LIGNY (June 16, 1815). Eighty-four thousand Prussians, under Blucher, were defeated by Napoleon's army of 60,000 at Ligny, a town of Belgium.

LIMOGES. In 1370 Limoges, in France, was taken by the "Black Prince," son of Edward III. of England, after a brief siege. The town was plundered and burned and more than 3,000 of its inhabitants were massacred.

LINCOLN, BENJAMIN (1733-1810). American soldier; born at Hingham, Mass. Member of Massachusetts provincial congress (1775); served in Revolutionary War as major general, first of Massachusetts militia (1775), then in Continental army (1777); commanded right wing of army at Yorktown, and delegated by Washington to receive the surrender of that city (Oct. 19, 1781). Secretary of War, Oct. 1781-Nov. 1783; commanded Mass. forces which crushed Shays's rebellion (1786-1787); lieutenant governor of Massachusetts (1788-1789).

LODI (May 10, 1796). The Austrians, under Beaulieu, were defeated by Napoleon in a bloody fight at the bridge of Lodi, in northern Italy.

LOGAN, JOHN ALEXANDER (1826-1886). American soldier; born in Jackson County, Ill.; attended Shiloh College a short time; became first lieutenant in the army during war with Mexico; graduate of Louisville University; admitted to bar (1852); colonel 31st Illinois volunteers (1861); brigadier general and major general (1862); commander 15th corps (1863); commander of army of Tennessee.

LONE TREE HILL (October, 1904). One of the most brilliant successes of the Russians during their war with Japan was the capture from the Japanese of Lone Tree Hill, an important stronghold in Korea. The Russians were led by Putiloff, and made repeated charges with heavy loss before they were able to seize the eminence. In honor of the victory the hill was renamed Putiloff.

LONG ISLAND (August 27, 1776). During the American Revolution, the British desired to capture New York, but wished first to gain Brooklyn Heights, a strongly fortified American position opposite New York. After a stubborn fight the Americans were obliged to fall back, two of their ablest leaders being captured. That evening Washington arrived with reinforcements, but as the British did not attack them he quietly transferred his troops to Manhattan Island to protect New York.

LONGOBARDI (Lombards). A German people who settled on the lower Elbe at the beginning of the Christian era, and apparently in the fifth century migrated to the regions of the Danube, where they became converts to Arianism. They were conquered by the Herulae but overthrew them in 490; destroyed the Gepidae in 566; took possession of Pannonia; and in 568, under Alboin, invaded Italy, in the northern part of which they easily established themselves, making Pavia their capital. Influenced by Gregory the Great and by their remarkable queen Theodelinda, they accepted the Roman Catholic form of the Christian faith. In 774 the Lombard kingdom was made a

province of Charlemagne's empire, the Longobardi thereafter becoming merged in the general Italian population.

LONG PARLIAMENT (November 3, 1640, to March 16, 1660). During the Civil War and Protectorate of Cromwell in England. It impeached and executed Strafford and Laud; abolished the Star Chamber and High Commission; declared ship-money illegal; prohibited taxation without consent of Parliament; and enacted laws against the dissolution of Parliament without its consent. A part of this body, known as the "Rump," executed King Charles I. and established the Commonwealth.

LONGSTREET, JAMES (1821-1904). American soldier; one of the leading Confederate generals of the Civil War; born in Edgefield District, S. C.; graduated from West Point in 1842. Served in the West and won distinction in the Mexican War. After the Civil War Longstreet held various federal offices, among them Supervisor of Internal Revenue, 1878; Minister to Turkey, 1880-1881; United States Railroad Commissioner, 1897-1904.

LONGWOODS (March 3, 1814). While Captain Holmes, with an American regiment, was marching toward Fort Talbot, on Lake Erie, he encountered the British at Longwoods, in the southern part of Ontario, Canada. The fighting continued until dark, the Americans losing seven men.

LOOKOUT MOUNTAIN (November 24, 1863). While Sherman and his Federal troops were crossing the Tennessee river, Hooker, with 10,000 men, attacked the Confederates on Lookout Mountain, Tenn. His men struggled bravely up the mountain slopes, enveloped in a heavy mist, and completely defeated the Confederates and took over 1,300 prisoners. Also known as the "Battle above the Clouds," on account of the altitude at which most of the fighting was done.

LOUISBURG. (1) June 16, 1745. After a siege of six weeks, during King George's War, the English colonies in America captured Louisburg, on the east coast of Cape Breton Island, from the French. In 1748, by the treaty of Aix-la-Chapelle, Louisburg was restored to the French. (2) In 1758, during the French and Indian War, Louisburg was again besieged by the British, and after a few weeks of bombardment was obliged to capitulate.

LOUISIANA PURCHASE. This purchase of the "Province of Louisiana" was made in 1803, by the United States from France. News having reached the United States, in the spring of 1802, that Spain, by the secret treaty of San Ildefonso, concluded in October, 1800, had retroceded Louisiana to France, greater uneasiness was caused by the declaration that the Spanish Intendant had withdrawn the right of deposit secured to the inhabitants of the United States by a treaty of 1795, and also that Louisiana was to be delivered to France at an early date. At the prospect of danger arising from the last named, President Jefferson becoming alarmed, declared that the ancient friendship between the United States and France would cease the day she took possession, and henceforth the United States must ally itself with the British nation. In his annual message to Congress the president expressed this belief, and also wrote the American Minister at Paris, Robert R. Livingston, that the causes of the irritation could be removed to some extent by France ceding to the United States the island of New Orleans and the Floridas, if she considered Louisiana indispensable to her interests. This end being thought best accomplished by sending direct from the United States, a representative, James Monroe, in January, 1803, was selected as minister plenipotentiary with Livingston. The nomination was confirmed by the Senate, and the sum of $2,000,000 to accomplish this object was placed at their disposal. At this period, the war having been renewed between France and England, Napoleon, realizing the invincibility of England on the sea, doubted that France was able to hold Louisiana against such a power, therefore, Napoleon, through Talleyrand, proposed to sell the Province of Louisiana, to the astonishment of the commissioners, and asked for an offer; the Marquis de Marbois, minister of the treasury, then being selected by Napoleon to further negotiations. Negotiations began in earnest, Monroe in the meantime having arrived April 12, 1803. The sale was effected April 30, 1803, on the basis of 80,000,000 francs, including 20,000,000 for debts that the United States was to assume. On October 20 the treaty was ratified by the Senate by a vote of 24 to 7, and was laid before both Houses for execution. Provisions were made by this by which inhabitants of Louisiana were incorporated into the Union and permitted to enjoy full rights and immunities as citizens of the United States; that they should be fully protected in their enjoyment of property, liberty, and worship; that for twelve years the ships of France and Spain should enjoy special privileges of entry at New Orleans; this treaty also being accompanied by two conventions, when provisions were made for settlement of the debt and manner of payment. The total cost of Louisiana, principal, debts, and interest assumed, up to June 20, 1880, was $27,267,621. The area acquired exceeded 1,000,000 square miles, while the population did not exceed 90,000, including French, Americans, English, Spanish creoles, German, and about 40,000 slaves.

LOUVOIS (*loo-vwah'*), **FRANCOIS MICHEL LETELLIER, MARQUIS DE** (1641-1691). War minister under Louis XIV.; first to organize standing army for France; originated systems of commissariat and hospitals, and in Paris established Hotel des Invalides. Incited persecution of Huguenots, and involved France in long war of League of Augsburg.

LOUVRE. In May, 1871, the Communists of Paris set fire to the Louvre, and much damage was done before the flames could be extinguished.

LOWE, JOHN (1838-). Rear admiral (retired) United States navy; first naval officer of any nationality to have submarine service in submarine torpedo boat (1898), and made first report on that topic ever presented to Secretary of the Navy; after retirement, took part (October, 1901), with six other men, in a decisive experiment in a submarine boat, submerged to bottom of Peconic Bay for fifteen hours. Born at Liverpool, England; enlisted as private, 2d Ohio regiment (1861); appointed to United States navy (August, 1861); served through Civil, Korean, and Spanish wars; member of Greely relief expedition (1884); retired (December 11, 1900).

LUCE, STEPHEN BLEECKER (1827-). Rear admiral (retired) United States navy; founded naval war college (1884); largely instrumental in establishing naval training system. Born at Albany, N. Y.; served on many stations and circumnavigated the globe; during Mexican War, served on Pacific coast, and in North Atlantic blockading squadron in Civil War; rear admiral (October 5, 1885); retired (March 25, 1889); commissioner general Columbian Historical Exposition, Madrid (1892).

LUCKNOW (July 1-November 16, 1857). For over four months Lucknow, an important city of northern India, was besieged by the insurgents. Owing to the necessity of troops in many places to suppress revolt, and the delay in the arrival of reinforcements, Lucknow was obliged to withstand the enemy until a large army, led by Sir Colin Campbell, relieved the city and defended the inhabitants until they reached safety.

LUCULLUS, LUCIUS LICINIUS (about 110-about 57 B. C.). A great Roman general famed for his enormous wealth. Elected consul in 74 B. C.; relieved Cotta in the Mithridatic war when hard pressed; raised the siege of Chalcedon; with 12,000 foot and 3,000 horse he defeated 220,000 Armenians under Tigranes; was superseded in Asia by Pompey in 66 B. C. His later days were spent in luxury and splendor, surrounded by the educated and refined.

LUNDY'S LANE. On July 25, 1814, a battle was fought on Lundy's Lane, near the Niagara Falls, between the British army led by Drummond and the Americans under Brown. The fighting began at sunset and continued until midnight. The British were driven from their position and their artillery captured. They tried repeatedly to regain their guns but failed, and finally about midnight both armies retired from the field. Also known as the Battle of Bridgewater, or Niagara.

LUTTER AM BARENBERGE (August 27, 1626). Tilly followed Christian IV. into the duchy of Brunswick, and at Lutter am Barenberge completely defeated him, thus getting control of the whole province.

LUTZEN. (1) November 16, 1632. One of the most important battles of the Thirty Years' War was fought at Lützen, a town of Saxony, near Leipzig. The Swedes, led by Gustavus Adolphus, defeated the army of Wallenstein after a stubborn fight, in which Gustavus was killed. (2) May 2, 1813. The second battle at Lützen was fought between the Russo-Prussians, under Wittgenstein, and the French, under Napoleon. Most of the fighting occurred between Lützen and Gross-Görschen; and consequently the contest is also called the Battle of Gross-Görschen. Both sides claimed the victory; the French, because the allies retired the next day; and the allies, because they still held Gross-Görschen.

LUXEMBOURG (*look-som-boor'*), **FRANCOIS HENRI DE MONTMORENCI** (1628-1695). Marshal of France; born at Paris. Pardoned (1659) for taking part in wars of the Fronde. Commanded in the Netherlands (1672-1673), his masterly retreat from Utrecht

marking him as one of the greatest generals of his time. Fought successfully against William III. of England (1692-1693).

LYCOS (66 B. C.). During the Third Mithridatic War the Romans, led by Pompeius, defeated Mithridates in a battle by night on the Lycos (Yeshil Irmak), in Asia Minor.

LYONS. (1) In 197 Septimius Severus, with a Roman army, defeated his rival, Albinus, in a hard-fought battle at Lyons, a city at the confluence of the Rhone and Saone rivers, in France. (2) October 9, 1793. During the civil war in France, Lyons was one of the last to be surrendered by the revolutionists. The besieging army was commanded by Kellerman, and, as reinforcements arrived every day, the situation became hopeless and the city finally capitulated. In retaliation the city was partially destroyed, the property of the rich confiscated, and hundreds put to death.

LYSIMACHUS (about 360-281 B. C.). A general in the army of Alexander the Great. In the division of the kingdom, Lysimachus took Thrace as his share. In 314 B. C. he joined Ptolemy, Seleucus, and Cassander in the league against Antigonus of Babylon, and gained the northwestern part of Asia Minor by the battle of Ipsus (301 or 300 B. C.). In 288 B. C. he leagued with Pyrrhus, Ptolemy, and Seleucus, and took Macedonia away from Demetrius. He put his son, Agathocles, to death and the people of Asia Minor rose in rebellion, defeated, and slew him in the battle of Corupedion.

MAAGERSFONTEIN (December 11, 1899). The English forces, under General Methuen, were repulsed by the Boers at Maagersfontein, near Kimberley, in South Africa. In an attack before daybreak, they were caught in the intrenchments of the Boers and terribly cut to pieces.

McCALLA, BOWMAN HENDRY (1844-1910). Rear admiral (retired) United States navy; born at Camden, N. J.; graduated United States Naval Academy (1864), serving that summer on board yacht America in pursuit of Confederate steamers Florida and Tallahassee; for "eminent and conspicuous gallantry in battle" during war with Spain, was advanced six numbers in rank, receiving two Congressional medals for battle at Cienfuegos and at Guantanamo, and one for "specially meritorious service other than in battle"; commanded Newark, Asiatic station (1899-1901); during Boxer uprising in China (June, 1900) commanded landing party from United States Asiatic fleet, which formed part of column under Vice Admiral Seymour of the British navy in the effort to relieve legations in Pekin; for which service McCalla was advanced three numbers in rank "for eminent and conspicuous gallantry in battle," also given by the king of England the China War Medal, and decorated by the emperor of Germany with Order of the Red Eagle; rear admiral (1903).

McCLELLAN, GEORGE BRINTON (1826-1885). American general; born in Philadelphia; graduated from West Point (1846); served gallantly in Mexican War. Appointed commander of armies of the United States, Nov., 1861, and conducted in person the Peninsular campaign (1862); succeeded by Gen. Halleck as general-in-chief (July, 1862); resigned from the army Nov. 8, 1864. Defeated for the presidency (1864); chief engineer of department of docks, New York City, 1870-1872; governor of New Jersey, 1877-1881. McClellan excelled as a military tactician and scientific engineer.

McCLERNAND, JOHN ALEXANDER (1812-1900). American politician and soldier; born in Breckinridge County, Ky., but taken to Illinois when very young. Member of state (Illinois) legislature (1836-1842); and of Congress (1843-1851, 1859-1861). Appointed brigadier general (May 17, 1861), and served with distinction until his resignation from the army (November 30, 1864). Subsequently practised law in Springfield, Ill.

McCOOK, ALEXANDER McDOWELL (1831-1903). American soldier, prominent as a Federal officer in the Civil War, at the close of which he was brevetted major general for "gallant and meritorious services in the field during the rebellion." Reëntered regular service as lieutenant colonel in March, 1867; brigadier general (1890); major general (1894); retired from active service (1895). In May, 1896, represented the United States at coronation of the czar of Russia.

MACDONALD, ETIENNE JACQUES JOSEPH ALEXANDER, DUKE OF TARANTO (1765-1840). Marshal of France; born at Sedan, of Scotch family. Entered the army (1785); governor of Roman republic (1798); prominent in the service of Napoleon, although for a time in disgrace through defending Moreau; broke Austrian center at Wagram; remained faithful to the Bourbons during the Hundred Days.

MACDONOUGH, THOMAS (1783-1825). American naval officer; born in Delaware; served during the Tripoli War; one of the seventy who captured the Philadelphia; in command at Lake Champlain; defeated the British at Plattsburg (September 11, 1814).

McDOWELL, IRVIN (1818-1885). An American soldier; born near Columbus, Ohio; served in the Mexican War; brigadier general in the Civil War; commanded at Bull Run and badly defeated; superseded by McClellan; gained honors at Cedar Mountain and second Bull Run; major general (1872).

MACEO, ANTONIO (1848-1896). Cuban patriot born in Santiago de Cuba of respectable mulatto parents. In the Ten Years' War (1868-1878) rose to rank of major general; refused to sign Peace of Zanjon, and subsequently lived in United States, Cuba, and Costa Rica. Returning to Cuba in March, 1895, Maceo won several brilliant victories over the Spanish, notably in Pinar del Rio province, but was killed while crossing the "trocha" to join Gomez in Havana province.

MACMAHON', MARIE EDME PATRICE MAURICE DE, DUKE OF MAGENTA (1808-1893). A marshal of France, and second president of the third republic. After serving with distinction in Algeria, he was commissioned governor general (1864-1870) of the province; sent to Crimea (1855), he was leader of the successful attack on the Malakoff (September 8), and on his return to France received the Grand Cross of the Legion of Honor, and was made a senator. At Magenta (June 4, 1859) he turned an impending defeat, through the inefficiency of Napoleon, into a great victory, for which he was made marshal and Duke of Magenta, on the field; placed at the head of the first army corps in the Franco-German War (July, 1870), and on August 6 sustained a crushing defeat at Wörth, but conducted a noteworthy retreat; was given charge of a force of 120,000 men, and ordered to march to the relief of Bazaine. In this attempt he was surrounded and surrendered at Sedan. Returning from Wiesbaden, he took Paris from the Commune (March, 1871); succeeded Thiers as president of France (1873), resigning this office in 1879.

MACPHERSON, JAMES BIRDSEYE (1828-1864). An American soldier; born near Sandusky, Ohio; prominent on the Federal side in the Civil War. In the Tennessee campaign served as chief engineer on the staff of General Grant (1862), and aided in the operations against Forts Henry and Donelson; also fought in the battle of Shiloh; promoted to colonel (May 1, 1862); later (May 15) appointed brigadier general of volunteers. As a prominent leader in the Vicksburg campaign, he was appointed, through General Grant's influence, brigadier general in the regular army (August 1, 1863); afterwards commanded the army of Tennessee. In the Georgia campaign was second in command to General Sherman. Later engaged in a series of conflicts around Atlanta, in one of which (July 22, 1864), he was killed while reconnoitering.

MAESTRICHT, the capital of the Dutch province of Limburg. Maestricht has withstood many sieges. In 1576 it was captured and plundered by the mutineers from the Spanish troops. In 1579 it suffered another siege by the Spanish, who slaughtered nearly the whole population. In 1632 the Dutch were successful in an attempt to capture Maestricht, although they were opposed by two armies. On June 30, 1673, it surrendered to Vauban, who had laid siege to it for Louis XIV. The French appeared in 1748 and captured Maestricht; and in 1793 again besieged it, but without success.

MAGDEBURG (May 20, 1631). After a brave defense of their city, the inhabitants of Magdeburg, the capital of Prussian Saxony, were overpowered by Tilly and his army. For three days a horrible massacre was carried on; the city was burned and plundered and the people murdered and tortured by the merciless invaders. About 30,000 are said to have been slain.

MAGENTA (June 4, 1859). In a very severe fight at Magenta, a town of northern Italy, near Milan, the French and Sardinians defeated the Austrians. The allies are said to have lost 4,000 men; while the Austrian loss was 10,000 killed and 7,000 prisoners.

MAGNA CHARTA, THE. The Great Charter, said by Hallam to be the "keystone of English liberty," was granted by King John to the Barons at Runnymede (1215). The charter contains 63 clauses, and is partly remedial and partly "declaratory of the principal grounds of the fundamental laws of England." Its principal provisions are: (1) Security for per-

sonal freedom: "No free man shall be taken or imprisoned or dispossessed or outlawed . . . . . save by the judgment of his peers or by the law of the land"; (2) feudal obligations defined and limited; (3) law courts to be held at fixed places, assize courts established, and justice no longer to be sold, denied, or delayed; (4) no extraordinary taxation without consent; (5) one standard of weights and measures; (6) independence of the Church provided for. The Magna Charta was confirmed many times by different kings. The form appearing in the revised statutes is the confirmation by Edward I. (1297).

MAGRUDER, JOHN BANKHEAD (1810-1871). An American soldier; born at Winchester, Va.; graduated at West Point (1830); during the Mexican War was brevetted major (April, 1847) and lieutenant colonel (September, 1847) for gallantry at Cerro Gordo and Chapultepec. At the outbreak of the Civil War, he entered the Confederate army as colonel, winning the battle of Big Bethel. He became brigadier general (June, 1861) and major general (October, 1861). At the close of the war he entered the army of Maximilian in Mexico, as major general, serving until the fall of the empire, after which he settled in Houston, Texas.

MAGUAGA (August 9, 1812). After the attack of Van Horne's men at Brownstown, the Americans retreated and a second expedition under James Miller was sent to accompany Colonel Brush to Detroit. Near Maguaga, Michigan, they were attacked by a body of British, Canadians, and Indians, under Major Muir. In the struggle which followed, the Americans defeated the British and Indians.

MAHAN, ALFRED THAYER (1840-). Rear admiral (retired) United States navy and author of "Life of Admiral Farragut," "Life of Nelson," etc.; born at West Point, N. Y.; graduated United States Naval Academy (1859); served during Civil War; president of commission to select site for a navy yard on the northwest coast (1889); president of Naval War College (1886-1889, 1892-1893); retired at his own request (November 17, 1896); during war with Spain was a member of the naval war board; delegate to Hague Peace Conference (1889); rear admiral (1906).

MAINTENON (*mahnt'non*), **FRANCOISE D'AUBIGNE, MARCHIONESS DE** (1635-1719). Born in Niort, France. The second wife of King Louis XIV. of France. She went to Paris from Martinique in 1645. In 1651 she married the poet Scarron. In 1684 she married the king privately and was never publicly acknowledged as his wife.

MAINZ (October 20, 1792). Without the use of a single siege gun, the French secured the surrender of Mainz, a town of western Germany, near Frankfort, and were welcomed into the place by the partisans of the republic.

MAJUBA HILL. The scene of a British defeat by the Boers in the first Boer war (February 27, 1881). General Sir G. P. Colley, the commander, and 92 soldiers were killed, and 150 wounded and taken prisoners. Boer loss was 130 in all.

MALAKHOFF (September 8, 1855). Toward the close of the Crimean War the allied forces of the French and English turned their attention to Malakhoff, a hill near Sebastopol which the Russians had fortified. The first attack was a failure, but about three months later the stronghold was taken by the French.

MALPLAQUET (September 11, 1709). The bloodiest battle of the War of the Spanish Succession was fought at Malplaquet, in France. The French, commanded by Villars, were defeated by Eugene and Marlborough, although the allies lost more men than the French.

MALVERN HILL (July 1, 1862). The last of the Seven Days' Battles near Richmond, Va., during the Civil War. The Federal armies united for the final struggle at Malvern Hill, with the approaches guarded by heavy guns. On July 1, 1862, the Confederates, led by D. H. Hill and Magruder, made an attack, but at every point they were repulsed with enormous losses. Finally the Confederates withdrew to Richmond and McClellan advanced to Harrison's Landing, below Richmond, on the James river.

MAMELUKES. A body of Turkish slaves introduced into Egypt by Sultan Es-Salih Eyyub in the thirteenth century. At his death the Mamelukes elected a sultan from their own people in 1250, and held the throne from then until 1517, when Egypt became a Turkish province. The line of slave kings is divided into two branches, the Bahri (1250-1389) and the Burji (1389-1517). In 1517 the Ottoman Turks, under Selim I., gained control of the country, but in order to conciliate the Mamelukes Selim placed them as beys at the head of twenty-four military provinces into which Egypt had been divided. In the eighteenth century they became almost independent. The Mamelukes under Murad Bey were defeated by Napoleon in the battle of the Pyramids, July 21, 1798, following which they retreated into Nubia. August 17, 1805, more than one hundred of the Mamelukes were massacred at Cairo by the Turks. Further massacres followed and Ibrahim Pasha dispersed those remaining.

MANILA BAY. Decisive battle of the world (1898). A victory of superb audacity by the American Pacific fleet under Admiral Dewey over the Spanish fleet under Admiral Montojo. On paper the fleets were nearly equal; in individuality and efficiency as wide apart as the poles. Dewey daringly drove in past the forts and torpedoes, relying on Spanish inefficiency; fought the Spaniards until every vessel went down fighting, and, without losing an American ship, annihilated Spanish rule in the Pacific, bringing the Philippines under the rule of United States. Opposed by a land force of 10,000 Americans, the city of Manila surrendered August 13.

MANSOURAH (February 8, 1250). The Seventh Crusade, undertaken principally by Louis IX. of France and his followers, landed in Egypt. At Mansourah, a city on the right bank of the Nile, they encountered the Mussulmans, and although victorious the first day, they were shortly afterward captured and made prisoners.

MANTEUFFEL (*man'toi-fel*), **EDWIN HANS KARL FREIHERR VON** (1809-1885). Prussian field marshal; born at Dresden. In 1827 he entered the army; took part in the war against Denmark (1864); became governor of Schleswig (1865); and commanded the Army of the Main against Austria (1866). Later led the German forces in south France, and was made field marshal (1873). Was assigned to the governorship of the province of Alsace-Lorraine in 1879.

MANTUA (February 2, 1797). After a siege of eight months by the French army, Mantua, in northern Italy, was surrendered by the Austrians.

MARAT (*mah-rah'*), **JEAN PAUL** (1744-1793). French revolutionist; born at Boudry, near Neuchâtel. Became an army physician, and was author of several treatises, both scientific and political. In 1789 he established the journal, *The Friend of the People*, and was forced to leave the country after the massacre of the Champ de Mars (1790). Brought to trial at the request of the Girondists (April, 1793), and acquitted, but was stabbed (July 13) by Charlotte Corday.

MARATHON. Decisive battle of the world, in which the Athenians and Plataeans under Miltiades defeated the army of Darius under Datis and Artaphernes (490 B. C.). The Greeks numbered about 10,000, the traditionary number of the Persians 100,000, doubtlessly exaggerated. The Greeks lost 192, Persians 6,400. The Persians were generally regarded as invincible. It was man to man, hand to hand fighting, in those days when numbers counted heavily. It was liberty and intellectual progress against Asiatic barbarism; the destiny of the world was practically at stake. The Greeks were disciplined to concerted action; the Persians were not. The discipline of the Greek wings broke down the slight wicker shields of the Persians, routed them, and swung round to a concerted attack on the center. Great personal courage was shown on each side but the steady immovable formation of the Greeks wore down their opponents, and the Persians fled to their ships; the principal loss of the Greeks being in an attempt to fire the fleet. A legendary hero is the runner who carried the news of victory to Athens, dropping dead delivering his message. From this rose the modern Marathon race. The modern athlete covers the distance in much less time than the Greek.

MARCELLUS, M. CLAUDIUS (? -208 B. C.) Roman general. During his first consulship (222 B.C.), he defeated the Insubrians in Cisalpine Gaul. As a praetor (216 B. C.), he defeated Hannibal at Nola, in Campania, showing that the great general was not invincible. Again consul (214 B. C.), and as commander in Sicily took Leontini and, in 212 B. C., Syracuse. In 209 B. C. Hannibal defeated him at Canusium, in Apulia. Consul for the fifth time (208 B. C.), and again commanded the Romans against Hannibal. Attacked from ambush and slain.

MARENGO, BATTLE OF. One of the most famous of Napoleon's battles, fought on June 14, 1800, near Alessandria, Italy. The French defeated the Austrians under General Melas. Napoleon crossed the Alps by the Great St. Bernard Pass with 40,000 men. Napoleon's supremacy in France was firmly established.

MARION, FRANCIS (1732-1795). American soldier; born at Winyah, near Georgetown, S. C. Took

part in the defense of Fort Moultrie, and participated in the unsuccessful attack on Savannah (1779). Governor Rutledge made him brigadier general of the state forces in South Carolina. Sat in the South Carolina Legislature (1782-1790), and was a member of the Constitutional Convention (1790).

MARIUS, GAIUS (about 156-86 B. C.). A Roman general. Of obscure origin, he gained office in Rome; married the aunt of Julius Caesar; subdued the robber tribes of Spain; successfully closed the Jugurthine War; and rose to be the most conspicuous man in the Roman army. He was seven times consul of Rome; defended Rome against the Cimbri and other tribes from the north; annihilated the Teutones in a two days' battle at Aquae Sextiae—now Aix—where 200,000 were slain; destroyed the Cimbri at the Raudian Fields in 101 B. C.; and he received the highest honors from the state. He was elected to his sixth term as consul in 100 B. C. When Sulla was given command of the army in the Mithridatic War, Marius was jealous of him and tried to deprive him of his command. Civil war in Rome resulted (88 B. C.). Sulla marched on Rome; Marius fled to Africa; returned to Rome and took the city; for five days and nights his band of 4,000 slaves kept up the slaughter of the Roman aristocracy. Marius and Cinna were elected consuls in 86 B. C., but Marius lived only seventeen days of his term.

MARIX, ADOLPH (1864-). Rear admiral United States navy; born at Dresden, Saxony; graduated United States Naval Academy (1886); served on European and Asiatic stations; judge advocate of Maine court of inquiry; captain of port of Manila (1901-1903); during the war with Spain commanded U. S. S. Scorpion, and received promotion for "conspicuous bravery."

MARLBOROUGH, JOHN CHURCHILL, DUKE OF (1650-1722). English commander; born at Ashe in the Parish of Musbury, Devonshire. Was made a colonel of foot in the English army (1678); commanded English forces in Ireland (1689); and through court influence, and unquestioned ability rose rapidly to high rank. Aroused much suspicion after the coronation of William III. (1689) by supporting alternately both William and James II. In the war of the Spanish succession Marlborough and Prince Eugene led the allied forces which won victories at Blenheim (1704), Ramillies (1706), Oudenarde (1708), and Malplaquet (1709).

MARMONT, AUGUSTE FREDERIC LOUIS VIESSE DE (1774-1852). Duke of Ragusa and a marshal of France; born at Châtillon-sur-Seine; entered the French army (1791); fought with Napoleon at Lodi, in Egypt, and at Marengo (1800); defeated the Russians in Dalmatia (1806); made commander of the army in Holland (1805); after the battle of Znaim was made a marshal; raised to chief command in the Peninsula (1811); defeated by Wellington at the battle of Salamanca (1812); fought at Lützen, Bautzen, and Dresden (1813); concluded a truce with Prince Schwarzenberg, leader of the allied armies, which forced Napoleon to abdicate; fled to Aix-la-Chapelle on the return of Napoleon from Elba; he came back later and lent his support to the Bourbons.

MARSTON MOOR (July 2, 1644). The Parliamentary forces met the Royalists on Marston Moor, in Yorkshire, England. Cromwell, in command of his picked troops, the Ironsides, gained a decided victory over the Royalists, under Prince Rupert. As a result of this battle the king lost his hold on the north of England, parliament winning that part of the country.

MASANIELLO (*mah-sa-ne-el'lo*), properly **TOMMASO ANIELLO** (about 1623-1647). An Amalfi fisherman; leader of the revolt (1647) against the duke of Arcos, the Spanish viceroy; the people disputed the right of the government to tax fruit, and refused payment; under Masaniello they arose and for nine days had control of the city of Naples, till the viceroy agreed to remove the oppressive taxes; he was assassinated by the viceroy's agents.

MARQUETTE, JACQUES (1637-1675). French missionary and explorer in America. Born at Laon, France. Entered the Jesuit Order at 17 years of age, and sent as missionary to Canada (1666); forwarded to upper lakes and founded Mission of Sault Sainte Marie (1668). Accompanied Louis Joliet, with seven men in two birch canoes (1673), to find the Mississippi. Went down the great river to 30° and fearing to meet Spaniards returned and ascended Illinois river, making portage to Lake Michigan, near Chicago. Returned after voyage of 2,250 miles. Founded mission among Illinois Indians (1674); taken sick and died (1675); body exhumed (1676) by Ottawa converts and buried in mission of Saint Ignace. Had great influence over Indians.

MASON AND DIXON'S LINE. The boundary line between the states of Maryland and Pennsylvania as run by two distinguished English surveyors, Charles Mason and Jeremiah Dixon, in the years 1763-1767. The line settled a dispute between the two states over their respective boundaries as described in their charters. Before the Civil War, the phrase, "Mason and Dixon's Line," was used to indicate the dividing line between the free and slave states, and at present the term continues to be used to designate the dividing line between the South and North. A re-survey of the line was authorized by Pennsylvania and Maryland in 1849, and again in 1900.

MAURICE, PRINCE OF ORANGE AND COUNT OF NASSAU (1567-1625). The youngest son of William the Silent; a famous general; born at Dillenburg in Nassau; was elected stadtholder (1584) after the assassination of his father; wrested many of Spain's possessions from her; distinguished himself by the defense of Ostend during three years; and finally forced the Spaniards to sign a truce of twelve years, and to acknowledge the independence of the United Provinces (1609). Maurice and Barneveldt were bitter political enemies, and the latter met his death because of this.

MAXEN (November 20, 1759). During the Seven Years' War the Prussian general, Finck, was surrounded and captured by Marshal Daun at Maxen, in Saxony.

MAZEP'PA, IVAN STEPHANOVICH (1640-1709). Leader of the Cossacks; born in Kiev; became page to John Casimir, king of Poland; aided Peter the Great against Turkey, and was made prince of the Ukraine; allied himself with Charles XII. of Sweden, and suffered a defeat at Pultowa (1709); with Charles he fled to Bender, where he died. Mazeppa has been made the hero of a poem by Byron.

MAZZINI (*mat-ze'nee*), **GIUSEPPE** (1808-1872). Italian patriot; born in Genoa. Became a member of the "Carbonari," a secret political society in which he became very influential. Was arrested as an enemy of the government, but released after six months on his agreement to leave Italy. He took up his residence in Marseilles, and began the organization of the league, "Young Italy" (1831). The object of this organization was to unite all Italy under a republican government. After the revolution of 1848, he went to Florence and, when Rome was proclaimed a republic, was elected triumvir. Rome, however, was soon taken by the French and Mazzini ultimately retired to London. Was arrested after engaging in an unsuccessful attempt to start an insurrection in Sicily (1870).

MEADE, GEORGE GORDON (1815-1872). An American general; born in Cadiz, Spain; graduated at West Point (1835); served in the Seminole War; assistant engineer of the Mississippi and Texan surveys (1837-1842); served during the Mexican War; appointed brigadier general of volunteers at the opening of the Civil War (1861); made major general (1862); commanded the army of the Potomac (1862); and defeated the Confederates at Gettysburg (1863), the most important battle of the war. He died in Pennsylvania.

MECCA. One of the oldest cities of Arabia and the capital of the Hedjaz. The holy city of the Mohammedans, and the scene of their annual pilgrimage. The visitors during this pilgrimage sometimes number 100,000. The center of the city is the Great Mosque, and the Kaaba, the temple of Mecca, is inside this area. In 682 the city was vainly besieged by Hosein, for the caliph Yezid, and was taken in 692 by Abdelmelek. The flight of the prophet Mohammed from Mecca to Medina, 622, is called the Hegira. In 630 he returned and took Mecca from the Koreish. The city was sacked in 930 by Karmathians. From this time it was under the rulers of Egypt, and finally it came to be ruled by the Ottoman sultans, although the sherif or head of the descendants of the Prophet, is the real governor. In 1803 the city fell into the hands of the Wahabees, but they were expelled by the Pasha of Egypt in 1813.

MECHANICSVILLE (June 26, 1862). Expecting to be joined by Jackson, Gen. A. P. Hill crossed the Chickahominy river to Mechanicsville, just north of Richmond, Va., where the second struggle of the Seven Days' Battles was fought. Here, on June 26, 27,000 Federals under Fitz-John Porter defeated the Confederates. The latter lost 1,500 men in the conflict; the former, 361 men.

MECKLENBURG DECLARATION OF INDEPENDENCE. A series of resolutions drawn up at Charlotte, Mecklenburg County, N. C., May 20, 1775, by a convention of delegates from each militia company in

the county. They were in sentiment a forerunner of the formal Declaration of 1776.

MEDINA. Second capital of the Hedjaz in western Arabia, and second in sacredness to Mecca, for it was Medina that received the prophet Mohammed on his flight from Mecca in 622. The Prophet's Mosque, El-Haram, inclosing the tomb of Mohammed, is the most important building of the city. This mosque was destroyed by fire in 1257 and rebuilt 1258-1288. In 1487 it was restored by Khaid Bey of Egypt. The Turkish sultans conquered the city in the sixteenth century, Saud, the Wahabite general, gained possession of Medina in 1803, but it was reconquered by Tussun Pasha in 1815. As in Mecca non-Mohammedans are strictly forbidden the sacred city, but some not of the faith have ventured to enter in spite of this mandate, and to these we owe our knowledge of the interior.

MEERUT, MUTINY AT (May, 1857). The mutiny of the sepoys, or native soldiers, in India, was caused by the ill-feeling regarding improvements and changes brought about by the Europeans in their country. The direct cause was the refusal of the sepoys to take their cartridges (because it was rumored that the cartridges had been greased with the fat of pigs) and the subsequent court-martial of those who refused. Regiment after regiment killed its officers and joined the mutineers, who conducted a fearful massacre of all the Europeans they could reach.

MERRIMAC, THE. A United States frigate sunk when the Federal government abandoned Norfolk Navy Yard (1861); raised and converted into a Confederate ironclad and renamed the Virginia. She destroyed the Congress and Cumberland at Newport News (March 8, 1862); met the Monitor in Hampton Roads (March 9) and withdrew after four hours' fighting; destroyed when the Confederates left Norfolk Navy Yard (May 11, 1862).

MERRIMAC and MONITOR. See HAMPTON ROADS.

MERRITT, WESLEY (1836-). American soldier; born in New York City. Prominent in the Civil and Spanish-American wars. He was placed in command of the United States forces in the Philippines (1898); assisted the Peace Commissioners at Paris (1898); retired in 1900.

MESSINA (anciently, Messana). Messina, a city on the northern coast of Sicily, has been the scene of much conflict. (1) In 396 B.C. Dionysius began to annoy the Carthaginians by attacking one of their Sicilian cities. Himilco, with a great fleet and army from Carthage, captured Messina, and although the inhabitants escaped, the city was completely destroyed. (2) In 264 B.C. a band of mercenaries, called Mamertines, captured Messina, slew the male inhabitants, and kept the women for themselves. (3) King Ferdinand, in suppressing a revolution among his subjects, bombarded and captured Messina in September, 1849.

METAURUS. Decisive battle of the world, in which Hasdrubal, brother of Hannibal, was defeated by Caius Nero and Marcus Livius (207 B. C.). Along the shores of the Adriatic, near Rimini, Hannibal's brother led his varied host from the Pyrenees, Rhone, Alps, and Po, to help the great Carthaginian crush the growing power of the Roman Empire, and make Punic power supreme. Rome stood at bay for eight years, Hannibal finally waiting the arrival of Hasdrubal's reinforcements. The consular army of Livius harassed Hasdrubal, who proposed to Hannibal to unite the two armies in South Umbria and swing round against Rome an overwhelming force. The Consul Nero made a marvelous forced march, reinforced Livius, caught Hasdrubal in disorganized retreat, defeated him, sending his head to Hannibal as news of the catastrophe. Thus he saved Imperial Rome and broke the power of Hannibal. Nero's march is still considered "unparalleled."

METZ. (1) 1552-1553. Emperor Charles V., in his war with Henry II., laid siege to Metz, in Lorraine, which had been taken by the French. The duke of Guise conducted its defense by the French, and after a siege of four months Charles V. was obliged to retreat. (2) August 19-October 27, 1870. During the Franco-German War Metz was surrounded by German troops, which prevented the escape of General Bazaine. The French held Metz for about two months, when, the provisions having given out, they were obliged to surrender. Negotiations resulted in the capitulation of the town and its forts with all the materials of war, and the French army as prisoners.

MEXICAN WAR. Between the United States and Mexico (1846-1848). It resulted from Mexican outrages on American citizens, the recognition by the United States of the independence of Texas (1837), and of its annexation by the United States (1845). The United States claimed the Rio Grande as the boundary of Texas; the Mexicans, the Nueces. The United States leaders were Generals Zachary Taylor, Scott, and Franklin Pierce. The Mexican leaders were Generals Ampudia, Arista, and Santa Anna. The war was closed by the Treaty of Guadalupe Hidalgo.

MEXICO. Largest city in Latin North America. Founded (about 1325) when the Aztecs, looking for a favorable site, saw an eagle perching on a cactus, devouring a snake. Its name, Tenochtitlan, meant "cactus on a stone"; changed to Mexico in honor of their war god Mexitli. Mud and rush houses succeeded by stone edifices on piles (1450); had 50,000 buildings and several hundred thousand population on arrival of Spaniards (1519). It was 12 miles in circumference, intersected by canals, connected with mainland by six long solid causeways; essentially a lacustrine city until the subsidence of Lake Texoco left it high and dry. Almost destroyed by Cortez (1521); who then employed friendly natives to rebuild on same site. Under Spanish domination it had 15,000 population (1600); 120,000 (1800). Captured by United States (1847) after the battle of Chapultepec; and by French forces (1863). With a history extending from uncertain Aztec tradition, after three centuries of Spanish dominance and sixty years of spasmodic revolution it has become the center of a unique political system, and of an intellectual and industrial development unparalleled by any other city in Latin North America. It is the seat of numerous literary and scientific institutions and one of the most promising cities on the Western continent.

MIAMI TOWNS (October 17-22, 1790). After the close of the Revolutionary War, the colonists continued to suffer much from the Indians along the Ohio river. In 1790, an expedition led by General Harmar started for the Miami settlements near the place where the St. Mary and St. Joseph rivers flow into the Miami. They found the towns deserted, but plundered and destroyed them. After several unsatisfactory encounters with the Indians, in which many were killed and wounded, the militia returned home.

MILES, NELSON APPLETON (1839-). American soldier; born at Westminster, Mass. Served through the Civil War; at Antietam, Fredericksburg, Chancellorsville, and Spottsylvania. He then served through the Indian wars, and succeeded General Schofield as the commanding general of the army (1895). Commanded the United States troops at Chicago during the strike riots (1894). Represented the United States at Queen Victoria's Jubilee (1897). During the Spanish-American War he directed the occupation of Porto Rico in person, defeating the Spanish forces in two weeks. Raised to lieutenant general (1901), and made a tour of inspection of the Philippines (1902-1903). Retired August, 1903.

MILLER, JOSEPH NELSON (1836-1909). Rear admiral (retired) United States navy; born at Springfield, O.; graduated United States Naval Academy (1856); served in Civil War; chief of staff of Southern squadron, Pacific fleet (1870-1872); commandant navy yard, Boston (1894-1897); naval representative at jubilee of Queen Victoria (1897) with Brooklyn as flagship; commander-in-chief of Pacific fleet (1897-1898); rear admiral (March 21, 1897); retired (1898).

MILLESIMO (April 14, 1796). Bonaparte, in his campaign in Italy, defeated the Austrians at Millesimo.

MILLIKEN'S BEND (June 6, 1863). In the Federal campaign against Vicksburg, Miss., Grant reduced the garrisons at the various forts in order to increase his own army. On June 6 a party of Confederates under General McCulloch attacked the fort at Milliken's Bend, on the Mississippi river, in Louisiana, which was held by a small garrison, mostly negroes. Just as the attack was made two gunboats appeared before the fort and drove off the assailants. The Federal loss was about 428 men.

MILL SPRING (January 19, 1862). With a detachment of the Confederate troops at Mill Spring, Ky., General Crittenden set out to meet General Thomas, who was advancing with 8,000 Union men. On January 19, 1862, the armies met and immediately opened fire. After a desperate struggle the Confederates retreated to their camp, and during the night crossed the Cumberland river and fled. The Confederate loss was 529 men; the Unionist, 246 men.

MILTIADES. Famous Athenian general and son of Cimon. As satrap of the Chersonesus he helped Darius I. in his attack upon the Scythians in 513? B. C. He took Lemnos from the Persians and when the fleet appeared he fled to Athens. He was chosen one of the ten generals for the year 490 B. C. and defeated the

Persians at the battle of Marathon. He was then intrusted with a fleet of fifty ships to punish the people of Paros. The expedition was a failure and Miltiades was fined fifty talents. Unable to pay the fine he was thrown into prison and died from an injury received at the island of Paros.

MINDEN (August 1, 1759). In the fourth campaign of the Seven Years' War the French were completely defeated at Minden, in Prussia, by Prince Ferdinand of Brunswick with six English regiments.

MINIE, CLAUDE ETIENNE (1814-1879). A French military officer and inventor; born in Paris; entered the army, serving in Algeria; became captain in 1849; made superintendent of the school of ordnance at Vincennes (1852); appointed by Egyptian government superintendent of small arms factory and school of gunnery at Cairo (1858); invented the Minié rifle (1849), which was adopted by the French government.

MINISINK (July 22, 1779). On July 19, 1779, a band of Indians and tories led by Joseph Brant, suddenly attacked Minisink, a village in Orange Co., N. Y., and plundered and burned the settlement. A body of militia pursued, and on the 22d overtook, the Indians. A sharp conflict followed, in which the militia were practically annihilated, only 30 escaping.

MISENO, CAPE. A promontory projecting into the Bay of Naples on the northwest, and connected with the mainland by a narrow strip of coast, nine miles southwest of the city of Naples. On it are the ruins of the ancient city and naval station of Misenum, made by Augustus for a division of the Roman fleet; he also constructed a large harbor for the purpose. The Saracens destroyed the town in 890.

MISSIONARY RIDGE (November 25, 1863). After the battle on Lookout Mountain the Confederates moved to Missionary Ridge, southeast of Chattanooga, Tenn., where on November 25 they were attacked by the Federals under Sherman. The battle was severe and continued throughout the day, resulting in the rapid retreat of the Confederates with a loss of 9,000 men.

MISSISSINIWA (December 17, 18, 1812). When the Americans learned that a band of Indians were encamped along the Mississiniwa river, in Indiana, Lieutenant Colonel Campbell was sent with an army to dislodge them. On December 17th they arrived at an Indian town on the Mississiniwa, and after a short conflict burned the town. Early on the following day Campbell's troops were attacked by a large number of Indians. The engagement lasted about an hour, and resulted in the utter rout and defeat of the Indians.

MISSOLONGHI (April, 1826). Ibrahim Pasha entered Greece with an army from Egypt, and after besieging Missolonghi, a seaport of Greece, succeeded in capturing the city.

MISSOURI COMPROMISE. An arrangement made between the free and slave states of the United States (March 6, 1820) by which Missouri, a slave territory, was admitted to statehood, but providing that slavery should not exist in the rest of the Louisiana territory north of 36° 30′ North, which was the southern boundary of Missouri. The measure was passed after a long and vigorous debate.

MITCHEL, ORMSBY MACKNIGHT (1810-1862). American general and astronomer; born at Morganfield, Ky.; graduated at West Point (1829); assigned to duty at Fort Marion, Fla. (1831); left the service and became professor of mathematics, astronomy, and philosophy in Cincinnati college; recorded results of observance of stars and comets (1854-1859); at the outbreak of the Civil War he assumed command of a division of General Buell's army; made major general (1862); commanded the department of the South (1862); died of yellow fever.

MITHRIDATIC WARS. Wars between Rome and Mithridates, king of Pontus. First Mithridatic war (88-84 B. C.); second (83-81 B. C.); third (74-64 B. C.). Rome incited the king of Bithynia to invade the kingdom of Mithridates. The latter drove him out, and the Romans took up the quarrel. Mithridates defeated the Roman armies and drove them out of Asia Minor, then gave orders that all Romans and Italians in his kingdom should be put to death. Eighty thousand are said to have been massacred. Rome then took its usual thorough revenge and Mithridates was completely subdued. In the second war Murena, a Roman, invaded the territory of Mithridates, but Sulla ordered the war to be discontinued by Rome. The third arose over a dispute of succession to the throne. Mithridates took his own life after defeat in it, and the rebellion of his son, Pharnaces.

MITYLENE (427 B. C.). In order to put down the revolt of Lesbos, an island off the coast of Asia Minor, the Athenians fitted out as large a fleet as they possibly could and laid siege to Mitylene, the chief city of Lesbos. The inhabitants were finally forced to surrender; the leaders of the revolt were put to death and the land divided among Athenian landlords.

MOBILE BAY. (1) August 5, 1864. In January of 1864, Admiral Farragut returned to the Gulf coast to continue his naval operations. His desire was to capture Mobile, an important Confederate stronghold on the coast of Alabama, and to this end he began making preparations. On August 5 he ordered the fleet to make an attack, and after a desperate struggle the Confederate ships in Mobile Bay were overpowered and destroyed or captured. The forts which guarded the city surrendered later, after brief bombardments, and 104 guns and 1,464 prisoners were taken by the Federals. (2) April 9, 1865. After Johnston's surrender to Sherman, hostilities in the South continued for some time. In March, 1865, Canby led an expedition against Mobile. By the 9th of April the two forts which protected it had been forced to surrender, and on the 11th the city was evacuated.

MOGUL EMPIRE. May be said to have been founded (1526) by Babar, who conquered northern India and some of the central provinces. India finally passed from Afghans to Moguls in 1556, the real founder of the Mogul Empire being Akbar the Great, who reigned (1556-1605), and organized the many discordant petty states into an empire, partitioned it into provinces, and placed over each a governor or viceroy, with full civil and military control. Other important princes were Jehangir (1605-1627), Shah Jehan (1628-1658), and Aurungzebe (1658-1707). The Great Mogul Shah Alam was in 1803 deprived of his throne, and surrendered even the appearance of authority in 1827, becoming a pensioner of the British. At the outbreak of the Sepoy Mutiny Mohammed Bahadur, the last of the dynasty, was invested with imperial dignity at Delhi, but for his complicity in the mutiny was in 1857 condemned and transported to Rangoon, where he died in 1862.

MOLTKE (*molt'ka*), **HELMUTH KARL BERNHARD, COUNT VON** (1800-1891). "The Silent." Prussian field-marshal; born at Parchim in Mecklenburg-Schwerin; entered the Prussian service (1822); sent to reorganize the Turkish army (1835); chief of the general staff in Berlin (1858-1888); remodeled the Prussian army; the successful wars with Denmark (1863-1864), with Austria (1866), and with France in 1870-1871 proved his preëminence as a strategist. Moltke was made field marshal in 1871, and received a large grant of money as a reward for his services; retired in 1888, but still held the office of chairman of the National Defense Commission.

MONCK, CHARLES STANLEY, VISCOUNT (1819-1894). Born at Templemore, Ireland; called to bar (1841); member of Parliament for Portsmouth (1852-1855); lord of treasury (1855-1858); governor general of Canada (1861). Reappointed 1867 on confederation of provinces into Dominion and resigned the following year. Served on Irish education commission (1871). Succeeded his father to Irish peerage (1849); made a viscount in peerage of Great Britain (1866).

MONDOVI (April 22, 1796). Mondovi, a city of Italy, was the scene of a battle in which Bonaparte defeated the Sardinians.

MONITOR, THE. The first successful ironclad in the history of the United States. Built by John Ericsson at Greenpoint, L. I., and launched January 30, 1862. Commanded by Lieutenant John L. Worden when she engaged the Virginia (the converted Merrimac) in an indecisive battle of four hours. On December 31, 1862, she sank in a wind storm while on her way to Beaufort, N. C.

MONK, GEORGE, DUKE OF ALBEMARLE (1608-1670). English general; restored the monarchy under Charles II. (1660). On the death of Cromwell he entered London, called together the members of the Long Parliament and caused Charles to be recalled.

MONMOUTH (June 28, 1778). During the American Revolution, Monmouth, in New Jersey, was the scene of an important battle between the British commanded by Sir Henry Clinton and the Americans led by Charles Lee. The British had broken the American line, and Lee had ordered a retreat, when Washington appeared, quickly rallied the troops and personally led them to a fresh attack which forced the British to retreat. During the night Clinton withdrew and started toward the coast.

MONMOUTH, JAMES SCOTT, DUKE OF (1649-1685). Son of Charles II.; born at Rotterdam; created Duke of Monmouth (1663); and married to the countess of Buccleuch (1663); succeeded Monk as captain general (1670); defeated the Covenanters at Bothwell

Bridge, in Scotland (1679); received as the people's choice as successor to the throne (1680); went to Holland (1684), where he remained until the death of Charles; asserted his right to the throne as James II.; met the royal troops at Sedgemoor, where he was defeated; he was executed on Tower Hill (1685).

MONS. (1) The French army, under Louis of Nassau, had captured Mons, an important city of Belgium. But they were unable to hold the city against the Spaniards, and on September 19, 1572, Louis of Nassau abandoned it, whereupon the Spaniards brutally massacred and pillaged the inhabitants. (2) In 1691, during the war between Louis XIV. and the Grand Alliance, Mons was besieged and captured by the French. (3) October 20, 1709, Mons surrendered to Marlborough and Prince Eugene, and (4) in 1745 was again taken by the French.

MONTCALM DE ST. VERAN, LOUIS JOSEPH, MARQUIS DE (1712-1759). French general; born at Candiac near Nîmes; entered the army, and served in Italy and Germany; assumed command of French troops in Canada (1756); captured Forts Ontario (1756) and William Henry (1757); defended Fort Ticonderoga (1758) against the English; was besieged at Quebec for six weeks by the English under General Wolfe, and was defeated on the Plains of Abraham, where both he and General Wolfe were mortally wounded (1759). The fall of Quebec marked the end of the French power in Canada.

MONTEREY (September 21-24, 1846). During the war between the United States and Mexico, General Taylor marched against Monterey, a city of Mexico, which was strongly fortified by the Mexicans. For three days the Americans conducted an active bombardment and the Mexicans were forced to surrender. The Mexicans were given seven days to evacuate the city, leaving ammunition and supplies, together with the city fortifications, in the possession of the Americans.

MONTEZUMA I. (1390?-1464). A celebrated war chief of ancient Mexico. He was the son of a ruler of the city of Mexico; became famous as a warrior; elected "emperor" (1436) and during his reign extended Mexico from the Pacific Ocean to the Gulf of Mexico. He beautified the city and constructed vast systems of dams to prevent floods.

MONT'FORT, SIMON DE (1208-1265). A noted English statesman; born in France; inherited the title of Earl of Leicester from his grandmother; came to England to receive his estates (1229); under the leadership of Earl Simon the barons drew up the Provisions of Oxford which Henry III. swore to observe, then declared null and void; De Montfort defeated the king's army at Lewes (1264); summoned a parliament (1265) in which for the first time all classes were represented; at the battle of Evesham De Montfort and the barons were defeated and it was here that the great leader met his death.

MONTGOMERY, RICHARD (1736-1775). An American soldier; born near Feltrim, Ireland; entered the British army (1754); fought in the French and Indian War (1757-1760), and at the siege of Louisburg; sold his commission as captain and settled in New York (1772); adopted the American cause and served in the first provincial congress (1775); as brigadier general he commanded the Northern department (1775); captured St. John (1775) and Montreal (November 12, 1775); with Arnold made an assault on Quebec (December 31, 1775), and was killed at the head of the main assault.

MONTREAL. Principal city of Canada. Jacques Cartier (1535) ascended the St. Lawrence and found the Indian village, Hochelaga, at the foot of a mountain, which he named Mount Royal. When Champlain visited the spot (1603), the village had been destroyed. He established eight trading posts there (1611). The permanent settlement was founded (1642) through the missionary zeal of Jerome le Royer de la Dauversiere, a French nobleman, and Jean Jacques Olier, a French priest, by whom the island of Montreal was purchased when it was named Ville-Marie de Montreal. They founded religious communities (1) to teach nuns, (2) convert the Indians, and (3) train hospital nuns. De Maisonneuve was appointed governor. For many years the city was engaged in wars with the Iroquois. Aid from France broke the power of the red men (1665). It became the center of fur trade, receiving the name "Mother of Cities" (1672). The English from New York unsuccessfully attacked it (1690), but (1760) captured it as well as the whole of Canada. The Americans led by Montgomery took possession of it (1775), but in 1776 were forced to abandon the city and leave Canada. In the War of 1812, Montreal was threatened, but her forces checked all advances. It was the capital (1844); a riotous mob ended its power (1849). A great fire devastated nearly four acres of the beautiful city (1901).

MONTROSE, JAMES GRAHAM, MARQUIS OF (1612-1650). Scotch noble; royalist leader under Charles I.; born in Edinburgh, Scotland. Was opposed to Charles until in 1641 he became a royalist. The king made him lieutenant general of Scotland (1644), and in the same year he won six battles over the Covenanters. Was defeated, however, in 1645 by David Leslie at Philiphaugh. Again entered Scotland (1649), but the next year was defeated at Invercarron, taken prisoner, and executed.

MONTS, PIERRE DU GUAST (1560-1611). French explorer and colonizer of Canada; member of household of Henry IV.; governor of French Company of Canada (1603); given exclusive trade in furs between 40° and 50° N., power to make land grants in Acadia; with Champlain and others explored Bay of Fundy (1604), founded Port Royal (now Annapolis); returning to France (1605), found his privileges withdrawn, though he continued to send out expeditions till Henry's death (1610).

MOORE, SIR JOHN (1761-1809). A British general; born in Glasgow; entered the army, serving in the West Indies and Ireland (1798); and in the Egyptian campaign (1801); received the Order of the Bath (1801); served in Sicily and Sweden (1802); assumed chief command of the English army in Spain (1808); received orders to aid Spain in driving the French from the peninsula; forced to retreat to Corunna, a distance of 250 miles from Astorga, through an almost impassable mountainous country; was attacked by the French under Soult (1809) and repulsed them. Moore fell, mortally wounded, in the hour of victory. Wolfe's well-known poem commemorates his burial in the citadel, previous to the embarkation of the British troops.

MOORS. The Moors first appear in history as the allies of the Vandals in their attacks upon Roman Africa. The Arabs conquered and converted them after a severe struggle in the eighth century. They joined their conquerors in the attack upon Spain. In the tenth century they were supreme in northwestern Africa. At the close of the eleventh century the Moors crossed over into Spain and as the sect called Almoravides swept away the Arab kingdoms which had arisen on the ruins of the caliphate of Cordova. In about a half century their kingdom fell to pieces and the Moorish sect Almohades became dominant in Morocco and Spain. They in turn were shattered in 1212 at the battle of Navas de Tolosa, and the remnants of the kingdom of the Moors were merged into the kingdom of Granada, which rose to a remarkable height of splendor. In 1492 they yielded to Ferdinand and Isabella. Those who refused to embrace Christianity were expelled and became pirates of the Mediterranean. Those who remained were known as Moriscos. They lived as peaceful and valued citizens of Spain until the cruelties of Philip II. drove them to revolt in 1568-1570, when they were treated with great cruelty by Duke John of Austria. In 1609 the Moriscos were expelled and crossed over to Africa.

MORGAN'S RAID (July, 1863). During the summer of 1863 a band of Confederates led by Gen. John H. Morgan conducted an expedition through part of Kentucky and Ohio, devastating the country and terrifying the inhabitants. An army of Federals was soon in hot pursuit, and gunboats were sent to guard the Ohio river. On July 19 Morgan was forced into battle at Buffington Ford, on the Ohio river, and 800 of his men captured. The remainder fled toward New Lisbon, where they were overpowered and forced to surrender. Morgan was sent to the penitentiary at Columbus, but he escaped and began to plan another raid. On September 4, 1864, he was brought to bay near Greeneville, Tenn., and killed. During the expedition his men had slain 38 people, and destroyed $50,000 worth of property. Morgan had lost 2,000 men, and his equipment and plunder.

MORGARTEN. A mountain slope between Schwyz and Zug in Switzerland. The Swiss defeated a stronger army of Austrians at this point in 1315.

MORRIS, ROBERT (1734-1806). The "Financier of the American Revolution"; born in Liverpool, England; came to America (1748); settled in Philadelphia and entered a mercantile house, of which he became a partner (1754); became warden of the port of Philadelphia (1766); at the outbreak of the Revolution he served as a member of the Pennsylvania Committee of Safety (1775); served as a member of the Continental Congress (1776); and signed the Declaration of Independence (1776); chosen superintendent of

finance (1781); borrowed large sums of money to finance some of the important campaigns of the war; founded the bank of North America (1781).

MOSCOW (September 15-19, 1812). Repeated victories for the French in Russia opened the route to Moscow, and on September 14, 1812, Napoleon and the French army triumphantly entered the city. Shortly after their arrival fire broke out in different sections of the city and it was soon discovered that orders had been given to burn the city so as to force the invaders to flee. Incendiaries were busy in all parts of the capital, and their efforts were furthered by the changeable winds, which carried the flames first into one quarter and then another. There was nothing for the French army to do but leave the city, and on October 19, 80,000 men began their famous retreat from Moscow. The experiences of their march were horrible; overcome with cold and hunger, they dropped from the ranks by thousands, to be taken prisoners or torn to pieces by their starving comrades. When the campaign came to a close, 300,000 soldiers had been left beyond the river Niemen in Russian territory.

MOULTRIE, WILLIAM (1731-1805). An American soldier; born in South Carolina; appointed captain in the Cherokee expedition (1761); member of the Provincial Congress in 1775; became colonel of a South Carolina regiment (1775); erected a fort on Sullivan's Island, which was known by his name; defended this fort against British attack; made brigadier general; defeated the British at Beaufort 1779); held chief command in Charleston till General Lincoln arrived (1778); promoted major general (1782); governor of South Carolina (1785-1786 and 1794-1796).

MOUND BUILDERS. Hypothetical people supposed to antedate the Indians in the Ohio and Mississippi valleys; the latter is now regarded as the home of ancestors of tribes found by Spanish, French, and English pioneers. The mounds were mortuary or sacrificial.

MOUNTAIN MEADOWS MASSACRE. In Utah, 350 miles south of Salt Lake City, September 7, 1857. About 140 men, women, and children emigrating from Arkansas and Missouri to Southern California were fired upon by Indians and, it is said, disguised Mormons. They withstood the siege until the 11th when, on promise of protection by John D. Lee, Mormon bishop and Indian agent, they left the shelter of their wagons. All over seven years of age were killed. Lee was executed for the crime and the Mormon church suspected of complicity in it.

MT. GAURUS. One of the three great battles of the First Samnite War (343-341 B.C.) was fought on Mt. Gaurus, in Italy. The accuracy of the historic details regarding this struggle is doubtful.

MT. VESUVIUS. Volcano on the Bay of Naples, having a base 30 miles in circumference and two summits. Unrecognized as a volcano until its first eruption (79), when Pompeii was buried under about 20 feet of loose ashes, and Herculaneum covered by a torrent of mud; many coming to give aid were suffocated by the fumes. Eruptions occurred later covering the villages with lava and boiling water.

MUHLENBERG, JOHN PETER GABRIEL (1746-1807). American general and leader in the Revolutionary War; born at Trappe, Pa.; commander in chief in Virginia until the arrival of Steuben. He was in Congress (1789-1791, 1793-1795, and 1799-1801); collector of port of Philadelphia (1803-1807).

MUKDEN (March, 1905). The Japanese had defeated the Russians and occupied most of the important points in Manchuria, but it was not until the surrender of Lone Tree Hill that Mukden, the most important city of Manchuria, was evacuated by the Russians.

MUNDA (March 17, 45 B. C.). Caesar marched into Spain to suppress the Pompeians, and at Munda, now Monda, in southern Spain, won a decisive victory.

MURRAY, JAMES (1725-1794). British general; born in Scotland; fifth son of Lord Elibank. Entered the army (1740); sent in command of a brigade to Canada (1757); led left wing of Wolfe's army on Heights of Abraham battle (1759); successfully defended Quebec against superior French force (1760), and assisted General Amherst in reducing Montreal. Appointed governor of Quebec (1760); governor of all Canada (1763-1766); appointed governor of Minorca (1774); after a desperate defense capitulated Fort St. Philip (1782), to be tried by English court-martial and acquitted. Promoted to a full general (1783).

MUSGROVE MILLS (August 18, 1780). With a force of 200 Americans, Williams, Brattan, Clarke, and Shelby set out from Broad river, S. C., to disperse a band of Tories which were gathering at Musgrove's Mills, on the Enoree river. On August 18, 1780, they encountered the British and Tories and after a brief conflict the British were utterly routed.

MUTHUL (109 B. C.). The Romans, commanded by Metellus, entered northern Africa to assist the Numidians engaged in the Jugurthine War, and narrowly escaped defeat on the Muthul.

MUTINA (now Modena), in northern Italy. (1) A band of fugitive gladiators, led by Spartacus and armed with captured weapons, marched into northern Italy and at Mutina defeated the proconsul of Gallia Cisalpina (72 B. C.). (2) On April 27, 43 B. C., Mark Antony was defeated with heavy loss by Hirtius, a Roman consul, and retired into Gaul.

MYCALE (September 22, 479 B. C.). The Greeks gained a great naval victory over the Persians near Mycale, in Asia Minor.

MYCENAE. A very ancient city of Greece in the northeastern part of Argolis in the Peloponnesus. It is celebrated in legend as the capital of Agamemnon. About 468 B. C. it came into the hands of Argos. Mycenae was still partly independent, for during the Persian Wars it sent men to Thermopylae and Plataea, while Argos was friendly to Persia. The great Cyclopean Wall was not greatly injured when the city was destroyed by the Argives, and this with the "Lion Gate" and the domed tomb called the "Treasury of Atreus" are the most celebrated of Cyclopean architecture. No other site has yielded so great a variety of objects, or so complete a series of vases. The Greek Archaeological Society has continued the work of excavation begun by Heinrich Schliemann in 1876.

MYLAE (now Milazzo). 260 B.C. In a naval battle near Mylae, on the northern coast of Sicily, the Carthaginians were defeated by the Romans.

NAFELS (April 9, 1388). The Austrians entered the Glarus valley in Switzerland, and in an encounter at Nafels were defeated with a loss of 1,700 men.

NANA SAHIB (about 1820-?). One of the leaders of the Sepoy mutiny in India (1857). At the outbreak he traitorously offered assistance to the English and then headed a body of mutineers. He induced the European troops to surrender on condition that they would be carried to a place of safety and he then ordered the men to be shot. The women and children were imprisoned in Cawnpur. Havelock marched to release them, but before he reached them Nana Sahib caused them to be murdered and their bodies thrown into a well. His end is unknown.

NANSHAN (May 26, 1904). A series of careful movements on the Liao-tung peninsula, in China, culminated in a battle on the heights of Nanshan, not far from Dalny. The Russians held out for 16 hours, but were finally forced to retreat. The possession of this point made it easy for the Japanese to occupy Dalny.

NANTES, EDICT OF. Famous decree signed at Nantes by Henry IV. of France (April, 1598), granting certain privileges to his Protestant subjects. (For terms of the Edict, see Table of Treaties.) In force until its revocation by Louis XIV. (1685).

NAPIER, SIR CHARLES JAMES (1782-1853). A famous British general; son of Col. George Napier; born at Whitehall; entered the army and served during the Irish rebellion of 1798; received a command at Corunna, where he was taken prisoner by the French; served under Beckwith in an expedition against the United States (1813); engaged in the storming of Cambrai; resident governor of Cephalonia (1822-1830); ordered to command the army at Bombay (1841); with the close of the successful battle of Hyderabad the power of the rulers of Sindh was crushed, and the British became masters of the Sindh; Napier was made governor of the conquered territory; became commander-in-chief in India (1849-1850); quarreled with the directors of the East India Company and retired to England, where he died.

NAPIER, ROBERT CORNELIS, LORD OF MAGDALA (1810-1890). A British field marshal; born at Colombo, Ceylon; served in the first and second Sikh wars; distinguished himself at Lucknow; received chief command in central India (1858); served under Sir Hope Grant in the expedition to China (1860); for his brilliant work in Abyssinia (1868) where he captured the stronghold of Magdala, he was created Baron of Magdala; appointed commander-in-chief of the British army in India (1870); was promoted to the rank of field marshal (1883), and became governor of Gibraltar in 1876.

NARVA (November 30, 1700). Carl XII. of Sweden defeated Peter the Great of Russia in a battle at Narva, near St. Petersburg, on the coast of Russia.

NASEBY (June 14, 1645). At Naseby, in Northamptonshire, England, the Royalists, led by Charles I., were defeated by the Parliamentarians, under Cromwell and Fairfax.

NASHVILLE (December 15, 16, 1864). After the battle of Franklin, the Confederates led by Hood pursued General Schofield to Nashville, Tenn., which was occupied by Thomas and his army of 50,000. On December 15 Thomas advanced and gave battle to the Confederates, and after two days of skirmishing and maneuvering the latter were in full retreat toward Franklin. Thomas continued the pursuit until the Confederates crossed the Tennessee. The Confederate loss was about 5,000. The Federals lost between 3,000 and 4,000.

NAVARINO. The Bay of Navarino, on the southwest coast of Greece, has been the scene of two battles. (1) In 425 B. C. the Spartans were utterly defeated by the Athenians in a great naval battle. (2) During the War of Grecian Independence, the British fleet was destroyed by the English, French, and Russian navies here on October 20, 1827.

NAVARRETE (April 3, 1367). Pedro the Cruel of Castile, allied with Black Prince, defeated his brother, Henry of Trastamare, in a battle between Navarrete and Najara, in Spain.

NAXOS (376 B. C.). In a naval battle near the island of Naxos, in the Aegean Sea, the Athenians defeated the Lacedemonians, and the supremacy of the sea was restored to Athens.

NAZARETH (May 1, 1187). Battle between a small army of Crusaders and several thousand Turks. Almost all of the Christian knights were killed or captured. The Knights Templars, especially, suffered severely, sixty of the order being killed.

NEGROES (imported into the United States). In 1619 a cargo of negro slaves was landed at Jamestown. The growing needs of the South demanded more negro slaves and by 1714 the number had increased to about 58,850. Africa furnished the greater part of the slaves, although many were imported from the West Indies. In 1790 there were 757,208 negroes in the United States. Importations of negroes were forbidden by the Constitution in 1808, but Africans were smuggled into the country up to the time of the Civil War. The last cargo was landed on Jekyll Island, off Brunswick, Ga.

NEHAVEND or **NAHAVUND** (641). The fall of the Sassanid power in Persia dates from the battle of Nehavend, in western Persia, in which the king, Isdigerd III., was defeated by the Saracens. The Arabs called their success the "victory of victories."

NELSON, HORATIO, VISCOUNT (1758-1805). The most famous of English admirals; born at Burham-Thorpe, Norfolk, England (September 29, 1758); entered the navy at the age of 12; in 1777, was made second lieutenant; in 1779, captain; took a prominent part in the battle of Cape Vincent, and for his share in this great event received a knighthood of the Bath; in 1797, led an unsuccessful attack on Teneriffe; for his brilliant victory in the battle of the Nile (1798) he was created Baron Nelson of the Nile; commissioned a viscount for the victory of the Baltic, where, as second in command, he disobeyed orders directing his retreat; was mortally wounded at the famous battle off Cape Trafalgar, where his fleet gained a great victory over the French and Spanish. His last words were, "Thank God, I have done my duty."

NEW BRUNSWICK. Important Canadian province. First settled by Frenchmen on Bay of Chaleurs (1639). With Nova Scotia it formed the original French colony of Acadia taken by English (1654); restored to France (1667); re-ceded to English (1713) by Treaty of Utrecht. First British settlers were Scotch agriculturists and laborers (1764); reinforced by over 5,000 Loyalists driven from United States (1783); Nova Scotia and New Brunswick formed distinct colonies (1784); first legislative assembly of New Brunswick met at St. John (1786); united with Nova Scotia, Ontario, and Quebec (1867), thus becoming one of the original provinces of the Dominion of Canada. Capital and seat of government is Fredericton. Chief rivers are the St. John and the Miramichi.

NEWFOUNDLAND. A British colony in North America comprising the island of Newfoundland and its dependency, Labrador. Newfoundland was discovered by John Cabot for the English in 1497. English, French, Spanish, and Portuguese cod fisheries were established here. In 1583 Sir Humphrey Gilbert took formal possession of the island for England, but France refused to recognize the claim. By the treaty of Utrecht, in 1713, France admitted the sovereignty of England over the whole territory of the island, but the French retained the islands of Miquelon and Saint Pierre for fishing stations, with the exclusive right to the cod fisheries on the western coast. The English valued the island merely as a source of the fish supply, and settlements were practically forbidden. In 1832 representative government was conceded by England, and parliamentary government was granted in 1855. The French interpretation of the west shore rights prevented settlement by inhabitants of Newfoundland. The Anglo-French convention of 1904 accomplished a final settlement, by which France agreed to renounce her exclusive fishing rights on the west shore, but reserved the right to fish in territorial waters from St. John's Cape north to Cape Ray. French shipowners and fishermen received a compensation of $275,000.

NEW HAVEN (July 5, 1779). In 1779 a British expedition was sent to the Connecticut coast under General Tryon. They landed at West Haven, intending to proceed to New Haven, but the inhabitants resisted so vigorously that they were obliged to march around the town and enter by another route. At the same time more troops were landed at East Haven, the town was sacked, and the British sailed off with about 30 prisoners.

NEW LONDON (September 6, 1781). With a large British force, assisted by a fleet of thirty vessels, Benedict Arnold attacked and captured New London, on the coast of Connecticut, and burned nearly all of the wharves and stores.

NEW MADRID (March 13, 1862). When the Confederates at Columbus, Ky., heard of the fall of Fort Donelson, they moved to New Madrid, Mo., a well defended position under General McCown. On March 13, 1862, General Pope, with an army of 20,000 men and several heavy guns, began an active bombardment which forced the garrison to abandon New Madrid and retreat to Island No. 10.

NEW ORLEANS. (1) January 8, 1815. With reinforcements which swelled their numbers to 12,000, the British under Sir Edward Pakenham attacked New Orleans, on the Mississippi river, in Louisiana. The Americans were greatly outnumbered, but held a strongly intrenched position which compelled the British to approach across a much exposed plain. In the fighting which ensued, the British lost 2,400 men, including General Pakenham; while the Americans lost only 21 men. (2) April 24, 1862. During the Civil War the combined military and naval forces of the Federals led by General Butler and Admiral Farragut, made an attack upon New Orleans. The city was defended with two strong forts just below it, a fleet of 15 vessels commanded by Mitchell, and a heavy chain stretched across the river. For six days Farragut bombarded the forts without effect, and then decided to pass them. On April 24 the Federal forces were ordered forward, and in the midst of incessant firing from the forts all but three of the vessels made their way up the river and destroyed the Confederate fleet. This victory opened the way to the city, and on April 29, a detachment was sent ashore to take possession. May 1 the Federal troops occupied New Orleans, having lost 12 killed and 193 wounded.

NEY, MICHEL, DUKE OF ELCHINGEN AND PRINCE OF THE MOSKVA (1769-1815). A French marshal; born at Saarlouis (January 10, 1769); he made the campaign of 1792 with the army of the North, and rose to be lieutenant; contributed largely to the victories of Ulm, Eylau, and Friedland; served in the Peninsular War (1808-1811), proving one of the most capable officers opposed to Wellington; created Prince of Moscow for his conduct at the battle of Borodino (September 7, 1812); fought for Napoleon during the campaigns (1813-1814), but upon his abdication joined the government of Louis XVIII. Upon return of Napoleon he was induced to join his old chief; defeated by the English and their allies at Quatre Bras, but joined Napoleon at Waterloo (1815); soon after was captured and shot at Paris (December 7, 1815), on a charge of treason.

NICAEA (May 6-June 19, 1097). The first undertaking of the Crusaders was the siege of Nicaea, in Asia Minor; the first time the whole army had been brought together. Alexius, Emperor of the Greeks, allied to the Crusaders, brought vessels overland to the lake completing the blockade. After futile attempts, just as the Crusaders were about to take the city it surrendered to their ally, Alexius, who hoisted

his standard and announced his intention to hold it against the Crusaders.

NICE (Councils of). (1) Council of the Christian Church held at Nicaea in Bithynia. The emperor Constantine called the first one in 325. There were present of 1,800 bishops in the empire only about 318. At this council the time for observing Easter and the doctrine of the Trinity were settled, the Nicene Creed was adopted, and the Arians were condemned. Thus the divisions in the church were healed. (2) The second council of Nicaea was convened by the empress Irene and her son, Constantine, in 787. The council was attended by 375 bishops. The orthodox views as to image worship were reaffirmed.

NIEUPORT (July 2, 1600). The Dutch and English, under Prince Maurice, defeated the superior forces of the archduke Albert, the Spanish ruler of the Netherlands, at Nieuport, on the coast of Belgium.

NILE (August 1, 1798). The English fleet, under Admiral Nelson, defeated the French fleet, under Brueys, in the battle of the Nile, near Abukir, a village on the coast of Egypt. The French army was thus cut off from France, and the British controlled the Mediterranean.

NINETY-SIX (May and June, 1781). During the Revolutionary War, Ninety-Six, a village in South Carolina, was besieged by the Americans under General Greene. For almost a month the Americans kept the British there, but when news came that a large British army was coming, Greene withdrew.

NINEVEH. Capital of the Assyrian Empire, situated on the Tigris river opposite the present Mosul. The prophet, Jonah, preached against this city. Shalmaneser I. is known to have restored a temple of Ishtar at Nineveh (about 1300 B. C.), which is mentioned in the code of Hammurabbi. It was under King Sennacherib and his successors that the city attained the height of its glory. It fell before the combined strength of the Medes under Cyaxares, and the Babylonians under Nabopolassar. The year of the fall of the city is uncertain, but it was probably about 607 B. C. First excavations in 1842-1843 by Paul Botta proved disappointing, but more recent ones have brought to light the famous library of Asshur-bani-pal, as well as some of the finest specimens of Assyrian art.

NIUCHWANG. During the Boxer outbreak in China in 1900, the Russians poured into Manchuria and occupied Niuchwang, a town near Mukden. The Russians threatened a general assault, but the foreign residents interceded and allowed the Russians to enter peacefully, although not without some looting and skirmishing.

NODDLE'S ISLAND (May 27, 1775). In order to prevent the Americans from taking the live stock from Noddle's Island, Hog Island, and Snake Island, just northeast of Boston, a small force of British marines was stationed on Noddle's Island. A few colonists had been sent to remove the stock, but after firing upon and killing three of the marines they retreated to Hog Island. With the aid of reinforcements the colonists forced the marines to retreat.

NOLA (215 B. C.). An Italian city near Naples; noted for its remarkable resistance to Hannibal during the second Punic War.

NORDLINGEN. (1) November 6, 1634. A battle of the Thirty Years' War was fought at Nordlingen, a town of Bavaria, in which the Swedes were defeated by the Imperialists, under Ferdinand. (2) Later, August 3, 1645, another battle near there resulted in a victory for the French over the imperial German army.

NORFOLK. (1) January 1, 1776. Late in 1775, an expedition of British under Lord Dunmore plundered Virginia in the vicinity of Norfolk, its most prosperous town. The inhabitants of the state formed an army under Woodford and took possession of Norfolk and the important strongholds near there, forcing the British to withdraw. When reinforcements arrived from England, however, Dunmore immediately began a bombardment and set fire to Norfolk. The section left standing was burned by the Americans to prevent its occupation by the British. (2) May 10, 1862. When the Federal army marched toward Richmond, the Confederates destroyed the Merrimac and evacuated Norfolk, at the mouth of the James river. On May 10, a force from Fortress Monroe was sent to seize Norfolk, and the place was surrendered without resistance.

NORTHAMPTON. July 10, 1460, the Houses of York and Lancaster met in a battle at Northampton, England, in which Henry VI. was defeated and captured by the Yorkists.

NORTH ANNA CROSSING (May 23-27, 1864). From Spottsylvania, Grant's army moved south to the North Anna river, arriving May 23. There they encountered Lee in such a well chosen position that after a struggle in which the Federals lost 1,293 men, Grant withdrew. On the 27th, when Sheridan joined Grant, the Federal force started toward the Pamunkey river.

NORTHMEN. A name given by some to the Scandinavians, by others to the Danes, and by all to the Vikings or Sea-kings who committed such depredations in the countries on the North Sea and the Baltic. The Danes first appeared on the coasts of England about 787. In 795 they settled in some of the towns of Ireland. After 832 they paid almost annual visits to England. In 851 they passed their first winter there. After 866 they had firm footing in England. Ethelred I. and Alfred the Great curbed them and external peace followed these wars. In 991 the attacks began anew. Ethelred II. tried to buy them off and imposed on his people a tax called Danegeld to meet their demands. As they returned in larger numbers, demanding larger sums, he ordered a massacre of the Danes in all parts of England on November 13, 1002. This was followed by four invasions for revenge under Sweyn, king of Denmark, and the country was fearfully ravaged. Sweyn conquered the country in 1013 but died the next year. His son, Canute or Knut, carried on the war with Ethelred and his successor, Edmund Ironside, and conquered the country, and the country became Norse till 1042, when the last king died. The country then passed into the hands of the Saxons under Edward the Confessor. On his death in 1066 he was succeeded by Harold, Earl of Kent. Then William of Normandy, a descendant of the Norwegians who had settled in Normandy, took the country in the Norman Conquest at the battle of Hastings. The Danish Norsemen ravaged the coasts of Europe from the Elbe to the Garonne. Gottfried overran Friesland as early as 810, but Charlemagne overpowered them. About 820 they renewed their attacks and under the weak kings became the scourge of northwestern Germany and France. They plundered Hamburg several times, and the coast of the Frisians, and in 843 were firmly planted at the mouth of the Loire. They then swarmed up the great rivers and plundered the interior of the country. In 842 they were at Rouen. In 845 they went up the Seine and sacked Paris. In 885 no fewer than 40,000 of them in 700 ships went up from Rouen under Siegfried and stormed Paris for ten months; Burgundy was given over to them as a price of safety to Paris. Louis III., king of the West Franks, checked them at Saucourt in 881; Arnulf, the brave German monarch, defeated them near Louvain in 891; but that did not stop them. In 892 they were at Bonn; it is said they were even in Switzerland. In 844 they were in Spain, but were defeated near Seville by the Arab, Abd-ur-Rahman. In 859-860 they forced their way into the Mediterranean and visited and plundered the shores of Spain, Africa, the Balearic Isles, up the Rhone, into Italy, where they burned Pisa and Lucca, and even over to Greece. They, with Norwegian associates, made voyages to the north of Ireland, the Orkneys, Hebrides, and the Shetland Isles in the ninth and tenth centuries. About the same time they settled in the Faroe Isles and Iceland; thence Vikings crossed to Greenland in 983. About twenty years later they visited Vinland, now believed to have been the Nova Scotia coast, 500 years before Columbus. About 911 Hrolf or Rollo went out from Norway and compelled Charles the Simple of France to give him the land about the mouth of the Seine. This land became Normandy or the land of the Northmen.

NORTH POINT (September 12, 1814). After sacking Washington, General Ross and his British army embarked for Baltimore. They landed at North Point, about 12 miles from Baltimore, where they were met by 3,200 Americans under General Stricker. The battle continued for four hours and resulted in the retreat of the Americans to Baltimore.

NORWALK. On July 12, 1799, the British fleet, commanded by Tryon, appeared before Norwalk, Conn. A small band led by Capt. Stephen Betts met the invaders, but were quickly dispersed, and the British destroyed over $166,000 worth of property before quitting the town.

NOTIUM (407 B.C.). The Athenian fleet at Notium, in the Gulf of Ephesus, was completely defeated by the Lacedemonian fleet, under the command of Lysander.

NOVI. August 15, 1799, a battle was fought at Novi, a town of Italy not far from Genoa, in which Suvaroff, general of the allied Russian and Austrian armies, defeated Marshal Joubert and the French army.

NUMANTIA. The chief town of the Celtiberian people called Arevaci, in ancient Spain. It is on the Douro, near the present Soria, in Old Castile. The city is noted for its brave resistance to the Romans

under Scipio the Younger, who besieged it for fifteen months from 135 to 133 B. C., when at last it was starved into surrender, and then with the few remaining inhabitants was destroyed.

OAK GROVE (June 25, 1862). From June 25 to July 1, 1862, occurred the Seven Days' Battles in the vicinity of Richmond, Va. The first skirmish took place on June 25 at Oak Grove, on the main road from Richmond to Williamsburg. The Federals lost 67 men killed, 504 wounded, and 55 missing.

OATES, TITUS (1649-1705). The principal informer in the alleged popish plot; born at Oakham; pretended that he had discovered a plot of the Roman Catholics to murder Charles II. and make the duke of York king, to massacre the Protestants and burn London; innocent men were implicated and murdered, and London went wild with excitement; Oates was regarded as the "savior of his country," and for a time lived at Whitehall and received a pension; a reaction set in and Oates was imprisoned and fined (1683); stripped of his canonicals and flogged (1684), and received a life sentence; set free by the revolution of 1688, and received a pension of £300.

O'CONNELL, DANIEL (1775-1847). An Irish patriot and orator; born near Cahirciveen, County Kerry; entered parliament when the bill for Catholic emancipation was passed (1830); in favor of Catholic emancipation; chief speaker, throughout Ireland, in the agitation for the repeal of the union (1841); was tried for seditious conspiracy (1843) and sentenced to imprisonment; House of Lords reversed this judgment; his party divided into "young" and "old" Ireland, with the former against him. His health gave way beneath the struggle and he died on his way to Rome.

OCTAVIA (70?-11 B. C.). The sister of the emperor Augustus, who married, first Gaius Marcellus, consul in 50 B. C., and in 40 B. C., at the death of Marcellus, married Mark Antony, in order to keep peace between him and her brother Augustus; her husband soon forsook her for the Egyptian queen, Cleopatra. Octavia was distinguished for her beauty and womanly virtues.

OGDENSBURG. On February 22, 1813, in retaliation for the American success at Elizabethtown, a British force led by Lieutenant Colonel McDonnell attacked Ogdensburg, N. Y., and after a short struggle captured the town and plundered it.

OLUSTEE (February 20, 1864). An expedition of land and naval forces under General Seymour was sent into Florida from Port Royal. On February 7 they reached Jacksonville and started inland. On the 20th they met the Confederates at Olustee, and were defeated and obliged to retreat to Barbers with a loss of 1,861 men and 5 pieces of artillery.

OLYMPIAD. The space of four years between one celebration and another of the Olympic games, held in ancient Greece. The name of the winner of the foot race in the games was often used with the number of the Olympiad. Coroebus was the first recorded winner in 776 B. C., and thus began the first Olympiad; the system of chronological reckoning was dated from this time.

OLYNTHIAN WAR. Olynthus, a Greek city in Chalcidice, was the center of a league. It endeavored to force other cities into the union. They appealed to Sparta for aid. A Spartan force, after some reverses, compelled the city to surrender (379 B. C.).

OMAR PASHA (1806-1871). A Turkish general; born in Croatia. His real name was Michael Lattas; made governor of Lebanon (1842); defeated the Russians at Oltenitza (1853), and at Silistria (1854) with an army of 60,000 men; repulsed the Russians, who with 40,000 men attacked him at Eupatoria (1855); his attempt to relieve Kars failed; became governor of Bagdad (1857); banished for two years (1859-1861); on his return he repressed the uprising in Montenegro and took Cetinje (1862); made field marshal (1864); failed to put down the rebellion in Crete; made minister of war (1869).

OPEQUAN. See WINCHESTER (4).

OPIUM WAR. The war between Great Britain and China (1840-1842) caused by China's attempt to stop the importation of opium. The war closed with the treaty of Nanking; treaty ports were opened to trade, and England obtained Hongkong and an enormous indemnity.

ORCHOMENUS (85 B. C.). During the Mithridatic wars, Sulla assaulted the camp of Archelaus, and gained a complete victory for the Romans.

ORISKANY (August 6, 1777). An army of 800 Americans led by Herkimer, defeated the British led by St. Leger, at Oriskany, on the Mohawk in central New York. It was one of the bloodiest conflicts of the war. Men fought hand-to-hand amidst a terrific thunder shower, and finally the British retreated, leaving the Americans in possession of the field.

ORLEANS. Decisive battle of the world (1429) due to the French refusing to accept the Treaty of Troyes, which provided the French crown should descend to the heirs of King Henry V. of England, and that the two countries should be forever under one king. The last stand for monarchial independence was made at Orleans; besieged by the duke of Bedford, who held the Tourelles, a fortified position commanding Orleans. A peasant girl named Joan of Arc (Jeanne d'Arc) appeared claiming Divine authority to lead the French and deliver the country from the English. The French stormed and captured Tourelles; losing ammunition and supplies the English retreated, and the monarchial independence of France was assured Later Joan of Arc was captured by the Burgundians, sold to the English, and burned as a witch at Rouen.

ORLEANS, LOUIS PHILIPPE JOSEPH, DUC D' (1747-1793). Fifth duke of Orleans, known as Egalité; born at Saint-Cloud; espoused the cause of the colonies in the American Revolutionary War; joined the "tiers état" in the states-general (1789); aided revolutionary movements by money and secret agents (1789); assumed the name of Philippe Egalité (Equality) and took his place with the mountain party; he voted for the death of the king Louis XVI.; with all the members of the Bourbon family he was arrested by order of the convention and his estates confiscated (1793); in September was condemned by the revolutionary tribunal and executed. His son, Louis Philippe, became king of France in 1830.

OR'LOFF. The name of a prominent Russian family. **GRIGORI** (1734-1783), a favorite of Catherine II.; fought in the revolution which placed Catherine on the throne; served in the Seven Years' War. **ALEXIS** (1737-1808). Russian admiral; a leader in the revolution which placed Catherine II. on the throne; murdered Peter III. (1762); appointed admiral (1768), and defeated the Turks at Chesme (1770).

ORSI'NI, FELICE (1819-1858). Italian revolutionist: born at Meldola; elected to the Roman constituent assembly (1849); took part in the defense of Rome and Venice; exiled to England (1853); returned to Italy where he was arrested and confined at Mantua; escaped to England (1856); with three other conspirators, made an attempt on the life of Napoleon III. in Paris (1858); the emperor was unhurt, but the assassins were arrested and tried; Orsini and one other were found guilty and were guillotined (1858).

OSTEND MANIFESTO. A dispatch signed at Ostend, Belgium, in October, 1854, by James Buchanan, John Y. Mason, and Pierre Soulé, all United States ministers in Europe, declaring the advisability of the sale of Cuba by Spain to the United States and declaring that the United States would be justified in taking it by force in the event of the refusal of Spain to sell it. The declaration was not approved by any party in the United States, though the meeting of ministers was under the direction of President Pierce.

OSWEGO. (1) August 11, 1756. The French led by Montcalm attacked the English under Shirley at Oswego, N. Y., and easily captured the fort. (2) In 1759, the French and Indians tried to get possession of Fort Oswego, then occupied by the English, but their attack failed. (3) On May 5, 1814, Sir James Yeo, in command of a British squadron of eight vessels, appeared before Oswego, and attempted to land troops, which were forced back by the garrison of Fort Ontario, consisting of 300 men under Lieutenant Mitchell. The next day the British returned in such numbers that Mitchell was overpowered and obliged to evacuate the fort.

OTTAWA. Capital of the Dominion of Canada. Founded by Colonel By, from whom it received the name of Bytown (1827); incorporated as a city under its present name (1854); selected by Queen Victoria as the capital of Canada (1858). Seat of Federal Senate and House of Commons. Population 59,918 (1901).

OUDENARDE (July 11, 1708). During the War of the Spanish Succession, the French attempted to capture Oudenarde, a town of Belgium, but were defeated by the allies under Marlborough and Eugene.

OUDINOT (*oo-de-no'*), **NICOLAS CHARLES, DUKE OF REGGIO** (1767-1847). Marshal of France; born at Bar-le-Duc; appointed general of brigade (1794); as a reward for bravery Napoleon made him marshal (1809); commanded during the occupation of Holland (1810-1812); took part in the Russian campaign and

was wounded during the retreat from Moscow (1812); when Napoleon was sent to Elba, Oudinot went over to the royalists; Louis XVIII. created him a peer; commander of the royal guards, minister of state, and chief of the Paris national guard.

OXFORD. Chief city and county seat of Oxfordshire, England. It is situated 52 miles west-northwest of London. Noted for university here, which is one of the two principal universities of England. As early as 1117 we hear of Continental scholars lecturing at Oxford University. Many religious orders were attracted to Oxford at the rise of the university. Oxford has a distinct historical significance, as during the civil wars in England it was not merely the center of royalist operations, but the capital of royalist England.

PAARDEBERG (February 27, 1900). General Cronje was brought to bay by the British near Paardeberg, on the Modder river in South Africa, where he defended himself for nine days. Finally, when his army had been reduced to about 4,000 men, he surrendered.

PADUA. The most important town in northern Italy during the height of Rome's grandeur. Padua claims its origin from the time of Troy. It was sacked by the Goths and Huns, and taken possession of by Charlemagne, who wrested it from the Longobardi. Ezzelino IV., da Romano, the cruel tyrant, made it his capital in the middle of the thirteenth century. After being a republic for a time it passed under the rule of the Carrara family, and became the object of conquests on the part of Venice in 1405. Livy and Mantegna were born in Padua, and Donatello, Giotto, and Fra Filippo Lippi did much of their work here.

PAK'ENHAM, SIR EDWARD MICHAEL (1778-1815). An English soldier; born in County Westmeath, Ireland; entered the army; made major general (1812); received a command under Wellington, and fought with distinction at Salamanca; was killed while directing the unsuccessful expedition against New Orleans (1815).

PALERMO. Of Phoenician origin. The town was Carthaginian until taken by the Romans in 254 B. C. Augustus established a colony here. In 535 the Byzantines took it from the Goths. It was a wealthy and powerful Moslem center after 830, and in 1072 it was the Norman capital in Sicily. The Hohenstaufen controlled it in 1194. Frederick II. held his brilliant court here. Here occurred the massacre of the French in 1282, known as the Sicilian Vespers. In 1820, 1848-1849, and 1860 the city suffered from revolutions. In 1860 it was surrendered to Garibaldi and his army. In 1890 a national exposition was held here.

PALESTINE. Historic land of Israel, in Asia. Its people were prosperous and traded with Egypt (1600 B. C.); severed into petty kingdoms (1300 B. C.); Israelites of the south obtained control and the divided Hebrews united under Saul (1050 B. C.), who, with David, established the kingdom firmly. Conquered by Romans (63 B. C.-614 A. D.); by Persians, Arabians, Ottoman Turks (1516), and in poor condition to the twentieth century. The Zionist movement and railroads have opened a new era.

PALMYRA. Ancient city in the Syrian desert, whose foundation is attributed to Solomon, who called it Tadmor (the city of palm trees), of which the present name, Palmyra, is a translation. In 41 B. C. it is first mentioned in connection with the attempt of Antonius to gain possession of its riches. Although belonging to the Roman Empire, no Roman troops were stationed here. The city was almost destroyed in the wars with Trajan, but was rebuilt by Hadrian, and called Hadrianopolis, or Hadriana Palmyra. It was made a Roman colony under Caracalla. In the third century, under Odenathus, it was for a time free from the tutelage of Rome. Zenobia, wife of Odenathus, was called "Queen of Palmyra, and of the East." After many victories for Palmyra and an attempt on the part of the queen to take Egypt, she was herself defeated and taken captive by Aurelian, who destroyed the city. In 284-305 Diocletian made an attempt to rebuild it, Justinian rebuilt churches and public buildings and stationed a garrison there. The city was plundered by the Arabs and Tatars, and steadily declined. The site is at present occupied by Bedouins.

PANORMUS (254 B. C.). The chief battle of the First Punic War was fought at Panormus (Palermo), on the island of Sicily. The Romans, under Metellus, defeated the Carthaginians, under Hasdrubal.

PAOLI (September 20, 1777). After much skirmishing in the vicinity of Philadelphia, Howe, with his British army, encamped near the Tredyffrin meeting house, while Wayne took a position near Paoli. In some way Howe learned Wayne's whereabouts and sent three regiments under Grey to attack him. Although the Americans were prepared to move, they were taken by surprise. About 300 were killed, many were taken prisoners and barbarously treated, while a few escaped with the cannon.

PAOLI, PASQUALE DE (1725-1807). A Corsican patriot and general; born at Morosaglia; appointed chief commander (1755) of his people in their struggle against the Genoese; overpowered by a French army and fled to England (1769); recalled and became governor of Corsica during the French Revolution (1790); favored the occupation of Corsica by British troops (1794); disappointed in his political aspirations, Paoli returned to England, where he died.

PAP'PENHEIM, GOTTFRIED HEINRICH, COUNT VON (1594-1632). Famous Imperialist general in the Thirty Years' War; born at Pappenheim, Bavaria; joined the army of the Catholic League (1620); fought with the Poles against the Russians and Turks; victory at White Hill (1620) due mainly to his efforts; was cavalry commander in Spanish service in Lombardy (1625-1626); reëntered the Imperialist army, fighting under Tilly in the disastrous battle of Breitenfeld (1632); served under Wallenstein after Tilly's death; in the campaign against Gustavus Adolphus; the splendid charge of Pappenheim on the left wing of the Swedish king's army at the battle of Lützen would undoubtedly have ended in victory for Wallenstein had not Pappenheim been slain in the last charge.

PARIS. (1) In 845 Paris, the capital of France, was sacked by the Normans, and many valuables taken away. France was obliged to surrender 7,000 pounds of silver before the Normans would quit Paris. (2) The Northmen appeared in 856 and destroyed many fine buildings and the structures left standing were redeemed by heavy contributions to the enemy. In 861 Paris was for the second time ravaged and laid waste by the Northmen. (3) The Northmen united their forces in 885-886 and endeavored to gain complete subjection of the city, but were unsuccessful, owing to the gallant stand made by Comte Eudes. (4) King Henry IV. laid siege to Paris in 1590, and after the most dreadful sufferings from famine and disease the duke of Parma relieved the city. (5) The European allies, during their war against Napoleon in 1814, defeated him and forced the surrender of Paris. (6) On September 19, 1870, Paris was surrounded by the Germans and bombarded from January 5 to 28, 1871. After four months of siege an armistice was entered into. (7) During the insurrection of the Communists of Paris, in 1871, the city was subjected to another siege. Before the government could gain control of the insurgents, a large part of Paris was in flames and thousands had lost their lives.

PATAY. On June 18, 1429, the French, under the earl of Richemonte, signally defeated the English at Patay, a city of France.

PATRICIANS AND PLEBEIANS. From the earliest times the people of Rome were divided into the classes of the Patricians or nobles and their clients or the Plebeians. The history of Rome shows one long struggle between these classes. The Patricians wished to retain exclusive power, while the Plebeians claimed a share in the government. Gradually concessions were forced from the nobles and the power came into the hands of the people at large. (For details of this struggle, see Secession of the Plebs, Agrarian Law, Licinian Rogations, Tribune of the Plebs.)

PAULUS HOOK (August 19, 1779). Inspired by Wayne's success at Stony Point, Lee determined to capture Paulus Hook (now Jersey City, N. J.). With a body of Maryland and Virginia troops he crossed the Hackensack river, marched down the Hook to the British fort and surprised the garrison there, taking 160 prisoners. As some of the British retired to a strong redoubt, Lee withdrew with his prisoners.

PAUSANIAS (? -about 469 B. C.). A Spartan general; nephew of Leonidas. In the battle of Plataea (479 B. C.) he commanded the Greek army that routed the Persians under Mardonius; demanded of Thebes the surrender of traitors to the Greek cause; commanded a fleet of confederate Greeks which took Cyprus and Byzantium; entered into a plot with Persia whereby he was to become ruler, subject to the Persian monarch, of all Greece; this plot was betrayed to the Greeks by Argilius, and Pausanias, finding himself detected, fled to the temple of Athene; the entrance was blocked up with stones and he was left to starve to death.

PEACH TREE CREEK (July 20, 1864). While the Federals were getting their troops in position before

Atlanta, Ga., they were attacked by the Confederates under Hood at Peach Tree Creek. After a sharp contest the Confederates were forced to retreat to their intrenchments with a loss of about 3,000 men. The loss to the Federal army was 2,200.

PEA RIDGE (March 5, 6, 1862). After following the Confederates into Arkansas, General Curtis with 12,000 men encountered them, about 35,000 strong, at Pea Ridge. The Confederates, led by Van Dorn, attacked Curtis on March 5th, and both sides fought desperately until night. The struggle was renewed on the 6th, and after a two hours' engagement the Confederates fled in confusion. This battle was known to the Confederates as the battle of Elk Horn.

PEKATONICA RIVER (June 18, 1832). In order to disperse a party of Indians who were devastating Illinois in the vicinity of Galena, Col. Henry Dodge led a small band of volunteers up the Rock river valley. On June 18, 1832, they reached the Pekatonica river where the Indians were in hiding. A sharp engagement ensued, which resulted in the utter annihilation of the Indians, while Colonel Dodge lost but 3 men.

PELOPONNESIAN WAR (431-404 B. C.). A struggle for supremacy between democratic Athens and aristocratic Sparta. It terminated in the complete abasement of Athens and the supremacy of Sparta in Greece. The war is usually divided into three periods: (1) from the beginning to the Peace of Nicias (421 B. C.); (2) from the Peace of Nicias to the Sicilian Expedition (415 B. C.); (3) from the Sicilian Expedition to the end (404 B. C.). The chief battles were: surprise of Plataea by the Thebans (431 B. C.); fall of Mytilene (427 B. C.); capture of Plataea by Sparta (427 B. C.); capture of Sphacteria by Athens (425 B. C.); defeat of the Athenians at Amphipolis (422 B. C.); battle of the Arginusae (406 B. C.); battle of Aegospotami and capture of the Athenian ships (405 B. C.). Athens then surrendered to Lysander of Sparta, her walls were broken down, her ships given up, and the city was ruled by the Thirty Tyrants.

PENDLETON, EDWIN CONWAY (1847-). Rear admiral United States navy, and since 1907 commandant League Island Navy Yard, Philadelphia, Pa.; born in Richmond, Va.; graduated United States Naval Academy (1867); in active service on the Marion (1864), pursued Confederate steamers Florida and Tallahassee; superintendent naval gun factory, Washington (1897-1900, 1902-1905); commandant navy yard, Washington (1905); rear admiral (August 28, 1907).

PENINSULAR WAR. War in Spain (1808-1814) between the emperor Napoleon and the allied Spanish, Portuguese, and English forces. Napoleon decided to seize Portugal to complete his force against England. Marshals Murat, Junot, and Soult were the great French leaders, and Arthur Wellesley, afterward Duke of Wellington, and Sir John Moore led the allies. The chief battles were: Vimiero (1808), Bailen (1808), Corunna (1809), Talavera (1809), Ciudad Rodrigo (1811), Badajoz (1812), Vittoria (1813). The war was ended by Napoleon's abdication (1814).

PENN, WILLIAM (1644-1718). An English Quaker; the founder of the colony of Pennsylvania. Born in London; son of Admiral Sir William Penn; the son received the grant of land in North America in payment of a sum of money lent to the crown by his father; his object was to establish a home where his co-religionists might worship in peace; came to America and founded the city of Philadelphia (1682); signed a treaty with the Indians which remained unbroken (1683); on the accession of William III. to the throne of England (1688), the government of Pennsylvania was taken from Penn, but was restored finally. Penn returned to England, and to his life of preaching; his Quaker agent, Scott, mismanaged affairs, and involved him in debt and financial ruin.

PENOBSCOT TOWNS (September 1, 3, 12, 1814). Encouraged by their success at Eastport, the British sent another expedition to conquer still more of the Maine coast. On September 1, 1814, a British fleet entered Penobscot Bay and threatened Castine. Seeing that resistance would be useless, the militia fled and left the town in the hands of the British. Hampton, Bangor, and Machias were taken on the 3d and 12th with little difficulty, plundered by the invaders, and the inhabitants held as prisoners.

PENSACOLA. On November 7, 1814, General Jackson, with 5,000 Tennessee volunteers, captured Pensacola from the British.

PERRY, OLIVER HAZARD (1785-1819). An American naval officer; born at South Kingston, R. I.; entered the navy (1799); served in the war against Tripoli; commissioned lieutenant and commanded a flotilla (1807); at the outbreak of the War of 1812 he commanded at Sackett's Harbor under Commodore Chauncey; made captain and master-commandant to superintend the construction of a fleet (1813); won a victory from the British on Lake Erie (September 10, 1813), which battle gave the Americans control over the lake. Perry served with Decatur's squadron in the Mediterranean; dispatched to the West Indies to protect American commerce; he died of yellow fever at Trinidad; was buried with military honors but the body was removed to Rhode Island and reinterred.

PERRY'S EXPEDITION. In 1852 President Fillmore sent Perry to Japan with a squadron of warships to induce her to enter into friendly relations with the countries of the West. His flagship, the "Mississippi," was the first United States war vessel to circumnavigate the globe.

PERRYVILLE (October 8, 1862). In October, 1862, the Federal forces in Kentucky began to approach Frankfort, the Confederate center, by way of Louisville. When McCook's division reached Perryville, it was attacked by a Confederate army led by Bragg. The fighting continued at intervals all day, and in the night the Confederates retreated to Cumberland Gap. During the engagement the Federals lost 4,055 men; the Confederate loss was 4,500 men.

PERSEPOLIS. Persian city called "The Glory of the East"; was the capital of the Persian Empire under Darius I. and his successors. The traditional founder of the city was Jamshid, and the principal group of ruins is the Throne of Jamshid, or the Forty Pillars. The ruins of the palaces show that they were masterpieces of Persian architecture. Alexander the Great captured the city towards the end of 331 B. C., after the defeat and death of Ariobarzanes, the Persian ruler, at the battle of Gaugamela, and he is accused of setting fire to the palaces of the kings. Persepolis gradually declined in prominence until the city of Istakhr rose upon its ruins, about 200, became a center of religious and commercial activity, then sank into insignificance, leaving few traces of its ancient glory.

PETERSBURG. (1) 1781. The British took advantage of the fact that the Americans had neglected to effectively protect Virginia, and sent General Phillips into the state with 2,000 men. The British troops landed at City Point and proceeded toward Petersburg. American pickets tried to check their advance, but were driven back to the main army at Blandford, and on April 25 the British entered Petersburg and destroyed 4,000 hogsheads of tobacco. (2) 1864. During the Civil War, while General Butler was conducting operations against Richmond, he sent Gillmore and Kautz with a detachment of Federals against Petersburg. An attempt to enter the town was made on June 10, but the Federals were repulsed. On June 15 the Federals led by W. F. Smith again attacked Petersburg. At the end of four days of skirmishing the Federals were obliged to give up the attempt, having lost 9,000 men in the engagements. During June and July the Federals remained in the vicinity of Petersburg, and skirmishing was almost incessant. A powder mine made under the Confederate defenses was exploded on July 30 and many Confederates were killed, but the Federal attack which followed was a complete failure and 4,000 men were lost. (3) 1865. On April 2 Grant's army from the Appomattox to Hatcher's Run made a general assault on the Confederate works around Petersburg. The Federals lost about 8,000 men in the attack, but succeeded in carrying some of the defenses.

PETRA. An ancient city of northern Arabia, whose importance as a center of trade was due to its position in a narrow gorge midway between the Dead Sea and the northeastern extremity of the Red Sea. The name, Petra, was changed to Joktheel by King Amaziah of Judah, who captured it in the ninth century B. C. During the second and third centuries it was in the hands of the Nabateans. From the time of Pompey it was subject to tribute to the Romans. In 105 Hadrian granted certain privileges to the town. On the introduction of Christianity, Petra became the seat of a bishop. The importance of the town began to decline in the fourth or fifth century.

PHALANX. The Macedonian phalanx was instituted by Philip II. of Macedonia, about 360 B. C. Phalanx was the ancient Greek name for the heavy infantry in line of battle. The Greek phalanx consisted of 8,000 men in a square battalion with shields joined and spears crossing each other. Alexander seems to have had pikes of different lengths, the longest being about seventeen feet. Philip and Alexander used the phalanx

to hold the main line of the enemy in check. In the battles of Cynoscephalae and Pydna, the victory of the Roman legion over the Greek phalanx proved the superiority of the former.

PHARSALUS (Aug. 9, 48 B. C.). In a battle at Pharsalus (now Fersala), in Thessaly, Julius Caesar defeated Pompey the Great. This victory made Caesar the foremost man of Rome.

PHILADELPHIA. Settled by Swedes sent here by government of Queen Christina and called Wicaco (1636); Capt. Markham, deputy governor for William Penn, arrived with a small company (1681) starting an English settlement called Philadelphia (1682), "The City of Brotherly Love." Germans invited by Penn settled at Germantown (1683); first English school opened (1683); 300 houses and 2,500 inhabitants (1684), nearly all Quakers. Chartered as a city (1701); 10,000 soldiers raised for King George in Indian wars (1747); line of packets to New York established (1751); a stage line (1756). Active in resisting British aggression (1761-1774); first Continental Congress in Carpenter's Hall (1774); second in State House (1775), at which Washington was appointed commander in chief of Continental army. Third meeting of Congress and adoption of Declaration of Independence (1776). Held by British (1777-1778); adopted Constitution of the United States (1787); received new charter as city from Legislature (1789). Seat of Federal government (1790-1800); monetary center of country until 1836. First formal protest against slavery was made by four Germans of Germantown (1688); first Abolitionist Convention held (1794); American Anti-Slavery Society founded (1833). Active in Civil War, contributing many prominent soldiers and raising over $1,000,000 in a single fair. Centennial of American Independence exposition (1876).

PHILADELPHIA, LOSS OF THE (October 31, 1803). During the American blockade of Tripoli, the Philadelphia, commanded by Capt. William Bainbridge, ran on to a rock and was captured by a Tripolitan blockade runner. The following February an American crew on the captured boat Intrepid, commanded by Lieutenant Decatur, boarded the Philadelphia and after overpowering the pirates blew up the ship.

PHILIPPI (October, 42 B. C.). Two battles were fought at Philippi, a city of Macedonia, in 42 B.C., between Antony and Octavianus on the one side and the Republicans, under Brutus and Cassius, on the other, in the second of which Antony and Octavianus became masters of Rome.

PHILISTINES. People of Palestine who migrated from Crete. With the exception of Assyrian and Egyptian inscriptions, we have no knowledge of the early history of the Philistines, except what may be gathered from the Old Testament. The story of Samson shows the relations between the Hebrews and Philistines. The inheritance of Judah included the territory of the Philistines, but the people were not overpowered in the Israelite conquest under Joshua. At Mizpah, 1116 B. C., Samuel gained a victory over them, and they were defeated at Michmash by Saul and Jonathan in 1087 B. C. David slew their champion, Goliath, when another attempt was made to invade Israel in 1063 B. C. The Philistines defeated Saul and Jonathan in a disastrous fight at Mt. Gilboa (1033 B.C.?) and both were killed. David succeeded in subduing them, and under Solomon they gave no further trouble. There were constant uprisings on the part of the Philistines, who were subdued by the Hebrews, but the former were losing strength, and in 63 the Romans, under Pompey, subjugated the whole country. After this they disappeared as a nationality.

PICCOLOMINI (*pik-ko-lo'me-nee*), **OTTAVIO, DUKE OF AMALFI** (1599-1656). Austrian general; born at Florence; fought against the Bohemians (1620) in the Netherlands; and at Lützen (1632) under Wallenstein; aided the Spaniards against the French (1635); and suffered a defeat by the Swedish general Torstenson, at Leipzig (1642); appointed general-in-chief of Spanish forces in Flanders (1643); created field marshal in command against the Swedes (1648); imperialist plenipotentiary to the Nuremberg Congress (1649); received the title of Prince (1654), and the duchy of Amalfi (1639) was given him by Spain.

PICKETT, GEORGE EDWARD (1825-1875). An American soldier; born at Richmond, Va. He attained prominence for gallantry in the Mexican War; joined the Confederates in the Civil War; gained honor at Seven Pines and Gaines's Mill; held the center at Fredericksburg; formed the center at Gettysburg on the third day at Cemetery Hill; unsuccessfully opposed Sheridan's cavalry at Dinwiddie Court House and Five Forks.

PILGRIMS. Emigrants who, on account of religious difference, came to America in the Mayflower, founding the colony of Plymouth in 1620. These people were Separatists, and are to be distinguished religiously from the Puritans of England.

PILLSBURY, JOHN ELLIOTT (1845-). Rear admiral United States navy and chief of bureau of navigation, Washington, D. C. (1908); born at Lowell, Mass.; graduated United States Naval Academy (1867); in coast survey service ten years; established position of axis of the Gulf Stream off Cape Hatteras and in Straits of Florida and determined many of the laws which govern its flow; during Spanish War commanded dynamite cruiser Vesuvius off Santiago; chief of staff of North Atlantic fleet (1905).

PISA. An ancient city of Tuscany, founded about the sixth century B. C. It is first mentioned by Livy as Julia Pisana. In the fifth century B. C. it was subject to Rome, but was an independent community under the Carolingians. Sardinia was wrested from the Saracens by Pisa, with the aid of Genoa, in 1025. Pisa was a commercial and naval rival of Venice and Genoa; and in the twelfth and thirteenth centuries was at the height of her greatness. This came to an end when Genoa defeated the Pisan fleet off Meloria, in 1284. In 1399 the city was taken by the Milanese, and was sold to France six years later. Pisa became independent under the protection of Charles VIII. of France in 1494, but came under the rule of Florence again in 1509. From this time it began to decline and its history is a part of that of the Florentine State, and of Tuscany. Ecclesiastical councils were held at Pisa in 1134, 1409, and 1511. In 1600 Pisa had only about 15,000 inhabitants, where in the height of its greatness it had numbered 150,000.

PITTSBURG LANDING, or SHILOH (April 6, 7, 1862). After Grant had captured Fort Donelson, he advanced to Pittsburg Landing, near the intersection of the state lines of Tennessee, Mississippi, and Alabama, and about 20 miles from Corinth, Miss., where the Confederates were encamped. Here they halted to wait for the reinforcements led by Buell before attacking the Confederates. On April 6, 1862, the Confederate army led by Johnston appeared and offered battle. Both armies fought desperately, and when the conflict ceased at night the Union army had been driven from Shiloh Church to the Tennessee river. Just as the Confederates seemed victorious, Buell arrived, and on the following day the Confederates, after a fiercely contested battle, were overpowered and compelled to retreat. On the Confederate side 14,687 men were lost, including Johnston; the Federals lost 13,573 men.

PLATAEA, a city of northern Greece, and (1) the site of a battle between Mardonius, commander of the army of Xerxes of Persia, and Pausanias, commander of the Lacedemonians and Athenians, September 22, 479 B.C. The Greeks obtained immense plunder, and were henceforth delivered from the fear of Persian invasions. (2) 429-427 B.C. During the Peloponnesian War, Plataea was besieged by the Theban-Lacedemonian forces, and after persistent and active effort the town was taken. The small number of citizens which had not escaped were put to death and the city destroyed.

PLEVNA, a town of Bulgaria. Here, December 10, 1877, Osman Pasha, the Turkish general, after a heroic defense for three months surrendered to the Russians.

POINT PETRIE. On January 13, 1815, a force of 1,000 British attacked Point Petrie, near St. Mary's, Ga., and Captain Massias surrendered with 90 men.

POITIERS. A town in western France famous for its antiquities but mainly because of the famous battle (1356) in the Hundred Years' War when the English under Edward the Black Prince defeated John, King of France. The French army outnumbered the English over five to one; they opened the battle with a furious charge of the mailclad men at arms, and only the marvelous work of the English longbowmen saved them from being ridden down and cut to pieces. The arrows shot, and the bows used, by the English were fully twice as along as those in use by any other country; hence "the cloth yard shaft" as a term for the arrow. King John was taken prisoner.

POMPEII. An ancient city of Campania which was founded by Oscans as early as the sixth century B. C. It stood at the foot of Mt. Vesuvius, between the cities of Herculaneum and Stabiae. These Oscans were cap-

tured by the Samnites about 400 B. C. In 300 B. C. Pompeii was a dependency of Rome, but in the Social War of 90 B. C. it joined the Italian allies against Rome. Sulla besieged it about 80 B. C. and it became a Roman colony and later the favorite resort of wealthy Romans. In 63 there occurred an earthquake which destroyed much of the city. On August 24, 79, came the violent eruption of Vesuvius, which laid in ruins the towns of Pompeii, Herculaneum, and Stabiae. The showers of ashes and cinders hermetically sealed the town, for after about fifteen hundred years operations for excavations were begun by Charles III. of Naples and everything was found to be in an excellent state of preservation. A systematic exploration has been continued at intervals since. Some of the most interesting discoveries have been the unfinished temple of Venus Pompeiana, and the remains of fugitives who were escaping with valuables, and were cut off by the lack of boats over the Sarmo. Only about 2,000 people perished.

PONIATOWSKI (*po-ne-ah-tov'ske*), **JOSEPH ANTONY, PRINCE** (1762-1813). A celebrated Polish general; brother of the last king of Poland; born at Warsaw; fought in the Turkish campaign of 1787; commander-in-chief of the army of the south (1789); gained victories over the Russians (1792); defended Warsaw against the Prussians, commanding under Kosciusko (1794); joined the French against the Russians (1800); became minister of war in the duchy of Warsaw (1807); invaded Galicia (1809); was with Napoleon in the invasion of Russia; served at Smolensk, at Borodino, and at Leipzig, where he was drowned in the Elster. Three days before his death Napoleon made him marshal as a reward of service at Leipzig.

PONTIUS. The leader of the Samnites in their wars against Rome. He completely defeated the Romans at Caudine Forks in 321 B. C.

PORT ARTHUR. Famous naval station and fortress, long thought impregnable. In the war of Japan and China (1894) the Chinese were forced to surrender. Russia, France, and Germany induced Japan to relinquish the territory on payment of 30,000,000 taels (about $25,000,000). Was leased by China to Russia (1898-1923), the port to be closed to all but Russian and Chinese men of war. Early in August, 1904, the Japanese began active operations against the fortress, attacking and being repulsed with enormous loss; captured 203-Metre Hill (November 30) commanding the city and harbor, and the fortress was doomed. It was an artillery and infantry fight; after defending the position to the last extremity General Stoessel surrendered with full honors of war, January 2, 1905, 40,000 men, 59 forts, guns, battle ships, and tons of ammunition. The casualties amounted to over 42 per cent. of the 107,000 Japanese, and over 34 per cent. of the nearly 50,000 Russians engaged.

PORTER, DAVID DIXON (1813-1891). An American admiral; born at Chester, Pa.; served in an expedition against the West Indian pirates (1824); and in the Mexican War (1846-1848); bombarded the New Orleans forts Jackson and St. Philip (1862), while in command of the Mississippi squadron; became rear admiral (1864) as a reward for work done at Vicksburg; promoted vice-admiral (1866); superintendent of naval academy at Annapolis (1865-1869); received highest of naval ranks, that of admiral (1870).

PORTER, FITZ-JOHN (1822-1901). American soldier; born at Portsmouth, N. H. Served in the Mexican War and the Civil War. Court-martialed (1863) and dismissed from the service for disobeying orders at second Bull Run. He was restored to full rank and honor (1886).

PORT GIBSON (May 1, 2, 1863). During the military operations around Vicksburg, Miss., McClernand, with a force of Federal troops, appeared before Port Gibson, south of Vicksburg. On May 1 he attacked the Confederates and forced them back. The battle was renewed on the following day, and after a stubborn conflict the Confederates still held their position, but during the night retreated across the Bayou Pierre.

PORT HUDSON (July 8, 1863). During the Civil War, Port Hudson was a strongly fortified Confederate point on the Mississippi river, above Baton Rouge, La. On May 22, 1863, the Federals, led by Banks, besieged the place, and on the 27th made an assault which was unsuccessful. The Federal loss during the investment was about 1,995 men. Farragut conducted a bombardment on June 14, but this was repulsed with a loss to the Union forces of 700. Banks, however, was still planning another attack, but when the Confederate general Gardner learned of the fall of Vicksburg he could hold out no longer, and on July 8 surrendered with 6,000 men and 51 guns.

PORTO RICO (July 25-August 12, 1898). During the Spanish-American War, General Miles led an expedition against Porto Rico, an island of the West Indies. With 3,300 United States troops he landed at Guanica on July 25 and moved toward Ponce by way of Yauco. He then proceeded toward the northern part of the island, taking the chief towns with little resistance.

PORT ROYAL EXPEDITION (October 29-November 7, 1861). On October 29, 1861, a Union force consisting of 75 ships-of-war and 10,000 men commanded by Commodore Samuel F. Dupont and General Thomas Sherman set sail for Port Royal, S. C. They arrived on November 3, and on the 7th were ready for action. The Confederates occupied a strong position with forts on each side of the Broad river, at its mouth, and a fleet in the harbor. After a battle of four hours, the Confederates fled, leaving 43 guns in the hands of the victors. The fortifications were afterwards used as a center for the Federal naval operations.

POTIDAEA. In 432 B. C. Potidaea, a town in Macedonia, revolted against Athens, this being one of the causes of the Peloponnesian War. After a siege of three years the Athenians reduced the city and expelled the inhabitants.

POUNDRIDGE (July 2, 1779). The capture of Major Lockwood, an active colonist at Poundridge, Westchester Co., N. Y., was much desired by the British. On July 2, 1779, a party under Tarleton were met at Poundridge by a small band led by Lockwood and Sheldon. Tarleton forced them to retreat, entered Poundridge, and burned several of the buildings.

PRAGUE. Prague, the capital of Bohemia, has suffered much by war. (1) November 8, 1620. One of the first battles of the Thirty Years' War was fought here between Maximilian of Bavaria and Frederick V. the Elector Palatine, the latter being defeated. (2) The most celebrated battle was fought at Prague, May 6, 1757, when the Austrians were defeated by Prince Henry of Prussia and their whole camp taken. On August 23, 1866, at the close of the Austro-Prussian War, a treaty of peace between Prussia and Austria was signed at Prague, by the terms of which Austria was obliged to pay $15,000,000 for the costs of the war and give up some of her territory.

PRESIDENT (January 15, 1815). After a running fight of about eight hours the American frigate President was compelled to surrender to the British Majestic, just outside New York harbor.

PRESTON, in Lancashire, England. (1) August 17, 1648, Cromwell defeated the Scotch Royalist army at Preston. (2) November 12, 13, 1715, the Scotch insurgents were overwhelmed by General Carpenter.

PREVOST, SIR GEORGE (1767-1816). British soldier and administrator. Born in New York; entered British army (1783); saw service in West Indies (1794-1795); acting military governor of St. Lucia (1798-1801); civil governor (1802); governor in chief in Dominica (1802); created baronet (1805) and major general; lieutenant general (1807) and lieutenant governor of Nova Scotia (1808); governor of Lower Canada (1811), and governor general of British North America, holding the position during War of 1812, nominally but not actually directing as commander in chief of the British forces. He unsuccessfully attacked Sacketts Harbor, N. Y. (1814), and also Plattsburg, N. Y., where he was repulsed by Americans under Macomb. For faintheartedness or lack of enterprise was court-martialed, but died before verdict was rendered.

PRIM, JUAN, MARQUIS DE LOS CASTILLEJOS, COUNT OF REUS (1814-1870). A Spanish general and statesman; born in Reus, Catalonia; aided Narvaez to secure the downfall of Espartero (1843); became governor of Porto Rico (1845); distinguished himself in Morocco (1859); commanded Spanish forces in Mexico (1862); instrumental in bringing about the overthrow of Isabella (1868); became dictator; placed Amadeus on the throne (1870); shot by Carlist assassins and died.

PRINCETON (January 3, 1777). Leaving a strong force at Princeton, N. J., Cornwallis marched to Trenton, where he found Washington. On account of the long march, he concluded to wait until morning, when he would rush upon the Americans and capture them. During the night, however, Washington ordered his troops to march quietly to Princeton, where they surprised and defeated the British before Cornwallis realized what had been done.

PUEBLA (September 25-October 12, 1847). With a force of only 393 Americans, Colonel Childs was left to hold Puebla, in southern Mexico, as well as two or

three other posts. In August, 1847, Captain Blanchard and a detachment of 35 men, who were pursuing a band of guerrillas, were surrounded and 22 of their number killed. On September 22d the combined forces of Santa Anna and Rea laid siege to Puebla, but, in spite of the incessant fire of the Mexicans, the Americans bravely defended the town until General Lane arrived with reinforcements.

PULAS'KI, CASIMIR, COUNT (1748-1779). A Polish soldier and general in the American Revolution; born in Podolia, Poland; defended Czenstockora against Russian invasion (1768); outlawed and went to America (1777); aide to Washington at Brandywine; made a brigadier general for gallantry and appointed a command of cavalry (1777); organized Pulaski's legion in Baltimore; held Charleston against General Prevost until aid arrived; mortally wounded at Savannah.

PULASKI'S MEN, MASSACRE OF (October 15, 1778). When the Americans learned that the British were occupying Little Egg Harbor, in New Jersey, they immediately sent Count Pulaski with a small force to oppose the movement. A deserter from the American army informed the British of Pulaski's position, and on October 15, 1778, 200 of the British led by Ferguson rushed upon the sleeping Americans and massacred 50 and took five prisoners.

PULTOWA. Decisive battle of the world (1709). Sweden was an important member of the German Empire. New Russia was just founded by Peter the Great. Charles XII. dethroned the sovereign of Poland and desired the overthrow of the embryo Russia before it gathered strength. He invaded it with 80,000 picked soldiers; declined overtures of peace, and steadily advanced. The Russians, numbering 100,000, disciplined with constant fighting, were besieged by the Swedes in Pultowa, which commanded the passes to Moscow. The Swedes assaulted; carried several redoubts, but numbers told the usual story; the hitherto invincible Swedes were defeated and the nation crushed. Since then Russia has acquired immense territory, advancing her frontier line nearly 900 miles nearer to Vienna, Berlin, Dresden, Munich, and Paris; 450 miles nearer Constantinople, and within a few miles of the capital of Sweden.

PUNIC WARS. Three great wars waged between Rome and Carthage. The First Punic War (264-241 B. C.) ended with the cession of the territory of Carthage in Sicily to Rome. The Second Punic War (218-201 B. C.) ended with the loss of Spain to Carthage. The Third Punic War (149-146 B. C.) ended with the destruction of Carthage.

PUTNAM, ISRAEL (1718-1790). An American general; born at Danvers, Mass.; took part in the battle of Lake George, and was captain of a company at Crown Point (1755); went on the West India campaign (1762); commanded a regiment during Pontiac's War; was a leader in Stamp Act resistance in Connecticut; raised troops and was a prominent leader at the battle of Bunker Hill (1775); commanded at the battle of Long Island (1776); in charge of defense of Philadelphia; given a command in the highlands of the Hudson.

PYRAMIDS (July 21, 1798). Napoleon encountered the Mamelukes, under Murad Bey, in the battle of the Pyramids, in Egypt, and utterly defeated them.

QUAKER HILL (August 29, 1778). Assisted by General Sullivan and a force of 10,000 Americans encamped at Providence, Washington resolved to attack the British at Newport, R. I. On August 5 the French fleet encountered the British ships off Newport, and the latter were burned or sunk to avoid capture. After the engagement a storm so crippled the French vessels that they were obliged to go to Boston for repairs. The American forces occupied Quaker Hill and Turkey Hill, from which positions they were driven by the British, and Sullivan retreated to Providence.

QUANTRELL'S RAID (August 21, 1863). In August, 1863, a band of Confederates who had been sent to their homes after the fall of Vicksburg, organized a marauding expedition under the leadership of Quantrell. On August 21 they appeared at Lawrence, Kansas, and proceeded to sack the town. Many buildings were pillaged and destroyed, and almost 200 of the inhabitants cruelly massacred. A scouting party was sent in pursuit, but only about 100 of the offenders were captured and killed.

QUATRE-BRAS. A battle fought at this village in Belgium, about 19 miles southeast of Brussels, on June 16, 1815, two days before Waterloo, by the English and Germans under Wellington against the French under Ney, in which the French were defeated.

QUEBEC, PROVINCE OF CANADA. Founded (1535) by Jacques Cartier, discoverer of the St. Lawrence river, who built a village and embryo fort that was later abandoned. Jean Francois de la Roque, Sieur de Roberval, when appointed governor general a year later rebuilt fort and village and cultivated land, but again the site was abandoned. Champlain founded present settlement (1608); captured by English (1629); restored to French in treaty giving Canada, Cape Breton, and Acadia (1632). Named from Indian term "Kebec, a narrow passage closed in on both sides by forest and high rocks." The same signification as the Portuguese word, Canada. Thus the peculiar configuration of the river at that point gives the name to both city and province. Held by French until 1759. After Wolfe had waited in vain for reinforcements from General Amherst, he decided to march against Quebec, on the St. Lawrence river. On a dark night the troops were landed near the steep cliffs. In the morning the French were taken by surprise. The battle was short but decisive, and resulted in the utter defeat of the French. On September 17th Quebec was surrendered to the English. Wolfe was mortally wounded and died just after the victory; Montcalm, the French leader, also died before the city surrendered. December 31, 1775, the American army, led by Montgomery and reinforced by Arnold, made a desperate effort to get possession of Quebec, but after making several simultaneous attacks they were obliged to retreat, Montgomery having been slain. It is due to Lord Dorchester that Canada is a British country. In 1775 he could not get reinforcements from General Howe because Admiral Graves refused to supply transports, and only by his splendid work (as General Carleton) in gathering and enrolling 1,600 men was the tide turned and the great country saved to England, when Quebec was the last spot in the province to hoist the British flag. With the criminally late arrival of British ships in the St. Lawrence the Americans retreated.

QUITMAN, JOHN ANTHONY (1799-1858). An American soldier; born in Rhinebeck, N. Y.; elected to Mississippi state legislature (1825); state chancellor (1828-1835); delegate to state constitutional convention (1832); president of state senate (1835); commissioned brigadier general at the outbreak of the Mexican War; distinguished himself at Monterey; helped to capture Vera Cruz and Puebla; brevetted major general; made military governor of Mexico; elected governor of Mississippi (1849); while holding this office, was indicted for complicity with General Lopez in his plan to capture Cuba; arrested and tried, but acquitted; served one term in Congress (1855-1858), and acted as chairman of the military committee. Quitman expressed his views strongly in favor of the formation of a Southern Confederacy (1851).

RADET'ZKY, JOSEPH WENZEL, COUNT VON (1766-1858). An Austrian field marshal; born in Bohemia; became a cadet in an Hungarian cavalry regiment (1784); fought in the Turkish campaign of 1788; in the Italian war (1795-1800); became major general (1805); and lieutenant field marshal (1809); was present at Aspern and Wagram; chief of staff of Prince Schwarzenberg (1813-14-15); the victories of Kulm (1813) and Leipzig were partly due to him; commander-in-chief in Lombardy (1831); crushed the Sardinian forces at Custozza (1848), and Novara (1849); forced Milan and Venice to surrender; appointed governor general of Lombardy and Venetia, where he ruled until his retirement (1857).

RAGLAN, LORD FITZROY JAMES HENRY SOMERSET (1788-1855). English field marshal distinguished in the Peninsular and Crimean wars. In the latter he was commander of the English forces.

RALEIGH (September 27, 1778). The United States frigate Raleigh encountered two British ships off the coast of Maine. The Raleigh attempted to escape but was closely followed by the British until she ran aground in Penobscot Bay. Of the Raleigh's crew three were killed and 22 wounded; the others were able to escape.

RAMILLIES, BATTLE OF. One of the most important battles in the War of the Spanish Succession, fought May 23, 1706, between the French forces under Marshal Villeroi and the allies under the duke of Marlborough. Villeroi was defeated with a loss of 13,000 killed and wounded, and all of his cannon. The allies' loss was 3,500. This was one of the four battles that insured Spain against a union with France; forcing the Bourbon dynasty to recross the Pyrenees, which it had boastfully declared "no longer exist."

RAWLINS, JOHN AARON (1831-1869). An American general and secretary of war; born in East Galena, Ill.; became a major in an Illinois regiment, but resigned to accept the post of assistant adjutant general (1861); appointed chief of staff of General Grant (1862); promoted brevet major general (1865); appointed secretary of war by President Grant.

RAYMOND (May 12, 1863). As Grant's army was marching toward Vicksburg, Miss., McPherson's division encountered the Confederates at Raymond, east of Vicksburg. In the battle which followed, the Confederates were repulsed with a loss of 514 men. McPherson lost 442 men.

REFORMATION, THE. A term applied to the period (1517-1534 and 1558-1588) during which England threw off the yoke of Rome and became what has since been termed "Protestant England." Henry VIII.'s desire for divorce from his wife, Catharine, was the primal cause of difference with the Pope, and the flame was cleverly fanned until the whole nation was interested. The power of the clergy to make laws, or rule, was annulled, and liberty of religious thought evolved.

REGULUS, MARCUS ATILIUS. A famous Roman general; elected consul in 267 B. C. and again in 256 B. C., directed the Roman army and navy against Carthage in the First Punic War; gained several victories over the Carthaginians; in 255 B. C. suffered an overwhelming defeat, 30,000 Roman soldiers were slain, 2,000 fled, and Regulus with 500 was taken prisoner to Carthage, where he was detained for five years. At the end of that time the Carthaginians sent an embassy to Rome to make terms and caused Regulus to go with them to urge his fellow citizens to accept the terms, on his word to return if not successful. He urged the Romans to reject the terms of the treaty and to wage war against Carthage; then he went back to meet a horrible death by torture at the hands of the exasperated Carthaginians.

REMEY, GEORGE COLLIER (1841-). Rear admiral (retired) United States navy; born at Burlington, Ia.; graduated United States Naval Academy (1859); served during Civil War; commandant navy yard, Portsmouth (1896-1898, 1898-1900); commandant naval base, Key West, Fla., during war with Spain (1898); rear admiral (November 22, 1898); commander in chief of Asiatic fleet (1900-1902); chairman of lighthouse board (1902-1903); retired (August 10, 1903).

RENAISSANCE. Literally, the revival of learning. The period from 1450 to 1517, when a transition from the medieval to the modern world occurred in Europe, especially in literature and art. Briefly, it was the bringing to light and general use of forgotten arts and sciences, blending such knowledge with the present, and building therefrom the future of the useful arts and human philosophy of the modern world.

RESACA (May 15, 1864). With a strong force of Confederates General Johnston occupied Resaca, Ga., while the Federals were in the vicinity attempting to secure a good position from which to make an attack. On May 14 a detachment from Sherman's command made an attack but was repulsed with a loss of 1,000 men. In attempting to turn Sherman's left flank, Johnston lost a strong position, and after struggling all day on the 15th to regain it, the Confederates retreated. The Federal loss during the engagements was about 3,000. Johnston lost about 1,000 men.

RESACA DE LA PALMA (May 9, 1846). After the battle at Palo Alto, the Mexicans retreated before the Americans toward Fort Brown on the Rio Grande river, and at Resaca de la Palma again formed for battle, 5,000 strong. With 2,000 men, General Taylor completely defeated the Mexicans, drove them across the Rio Grande to Matamoras, and captured considerable of their artillery and ammunition, as well as 100 prisoners. The casualties in the Mexican army were 388; the Americans lost but 122 men. These actions caused declaration of war and a call for troops.

REVERE, PAUL (1735-1818). An American patriot; born in Boston; by trade he was a goldsmith and engraver; served in the French and Indian War in the expedition against Crown Point; took part in the Boston Tea Party; constructed and operated a powder mill in which to make powder for the patriots; aroused the minutemen and the people along the way from Charleston to Lexington and Lincoln, with the news that the British were coming (April 18, 1775); this ride was made the subject of Longfellow's poem, "The Ride of Paul Revere." During the war Revere served as lieutenant colonel of artillery; established the Revere Copper Co. at Canton, Mass., in 1801.

REYNOLDS, JOHN FULTON (1820-1863). An American soldier; born in Lancaster, Pa.; served in the Mexican War; commissioned captain (1855); was commandant at West Point (1859); at the outbreak of the Civil War became lieutenant colonel; promoted brigadier general (1861); served in the second Bull Run campaign; commanded the Pennsylvania volunteer militia; present at Fredericksburg (1862) as major general; was killed on the Gettysburg battlefield (1863), while in command of the Union troops.

RHODES. (1) In 88 B.C. Mithridates the Great laid siege to the city of Rhodes, on the island of the same name off the coast of Asia Minor, but was finally beaten off. (2) 42 B. C. Venturing to oppose Cassius, the city was plundered by him and her ships all carried off or destroyed. (3) When the Crusades began, Rhodes was a convenient stopping-place for the Christian fleets; and in 1309, after a three years' siege, the city fell into the hands of the Knights Hospitallers of St. John. (4) The Turks besieged the Knights at Rhodes in 1480, but were unsuccessful. (5) In a second siege by the Turks in 1522-23, the city capitulated.

RICHMOND. State capital of Virginia. John Smith bought land from Indians and settled at "None Such" (1609); Fort Charles built (1645); Colonel William Byrd obtained possession of district by grants (1685-1687); his son Colonel William Evelyn Byrd laying out a town named Richmond. Incorporated (1742). In St. John's Episcopal Church (1775) Patrick Henry made his famous speech ending "Give me liberty or give me death." Capital of the state (1779); chartered as a city (1782). Convention ratifying Federal Constitution for Virginia met (1788); adopted Act of Secession (1861); was capital of Confederacy (1861-1865); Federal forces fought 15 pitched battles and twenty skirmishes without capturing it. Evacuated by Confederates (1865), who set fire to the warehouses and destroyed business portion of the city. Federal forces entered April 2, 1865.

RICHMOND, KY. (August 30, 1862). With about 20,000 Confederates, Gen. Kirby Smith crossed the Cumberland mountains into Kentucky. At Richmond, on the Kentucky river, they encountered the Federals under General Manson. After a brief struggle in which about 5,000 were lost on each side, the Confederates were victorious and advanced toward Frankfort.

RICH MOUNTAIN (July 11, 1861). Upon the secession of Virginia, Maj. Gen. Geo. B. McClellan at once called for Union volunteers in West Virginia, and in command of about 30,000 men began his campaign against the Confederates. After several skirmishes the Confederates came to a stand at the foot of Rich Mountain, in Randolph Co., W. Va., and on July 11 they were completely routed by Rosecrans, with a loss of about 440 men. The Union lost 46 men.

RIDGEFIELD (April 27, 1777). When General Silliman, at Ridgefield, Conn., learned that the British had landed at Cedar Point, he organized an army with Generals Arnold and Wooster. Breastworks were thrown up to protect Ridgefield, and as the British advanced Wooster and Arnold attacked their rear. After continued fighting the British continued their march to the coast, where they embarked under fire from the regiments of Arnold and Silliman. The British lost 200 men; the Americans, 60 men.

RIEL, LOUIS (1844-1885). Leader of "Riel's Rebellions" in Canada (1869 and 1884). A half-breed Indian and French-Canadian. In 1869, when the Northwest Territory was bought by Canada from the Hudson Bay Company, Riel led the half-breeds against the government and prevented the governor from entering the territory. Sir Garnet Wolseley put down the rebellion. Riel fled to the United States. In 1873 and 1874 he was elected to the Dominion Parliament, but was expelled. In 1884 he led some French half-breeds on the Saskatchewan in a rebellion over some lands, was captured, and hanged for high treason.

RIENZI, COLA DI (about 1313-1354). A popular leader of Rome. He took a stand against the nobles for the murder of his brother. He took the title of consul of orphans, widows, and the poor. In 1347 he drove the aristocratic senators from Rome and took the title of tribune of liberty, peace, and justice. He summoned 200 deputies from the Italian states to take measures for the improvement of the condition of Italy. They met in 1347. He made some impolitic moves and fell from power. Later he was imprisoned. Then he entered a monastery. He made a second attempt to regain his power and was successful. His disposition had changed and after seven months' rule he was murdered in a rebellion of the people in 1354.

RIVER RAISIN (January 22, 1813). The Americans under Winchester, while protecting the inhabitants of Frenchtown (now Monroe, Mich.), were encamped near the River Raisin. Suddenly they were attacked by the British and Indians. The Americans were overpowered and taken prisoners.

ROANOKE ISLAND (February 7, 8, 1862). After the occupation of the forts controlling Pamlico Sound, by the Union army, the Confederates moved to Roanoke Island, between Albemarle and Pamlico Sounds. Here the Confederates had thrown up immense fortifications which guarded all the main routes to Norfolk, making communication extremely difficult. A large fleet was sent from the north under Burnside, to take the island, but off Cape Hatteras a terrific storm damaged the boats considerably and some were also found too large to cross the bar. The remaining vessels entered the channel, drove the Confederate fleet before them, and landed on Roanoke Island. In a short time the Federals were in possession of the island, and the Confederate fleet totally destroyed.

ROBERTS, SIR FREDERICK SLEIGH, LORD ROBERTS OF KANDAHAR, PRETORIA, AND WATERFORD (1832-). British soldier; born at Cawnpur, India. Served during the Indian Mutiny (1857) at Lucknow, and at Cawnpur, where he received the Victoria Cross; took part in the Abyssinian War (1867-8), the Afghan War (1878); took Kabul (1879); commander-in-chief in South Africa in both Boer wars (1881 and 1899); commander-in-chief of the British army (1900). Affectionately known to the soldiers as "Bobs."

ROCHAMBEAU (*ro-shon-bo'*), **JEAN BAPTISTE DONATIEN DE VIMEUR, COUNT DE** (1725-1807). A French soldier; born at Vendôme; entered the French army (1742); served in the War of the Austrian Succession, and was made colonel (1747); fought in the Seven Years' War in Germany (1758-1761); made lieutenant general (1780); sent to America with 6,000 men to aid in the patriot cause (1780); went to the aid of Lafayette at Yorktown, where the British general Cornwallis surrendered (1781); on his return to France he was appointed governor of Picardy and Artois; and a deputy in the assembly of notables (1787); made a field marshal (1791); was put in command of the Army of the North; under Napoleon he was made a grand officer of the Legion of Honor (1804).

ROCHE, TROILUS DE MESGOUAT, MARQUIS DE LA. Born in Brittany, France, about middle of sixteenth century. Bargained with King Henri IV. to colonize New France (1598); appointed lieutenant general of Canada, Hochelaga, Newfoundland, and Labrador, and adjacent countries "not possessed by any Christian prince." Set sail with an expedition consisting largely of convicts gathered from prisons (1598) and in a small vessel further explored the mouth of St. Lawrence river. Left 40 convicts on Sable Island intending to transfer them to mainland, but was tempest driven back to France. Twelve survivors taken off by Chefdhotel (1603).

RODGERS, FREDERICK (1842-). Rear admiral United States navy; born at Havre de Grace, Md.; graduated United States Naval Academy (1861); served during Civil War; inspector of ordnance navy yard, Washington (1872-1873); lighthouse inspector, 11th district (1876-1877), 4th district (1881-1883), 3d district (1887-1890); captain of yard, New York Navy Yard (1893-1896); president of board of inspection and survey (1898-1901); rear admiral (March 3, 1899); senior squadron commander, Asiatic fleet (1901); commander-in-chief (1902); commandant New York Navy Yard (1903-1904); retired (October 3, 1904).

RODGERS, JOHN (1771-1838). An American naval officer; born in Harford Co., Maryland; entered the navy (1798); commanded the John Adams and the Congress in the Mediterranean squadron (1803-1804); commanded the squadron (1805); conducted peace negotiations with Tripoli and Tunis; served with distinction in charge of a squadron in the War of 1812; took many prizes in his cruises with the President; president of the board of naval commissioners (1815-1824 and 1827-1837); secretary of the navy (1823); commanded the Mediterranean squadron (1824-1827).

RODGERS, JOHN (1812-1882). Son of the preceding John Rodgers; rear admiral; born in Harford Co., Maryland; midshipman in the navy (1828); explored the North Pacific and Chinese waters (1852-1855), and in the Arctic Ocean (1855); commanded the Galena in the action at Fort Darling (1862); while in command of the monitor, Weehawken, he captured the Confederate ironclad Atlanta after five minutes' action (1863); for this he was made commodore; rear admiral and superintendent of the U. S. naval observatory (1877).

ROLAND, MANON JEANNE PHLIPON, MADAME (1754-1793). Queen of the leaders of the Gironde; born in Paris; married Jean Marie Roland, who became minister of the interior, and who was an ardent Girondist. Madame Roland closely identified herself with her husband's political career. She supported the Girondist cause even after the fall of that party and the flight of her husband to Rouen. She was arrested (1793) and after a trial before the Revolutionary Tribunal she was guillotined. Her husband committed suicide (1793) on hearing of the execution of his wife.

ROLFE, JOHN (1585-1622). English colonist in America; came to Jamestown, Va. (1610); married Pocahontas (1613) and took her to England (1616). After her death (1617) he returned to Virginia and was a member of the Council (1619).

ROLLO THE GANGER or **WALKER** (? -931). A Norse chieftain, whose origin is unknown; gained land about Rouen by the Peace of Clair-sur-Epte, granted by King Charles the Simple of France (912); this land became the duchy of Normandy, and Rollo the first duke; his son, William Longsword, was associated with his father as ruler; Rollo was baptized and became a firm ally of Charles the Simple.

ROME, in Italy. (1) July, 390 B.C. The Greeks invaded Latium and demanded that the Roman ambassadors should be delivered to them, but the proposal was rejected by the citizens. After an utter defeat of the Romans near the Tiber, the city was abandoned, after which it was taken, plundered, and burned by the Gauls. (2) 410. Alaric, king of the Visigoths, arrived before Rome in the autumn of 408. Twice the city succeeded in getting Alaric to retire with his army, but as the Romans failed to yield to his dictation he laid siege to Rome for the third time. On April 24, 410, the city was abandoned to the fury of the Goths. Part of the city was burned, many were killed, and the invaders withdrew loaded with an immense booty. (3) 455. After the murder of Valentinian III., Rome was plundered for 14 days by the Vandals. (4) 1527. During the Reformation Rome was taken by storm under the constable of Bourbon. (5) September 20, 1870. In consequence of the withdrawal of the French garrison from Rome, during the Franco-German War, that city was captured by the Italian army and the secular power of the pope abolished.

ROSECRANS, WILLIAM STARKE (1819-1898). Eminent American soldier; born at Kingston, Ohio; held several important commands in the Civil War and was almost uniformly successful until his defeat at Chickamauga by Bragg; minister to Mexico (1868); elected to Congress (1880 and 1882).

ROSSBACH, a village in Prussian Saxony. November 5, 1757, in the second campaign of the Seven Years' War, Frederick II. defeated the Austrian and French armies. The loss to the Prussians was only 300; that of the allies was 1,300 slain and 6,000 prisoners. The battle was important as turning the tide when the fortunes of Prussia were at their lowest ebb.

ROUEN. (1) During the Hundred Years' War, Henry V. of England conducted a successful campaign in France. In July, 1418, he undertook the siege of Rouen, a town in northern France. Reinforcements from Paris made it possible for Rouen to resist the siege longer, but finally, on January 13, 1419, the town was surrendered. (2) Rouen was taken by the duke of Guise from the Huguenots, October, 1562, and 1591.

RUPERT OF BAVARIA, PRINCE (1619-1682). Nephew of Charles I. of England, and his ablest general in the Civil War; born at Prague; fought throughout the Civil War against the parliament; aided the royalists in Ireland (1648); given a command under the duke of York; fought against the Dutch fleet (1665-1666); became lord high admiral (1673); first governor of the Hudson Bay Co. (1670); the adjacent territory was called Rupertsland in honor of the Prince.

RUYTER (*roi'ter*), **MICHAEL ADRIAANSZOON DE** (1607-1676). A Dutch admiral; born at Flushing; made rear admiral, and aided the Portuguese against the Spaniards (1641); fought the Barbary pirates (1647); served under Tromp against the English (1653); received the chief command in the second war against the English (1664); driven back to Holland by Monk; made admiral-in-chief (1664); burned some ships in the Thames; attacked English and French fleets (1672); defeated Prince Rupert (1673); joined the Spaniards against the French (1675); attacked the French fleet in the Bay of Catania, but was defeated and mortally wounded.

RYE HOUSE PLOT. A conspiracy in 1683 among extremists of the Whig party to waylay King Charles

II. of England, on his return from Newmarket, and to assassinate him with his brother, the duke of York, at the Rye House on the river Lea; the Protestant duke of Monmouth was to be placed on the throne in Charles's place; the house at which the king was stopping at Newmarket took fire accidentally and he left the place eight days sooner than the date expected, thus frustrating the plot. The royalists took advantage of this plot in order to implicate the whole Whig party and Lord William Russell and Algernon Sidney were accused of complicity and condemned to death.

SACKETT'S HARBOR (May 29, 1813). With an army of regulars and Indians, the British sailed into Sackett's Harbor, on the eastern shore of Lake Ontario, in New York, and attacked the Americans there. The Americans had had little training and were at first obliged to retreat, but finally they rallied and drove the British back to their ships.

SACRAMENTO. Capital of California, on Sacramento river. Capt. John A. Sutter obtained a large grant of land from the Mexican government and built New Helvetia fort (1839); lately rebuilt and preserved as the first point in California reached by pioneer miners from the East (1848). Village named Sacramento laid out (1848) only 15 feet above low water, causing destructive floods (1850, 1852, 1853); levees have raised level to 23 feet; great fires (1852, 1854); incorporated as a town (1849); became state capital (1854); chartered as city (1863).

SACRAMENTO PASS (February 28, 1847). After the Americans had taken possession of Santa Fe, New Mexico, they turned their attention toward Chihuahua, in northern Mexico. A force of 800 men under Colonel Doniphan was joined by Weightman's artillery at El Paso del Norte, on the Rio Grande, and together they started for Chihuahua. A band of Mexicans posted at the river crossing were scattered after a brief conflict, and on March 1 and 2, 1847, the Americans entered Chihuahua.

SAGUNTUM. An ancient Iberian city of Valencia, near the eastern coast of Spain, which tradition says was founded by Greeks from Zacynthus and Rutulians from Aræa. The town became an ally of Rome after the treaty of 226 B. C., which confined the Carthaginians to their own side of the Ebro. Saguntum, on its refusal to acknowledge the Carthaginian supremacy, was attacked by Hannibal in 219 B. C. After withstanding a siege of eight months, rather than surrender they burned themselves and the city, and nothing but ashes was left to the conqueror. Rome declared war against the Carthaginians for attacking their ally.

SAILOR'S CREEK (April 6, 1865). While Lee's army of Confederates was retreating from Richmond and Petersburg, Va., toward Farmville, it was overtaken at Sailor's Creek by a party of Federals under Custer, Crook, and Devens. In the struggle which followed, a large number of the Confederates were surrounded and many prisoners taken.

ST. ALBANS. A city of Hertfordshire, England, and the scene of two battles during the Wars of the Roses. (1) May 22, 1455, Richard, duke of York, defeated and took prisoner Henry VI. of England. (2) February 17, 1461, Queen Margaret defeated the earl of Warwick.

SAINT-ARNAUD (*ar-no'*), **JACQUES LEROY DE** (1796-1854). A French marshal; born in Paris; served in La Vendée (1831); received the rank of brigadier general as a reward for the defeat and capture of the Algerian chief, Bon-Maza (1847); led a brigade in Paris at the revolution of 1848; received the command of the second division of the Army of Paris (1851); appointed war minister and was one of Napoleon's chief supporters in the coup d'état of 1851; made a marshal of France, and grand equerry to the emperor (1852); Saint-Arnaud commanded the French forces at the opening of the war in the Crimea; was present at the battle of the Alma, but died soon after on board a French war vessel.

ST. BARTHOLOMEW'S, MASSACRE OF. August 23, 24, 1572. As the result of a feud in France between the House of Guise and the Catholics, on the one hand, and the House of Condé and the Huguenots, on the other, the night of Saint Bartholomew's day was appointed for a general massacre of the Huguenots. This carnival of blood lasted for several weeks and extended throughout France. As the estimates of the mortality vary from 2,000 to 100,000, it is impossible to make a correct calculation.

ST. CLAIR, ARTHUR (1734-1818). An American soldier; born at Thurso, Scotland. He entered the British army, was in the siege of Louisburg (1758), and at Quebec (1759); resigned his commission and settled in Pennsylvania (1764); received a commission as colonel in the Continental army (1775); became major general and was put in command of Ticonderoga (1777); joined the main army under Schuyler at Fort Edward; became president of the Continental Congress (1787); governor of the Northwest Territory (1789-1802); ranking officer in the U. S. army with the rank of major general (1791-1792); sent on an expedition against the Miami Indians, who completely defeated and routed his forces; he resigned his command (1792), and in 1802 Jefferson removed his governorship from him.

ST. CLAIR'S DEFEAT (November 4, 1791). In order to subdue the Indians in the Northwest Territory, General St. Clair organized an expedition in 1791. On November 4th they found themselves surrounded by Indians near the eastern fork of the Wabash river. Although thrown into utter confusion, the Americans fought bravely until St. Clair ordered a retreat toward Fort Washington. Of the original 1,400 men, 630 were killed and 280 wounded; only about 500 being able to escape.

SAINT-JUST, ANTOINE LOUIS LEON FLORELLE DE (1767-1794). A French revolutionist; born at Decize in Nivernais; became a devoted follower of Robespierre; appointed a lieutenant colonel in the national guard of his commune; chosen a member of the committee of public safety (1793); elected president of the convention (1794); was instrumental in bringing Danton and Hébert to the guillotine. He fell with Robespierre, by the guillotine, on the fateful Ninth Thermidor.

ST. LOUIS. Principal city of Missouri. August Chouteau, aged 15 years, under orders of Pierre Laclede Liguest, established a fur trading station, Liguest arriving later to lay out the town he predicted would eventually be one of the largest in the country (1764). It was called Laclede's village, later St. Louis after the King of France. When France, by secret treaty, ceded all territory west of the Mississippi to Spain (1762), Spain taking possession (1770), it became capital of upper Louisiana under Lieut. Gov. Don Pedro Piernas, but remained essentially French. Indians instigated by English attacked the city (1780); city formally retroceded to France. (1800), and about three years later came into the United States by the "Louisiana Purchase." Immigration was rapid, population increased, first newspaper published (1808), town incorporated (1809). First steamboat (1815) opened new era of prosperity. John Jacob Astor opened "Western Branch American Fur Company" (1819); chartered as city (1822). Great fire (1849). Population an indication of progress and importance: 1,400 (1810); 77,860 (1850); 575,238 (1900).

ST. PAUL. Capital of Minnesota; named from rude log chapel at corner of Third and Minnesota streets erected by Father Lucien Galtier when sent out by Bishop Dubuque, who visited the site (1839); previously known by Indians as Imnijiska, "White Rock." First steamboat arrived at Fort Snelling (1823). Opened for settlement (1837). Cut from Wisconsin and left without a government (1848); received first charter from territorial legislature (1854).

SALAMANCA (July 22, 1812). Lord Wellington defeated the French near Salamanca, a city of Spain, during the Peninsular War.

SALAMIS (September 28, 480 B. C.). In a great sea fight near Salamis, an island not far from Athens, the Greeks defeated the fleet of Xerxes, king of Persia.

SAMARIA. A city of ancient Palestine founded by Omri in ninth century B. C. and made capital of the kingdom of Israel. It was northwest of Shechem, and situated on an isolated hill. Under Ahab, Samaria became a center of Baal worship. It was besieged by the Syrians, during the reigns of Ahab and of Joram, but was not captured. Shalmaneser, king of Assyria, besieged the city for three years, and it was finally captured by Sargon, his successor, in 722 B. C. Alexander the Great captured the town and after killing and expelling many of the inhabitants replaced them with Macedonian colonists. John Hyrcanus completely destroyed Samaria 120 B. C., and after it was rebuilt it was restored to the descendants of the expelled Samaritans. The Emperor Augustus gave the town to Herod the Great, who renamed it Sebaste, in honor of Augustus. The ruins of a temple which Herod built still exist. In the third century Samaria was an episcopal see. After the Mohammedan conquest of Palestine the town began to decline in importance.

SAMNITE WARS. These wars between Rome and the Samnites of the south of Italy were three in number and lasted 53 years (343-290 B. C.). The first Samnite war was caused by the Capuans of the Campania, the country around Rome, placing themselves under the protection of Rome. It lasted until 341 B. C. The second Samnite war, the most important of them, lasted from 326 to 304 B. C.—22 years. The Samnites gained the first successes, notably that of the battle of Caudine Forks, but later the consul Fabius overcame them. Their capital, Bovianum, was stormed in 305 B. C., and the power of Rome was acknowledged. The third Samnite war lasted from 298 to 290 B. C. The help of neighboring tribes availed the Samnites nothing and they were completely overthrown in the battle of Sentinum (295 B.C.). This ended the struggle and gave the whole peninsula into the hands of the Romans. The Samnites, an ancient family, a branch of the Sabines, became enemies of the Romans when the city was founded.

SANDS, JAMES HOBAN (1845-). Rear admiral (retired) United States navy; born at Washington; graduated United States Naval Academy (1863); served in Civil War; governor of naval home, Philadelphia (1898-1901); member of naval retiring board (1901), president (1902); rear admiral (April 11, 1902); commandant League Island Navy Yard (1902-1903); commanded coast squadron, North Atlantic fleet (1903-1905); superintendent of naval academy (1905-1907); retired (July 12, 1907).

SANDY CREEK (May 30, 1814). While the Americans were equipping some vessels at Sackett's Harbor, the British conducted a blockade to prevent the entrance of guns and cables for the boats. To Captain Woolsey was intrusted the task of conveying them from Oswego Falls by way of Sandy Creek to Sackett's Harbor. A British detachment attempted to intercept Woolsey, but the Americans were prepared for the attack and in a short time had defeated and captured the British squadron and 170 men.

SAN FRANCISCO. Metropolis of the Pacific coast. First settlement was made by two Franciscan monks, Palou and Cambon, establishing an Indian mission (1776) called San Francisco de Asisi, the name of San Francisco having been given previously to the bay (1769). Under Mexican control (1822) the small village of Dolores grouped round the mission, which was secularized (1834). Near the best anchorage, three miles northeast of the mission, a small trading village, Yerba Buena, sprang up (1836); United States took possession (1846), its population being 450, and name changed to San Francisco. With the discovery of gold (1848) population rose rapidly; in March 800, in September (1849) 10,000. Buildings of most combustible materials, and huddled together, produced great fires (1849, 1850, 1851) destroying property valued at $16,000,000. Incorporated (1850); city and county consolidated (1856). Great earthquake and succeeding fire (1906), many lives lost, and $300,000-000 property destroyed.

SAN JACINTO (April 21, 1836). The final battle during the struggle of Texas for independence was fought near San Jacinto, Texas. The Texans numbered 740, and were led by General Houston, while the Mexicans were 1,400 strong led by Santa Anna. After a brief engagement the latter were defeated with a loss of 1,360, while the Texans lost only 30.

SAN JUAN HILL (July 1, 2, 1898). During the Spanish-American War, the American troops assaulted the works at San Juan Hill, near Santiago, Cuba. Through the efforts of the Rough Riders under Colonel Roosevelt, the Americans were victorious and the Spaniards retreated to Santiago.

SANTIAGO. Decisive battle of the world (1898), resulting in driving Spanish rule and dominance from Cuba and placing the island under the protection of the United States. Cuba being the "key" to the Gulf of Mexico marks the importance of the transfer of dominion and the fact that none but the United States must hold it. About 16,000 Americans were landed under General Shafter June 20, and July 1-3 fought the battle of Santiago. Stubborn defense by the Spaniards behind barbed wire and the marvelous headlong dash and courage of the Americans ended in a decided victory for the Americans, and Cuba was free. The Spanish navy of the Atlantic was speedily a series of smoking wrecks. The city of Santiago surrendered July 17.

SANTIAGO HARBOR (July 3, 1898). As soon as Cervera, the commander of the Spanish fleet, learned that the Americans had laid siege to Santiago, he attempted to leave the harbor. When his vessels reached the open sea the Americans started in hot pursuit, and soon the entire Spanish fleet was captured or destroyed, and about 1,300 men taken prisoners. The loss to the Americans was 12 killed and wounded.

SARAGOSSA. The city of Saragossa, in Spain, has been the scene of many sieges. It is especially famous for the heroism with which the citizens, led by Palafox, defended it against a large French army in 1808-1809. The French finally captured the city after a hard-fought contest in which they suffered great losses.

SARATOGA. Decisive battle of the world (1777), securing the colonists aid from France, and ultimate victory. The colonists had rebelled at injustice; the power of far-away England was called forth to crush them back to obedience in a war of political iniquity and folly ending in national disgrace and disaster to England. The army under General Burgoyne continued to advance and seemed irresistible and the campaign was considered almost over. Then disappointments as to reinforcements, loss of stores and munitions, and reverses in numerous minor actions began, and General Gates massed the Americans at Stillwater to make heroic efforts to turn the tide. The English were defeated, the entire army captured, and the independence of the colonists assured.

SARDIS. An ancient city of Asia Minor, the capital of Lydia, situated at the northern base of Mount Tmolus, on the Pactolus. Aeschylus makes first mention of the city. In the reign of King Ardys (680-631 B.C.) it was taken by the Cimmerians. Cyrus captured the city 549 B. C.(?). In the reign of Crœsus, the last Lydian king, Sardis attained the height of its prosperity. After the overthrow of the Lydian monarchy the Persian satraps made the city their residence. About 499 B.C. the Ionians burned it, and a little later it served as the assembling place for Xerxes' vast army on the occasion of his invasion of Greece. Having been rebuilt it was seized by Alexander in 334 B.C. and made a Greek city. It was of importance under the Roman Empire. An earthquake destroyed it in the reign of Tiberius, but it was again built up. In 1402 the city was demolished by Tamerlane. Ruins of the ancient city exist, but the modern city, Sart, is a small village inhabited by nomadic tribes.

SAUNDERS CREEK. See CAMDEN.

SAVAGE'S STATION (June 29, 1862). One of the Seven Days' Battles before Richmond, Va. From Fair Oaks, the Federals, led by Sumner and Heintzelman, moved toward Savage's Station, east of Richmond. Heintzelman destroyed the stores there, and marched south across White Oak Swamp, leaving Sumner at Savage's Station. On June 29 the Confederates, led by Magruder, attacked Sumner. The battle continued until dark, when Sumner withdrew toward the south with a loss of 1,590 men.

SAVANNAH. Second largest city in Georgia. Founded by General James Edward Oglethorpe as a settlement for pauper Englishmen (1733); emigrants speedily reinforced by Germans and Scotch; visited by Charles and John Wesley on a tour of investigation (1735). During the Revolutionary War the city was fortified by the Americans, and Colonel Campbell with an army of 2,000 British attacked about 900 Americans (1778). The latter were defeated and surrendered with supplies. Americans, assisted by a French fleet, ineffectually besieged Savannah (1779).

SAXE, MAURICE, COUNT DE (1696-1750). A French marshal; born at Goslar, Germany; son of Augustus the Strong, elector of Saxony and king of Poland; was present at the capture of Lille, and the siege of Tournay, during the Spanish Succession War; served before Stralsund with the Russo-Polish forces (1711); fought against the Turks in Hungary under Prince Eugene; distinguished himself in the siege of Philippsburg (1734); during the war of the Austrian Succession he invaded Bohemia and stormed Prague; commanded the French army in Flanders; gained the victories of Fontenoy (1745), and of Raucoux (1746); he defeated the duke of Cumberland at Laffeld and captured Bergen op Zoom (1747). For brilliant work done at Raucoux, Saxe was rewarded with the title of marshal general of France, an honor which had hitherto been granted to Turenne alone.

SCAN'DERBEG, PRINCE, or **BEY ALEXANDER** (1403-1468). A famous patriot chief of Albania. His real name was George Castriota; delivered as a hostage to Amurath II. (1413), and was brought up in Islamism; became master of the town of Croia (1443); vanquished the Turks and banished them from Epirus, accomplishing this task in twenty-two pitched battles; at his death the people, lacking a mainstay, allowed the Turks to gain control of the country.

SCHLEY, WINFIELD SCOTT (1839-). Rear admiral (retired) United States navy; born near Frederick City, Md.; graduated United States Naval Academy (1860); in Civil War (1861-1865) and in Korean War (1871); lighthouse inspector (1880-1883); commanded the Thetis, on the Greely relief expedition (1884), rescuing Lieutenant Greely and six survivors at Cape Sabine; for this he received from Maryland legislature a gold watch and vote of thanks, and from Massachusetts Humane Society a gold medal; chief of bureau of equipment and repair (1884-1889); chairman of lighthouse board (1897-1898); during Spanish War commanded flying squadron (1898), and was in immediate command in battle of Santiago de Cuba (July 3, 1898), resulting in destruction of Admiral Cervera's fleet; commander-in-chief of South Atlantic squadron (1899-1901); rear admiral (March 3, 1899); retired (October 9, 1901). For services at Santiago he received a gold sword from people of Pennsylvania, silver sword from Royal Arcanum, gold and jeweled medal with thanks of Maryland legislature, a silver service, etc.

SCHROEDER, SEATON (1849-). Rear admiral United States navy; born at Washington, D. C.; graduated United States Naval Academy (1868); on leave, was associated with H. H. Gorrings in removing obelisk from Egypt to New York (1879-1880); member of board of inspection and survey (1894-1896); for "eminent and conspicuous conduct" in Spanish War, was advanced three numbers in rank; naval governor of Island of Guam (1900-1903); chief intelligence officer (1903-1906); commander 3d division, 2d squadron, Atlantic fleet (1908). Prize essayist, United States Naval Institute (1894).

SCHUYLER (*sky'ler*), **PHILIP JOHN** (1733-1804). A famous American soldier and statesman; born at Albany, N. Y.; served as captain in the English army during the French and Indian War (1756); member of the colonial assembly (1768); delegate to the Continental Congress (1775), which appointed him one of the first four major generals; forced by ill health to surrender the leadership of the expedition to Canada; served as Indian commissioner and negotiated important treaties with the Indians; served in Congress (1777-1781); state senator (1780-1797); U. S. senator (1789-1791 and 1797-1798); surveyor general of New York state from 1782; assisted in preparing New York state's code of laws.

SCHWARZ'ENBERG, KARL PHILIPP, PRINCE VON (1771-1820). Austrian field marshal; born at Vienna; served against the Turks and the French republic; ambassador to St. Petersburg (1808); fought at Wagram (1809); conducted the negotiations for the marriage of Napoleon to the archduchess Maria Louisa; commanded the Austrian forces sent to aid France against Russia (1812); generalissimo of the armies of the coalition which was defeated by Napoleon at Dresden, but won the victory of Leipzig; on the return of Napoleon from Elba, Schwarzenberg again entered France, in command of the allied army; made president of the imperial council for war.

SCIPIO, PUBLIUS CORNELIUS AEMILIANUS, AFRICANUS MINOR (185?-129 B. C.). Very great Roman general and able statesman; a younger son of Lucius Aemilius Paulus, the conqueror of Macedon, but was adopted by his kinsman, Publius Scipio; served in Spain (151 B. C.); and in the third Punic War (149 B. C.); elected consul (147 B. C.); destroyed Carthage (146 B. C.); ambassador to Egypt and Asia; subdued and destroyed Numantia (132 B. C.); led the aristocratic party in political affairs.

SCOTT, WINFIELD (1786-1866). An American general; born near Petersburg, Va.; appointed captain of light artillery (1808); served in the War of 1812; fought at the battle of Chippewa, and Lundy's Lane, where he was twice wounded; prepared a manual of military tactics, which was the first to be issued in the U. S.; appointed commander-in-chief of the army (1841); served in the Mexican War (1847), winning the battles of Cerro Gordo, Contreras, and Churubusco, together with the decisive battles of Molino del Rey and Chapultepec; nominated as whig candidate for the presidency, but was unsuccessful. Office of lieutenant general was conferred by brevet on General Scott.

SEA OF JAPAN (May 27, 28, 1905). When, in the Russo-Japanese War, the Russian government ordered the Baltic fleet to Japan, the Japanese allowed the vessels a free passage until they reached the Sea of Japan. There the Japanese fleet formed a circle around the hapless armada, and fought the greatest of Japan's naval battles. The struggle did not cease until the Russian fleet was practically destroyed or captured. Japan's losses were three torpedo boats, 116 men killed and 538 wounded. Russia lost her fleet of 38 vessels, 4,000 men killed, and 7,300 taken prisoners.

SEBASTOPOL (October, 1854-September 11, 1855). During the Crimean War, Sebastopol, a Russian port on the Black Sea, was the scene of a long siege by the allied forces. The city was surrounded by new fortresses and the harbor closed by sunken ships of war. Attacks upon the city were made repeatedly, and finally, in 1855, after a three weeks' bombardment, the Russians evacuated the city, which was then occupied by the allies.

SEBREE, URIEL (1848-). Rear admiral United States navy; born at Fayette, Mo.; graduated United States Naval Academy (1867); member Arctic relief expedition (1873), and Greely relief expedition (1884); lighthouse inspector, Portland, Oregon (1885-1889), San Francisco (1898-1901); commander naval station, Samoan Islands (1901-1902); commanding 2d division, 1st squadron, Pacific fleet (1908).

SECORD, LAURA (-). The Canadian heroine of Beaver Dams (1813), who walked 20 miles, eluding numberless American sentries, to warn General Fitzgibbons of the intended attack by Americans under General Dearborn.

SEDAN. Decisive battle of the world (1870). Napoleon III. was trying hard to retain his throne by waging spectacular wars, remodeling Paris, and by other means to keep the French national mind from thinking. France was jealous of Prussian aggrandizement and several occurrences augmented this feeling. Finally war was declared by the French Emperor July 15. It speedily developed that France was utterly unprepared and that Germany had plans of campaign arranged. After an unbroken series of disasters following the first skirmish the struggle culminated at Sedan. The magnificent strategy of Moltke finally drove the French army to a common center. Surrounding them, within a circumference of 16 miles, were 200,000 men, and 429 pieces of artillery which could concentrate their fire wherever Moltke directed. There was no outlet. Napoleon III. surrendered with 86,000 men. Thus ended the second Empire of France and thus came into being the present French Republic. The war is generally regarded as the last card which Napoleon III. had to play to bolster up his falling Empire.

SELFRIDGE, THOMAS OLIVER (1836-1908). Rear admiral (retired) United States navy; born at Boston; graduated United States Naval Academy (1854); served during Civil War; commanded survey expedition to Isthmus of Darien (1870-1871); in charge of torpedo station, Newport (1881-1884); commandant navy yard, Boston (1890-1893); president of board of inspection and survey (1894-1895); commander in chief of European squadron (1895-1897); rear admiral (February 28, 1896); retired (February 6, 1898). Honorary member of Royal Geographic Society, Belgium; awarded gold medal by Czar of Russia in honor of his coronation; made a chevalier of the Legion of Honor, France.

SEMMES (*sems*), **RAPHAEL** (1809-1877). An American naval officer; born in Charles County, Maryland; appointed a midshipman in the navy (1826); served in the Mexican War as flag lieutenant with the gulf squadron; resigned from the navy at the secession of Alabama, and became a commander in the Confederate navy; commanded the Sumter (1861-1862), and the Alabama (1862-1864); when the latter was sunk by the Kearsarge (1864), Semmes escaped to England; returned to command the James river squadron, with the rank of rear admiral; when his squadron was destroyed, he served in the army, surrendering with Gen. Joseph E. Johnston.

SEMPACH (July 9, 1386). Under the walls of Sempach, a small town in Switzerland, Leopold of Austria, with 4,000 men, was routed by 1,500 Swiss. This victory secured the independence of the Swiss.

SENTINUM (295 B. C.). The Roman consuls, Q. Fabius Rullianus and P. Decius Mus, advanced to Umbria, where the decisive battle of Sentinum was fought. After a long contest the Romans were victorious, thus ending the third war against the Samnites.

SERVILE WARS. Rebellions of slaves against Rome. The first broke out in Sicily in 134 B. C., led by Eunus, a Syrian. They overran the island and defeated army after army. Order was restored in 132 B. C. by the consul, Publius Rupilius. The second Servile War broke out in 102 B. C. in Sicily, but was put down speedily by the consul, Manius Aquillius. A third and more formidable insurrection occurred in 73 B. C. under the leadership of Spartacus (which see).

SEVEN WEEKS' WAR. A brief struggle (1866) between Prussia and Italy against Austria and her German allies, instigated by Bismarck as a part of his plan for forcing Austria out of the German confederation.

SEVEN YEARS' WAR (1756-1763). In it France and England fought for supremacy in North America and in India. All of the great European nations were involved in it. It was closed by the Treaty of Paris (February 10, 1763).

SEVILLE. In 1248 Seville, a city of Spain, was taken by Ferdinand III. of Castile, and 300,000 Moors left for Granada and Africa.

SHAFTER, WILLIAM RUFUS (1835-1906). American soldier; born at Galesburg, Mich. Served through the Civil War and rose to brigadier general of volunteers; entered the regular army and (1897) was brigadier general commanding the Department of California. In the Spanish-American War as major general of volunteers he carried the heights of El Caney and San Juan (July 1-3, 1898); commanded California and Columbia Department (1899-1901); retired (1901).

SHAYS, DANIEL (1747-1825). The leader in Shays's Rebellion; born in Hopkinton, Mass.; became a captain in the Revolutionary War. The rebellion was an uprising in 1786-1787 occasioned by the great economic distress following the revolution; those concerned drew up demands and grievances, and in the summer of 1786, headed by Daniel Shays, the malcontents threatened violence; the fighting centered about Springfield, where an armed mob broke up a session of the supreme court in 1786; Governor Bowdoin promised pardon to all rebels who would submit before January 1, 1787, but the disturbances continued and the governor ordered out 4,400 militia under Gen. Benjamin Lincoln; an attack was planned by Shays upon the arsenal in Springfield, but the defenders under General Shepard met them, and at the first cannon fired the insurgents fled, were pursued and dispersed by General Lincoln. The insurrection soon collapsed; fourteen of the leaders were condemned to die but were pardoned by Governor Hancock; on June 13,1788, general amnesty was granted to all except a few individuals. By the legislature of 1787 many of the grievances were redressed; thus the insurrection was not an utter failure.

SHERIDAN, PHILIP HENRY (1831-1888). A famous American general; born at Albany, N. Y.; graduated at West Point (1853); served in the Indian wars in Oregon; infantry captain (1861); given a cavalry regiment and served with distinction; commanded the cavalry of the Army of the Potomac (1864); placed in command of the Army of the Shenandoah (1864); for service rendered he was made a brigadier general. Sheridan's famous ride from Winchester to Cedar Creek (1864), a distance of twenty miles, in time to turn defeat into victory for the Northern army, has been commemorated in a stirring poem by T. B. Read; several more victories caused Sheridan to be appointed commander-in-chief of the army in 1883; he was with the German armies during the Franco-Prussian War (1870); and served in Louisiana and Texas during the time of their reconstruction.

SHERMAN, WILLIAM TECUMSEH (1820-1891). An American general-in-chief; born at Lancaster, Ohio; served in Florida and California; commissioned colonel (1861); for distinguished service in the battles of Bull Run and Shiloh (1862) he received the title of major general; served at Vicksburg and Chattanooga; appointed by Grant to command the southwest (1864); Atlanta evacuated by Hood (1864); with 65,000 men he commenced his famous march to the sea; Savannah capitulated (December 21, 1864); the army moved northward, defeating the Confederates at every turn; on April 26, 1865, Johnston surrendered to Sherman; commanded the Mississippi division for four years; was created commander-in-chief of the army by President Grant (1869); retired at his own request to allow Sheridan to take his place (1883).

SHILOH. See PITTSBURG LANDING.

SHIPKA PASS. August 21-26 and September 9-17, 1877, Shipka, a pass in the Balkan Mountains of Bulgaria, was stoutly held by the Russians against the desperate assaults of Suleyman Pasha.

SICILIAN VESPERS. The massacre of the French in Sicily begun at Palermo on the day after Easter, 1282, while the vesper bells were ringing. It was caused by the cruelty of Charles of Anjou towards the Sicilians. The massacre spread from Palermo and became general over the island. Charles of Anjou tried to recover the island, but the Sicilians, with the aid of Peter III. of Aragon, defeated him, and the Angevin rule in Sicily ended.

SICKLES, DANIEL EDGAR (1825-). An American soldier and politician; born in New York City; appointed corporation counsel of New York City (1853); was secretary of legation at London (1853-1855); elected to the New York State Senate; served in Congress (1857-1861); appointed colonel of New York volunteers at the outbreak of the Civil War; appointed major general (1862); lost a leg at Gettysburg; was retired with rank of major general (1869); sent as minister to Spain (1869-1873); on his return became president of the New York board of civil service commissioners; sheriff of New York county in 1890; and elected to Congress as a democrat (1892).

SIEYES (*se-ay-yais'*), **EMMANUEL JOSEPH, COMTE ABBE** (1748-1836). A French revolutionary leader, generally known as the Abbé Sieyes; was born at Fréjus; his pamphlet, "Qu'est-ce que le Tiers-Etat?" (1789), made him famous; elected a deputy for Paris; instrumental in forming the national assembly; France was divided into departments mainly by his work; approved of the "Rights of Man" (1789); opposed the royal veto; elected to the legislative assembly, and voted for the king's death; with Rewbell (1795) he organized the Batavian republic, and negotiated a treaty between France and Holland; sent as ambassador to Berlin (1798); was a member of the Directory (1799); Sieyes, Napoleon, and Ducos were first three consuls of the provisional consulate; retired from the government with the estate of Crosne, 600,000 francs, and the title of Count of the Empire conferred upon him; was banished to Brussels at the second restoration and did not return to France till the revolution of 1830.

SIGEL (*see'gel*), **FRANZ** (1824-1902). A German-American soldier; born at Sinsheim, Baden; at the outbreak of the revolution of 1848 in Baden, he served with distinction in the army, commanding the troops on the Neckar, and on the retreat into Switzerland; became minister of war; emigrated to the United States in 1852; settled at St. Louis, where he taught in a German military institute until the outbreak of the Civil War, when he took up arms for the North; for signal service he was promoted from colonel to major general of U. S. volunteers; he resigned from the army in 1865; became register of city and county of New York (1871-1874); and U. S. pension agent in that city in 1886-1889.

SIGSBEE, CHARLES DWIGHT (1845-). Rear admiral (retired) United States navy; born at Albany, N. Y.; graduated United States Naval Academy (1863); served in Civil War; commanded Maine (April 10, 1897 until February 15, 1898), when she was blown up in Havana harbor; commanded St. Paul in Cuban and Porto Rican waters (1898-1900); for extraordinary heroism on the wreck of the Maine and during Spanish War was advanced 3 numbers in rank; chief intelligence officer (1900-1903); commandant League Island Navy Yard (1903-1904); rear admiral (August 11, 1903); commanded South Atlantic squadron (1904-1905), 2d division of North Atlantic fleet (1905-1906); retired (January 16, 1907). In deep sea explorations introduced many new methods and inventions, for which he afterwards received from Emperor William I. the decoration of Red Eagle of Prussia, and received gold medal from abroad.

SIMCOE, JOHN GRAVES (1752-1806). Born at Cotterstock, England. Educated at Merton College, Oxford University; entered army (1771); came to New England during Revolutionary War; raising Queen's Rangers with rank of lieutenant colonel. Fought at Brandywine and Monmouth, surrendering with Cornwallis at Yorktown; governor of Upper Canada (1791-1794); governor of Santo Domingo (1796-1797); lieutenant general (1798); was appointed commander in chief to India but died before sailing.

SINGER, FREDERIC (1847-). Rear admiral (retired) United States navy; born at Carlsruhe, Baden, Germany; graduated United States Naval Academy (1868); in charge of diplomatic corps on board coast survey steamer Blake, representing navy department at international naval review, New York (April, 1893); chief intelligence officer and member of board of construction (1895-1896); received "Manila" medal (1898); commandant naval station at New Orleans (1904); rear admiral and retired (1906).

SKO'BELEFF, MICHAEL DMITRIEVITCH (1843-1882). A Russian general; born near Moscow; became distinguished for bravery in the expeditions to Khiva and Khokand, and in the Russo-Turkish War of 1877-1878; occupied Plevna after the defeat of Osman Pasha (1877); captured Geok-Tepe in Transcaspia (1881); became governor of Minsk (1881); was an ardent advocate of Panslavism.

SLOCUM, HENRY WARNER (1827-1894). An American soldier; born at Delphi, Onondaga County, N. Y.; elected to the lower house of the legislature (1859); colonel of the 27th N. Y. volunteers (1861); fought in early battles of Civil War; commanded the right wing at Gettysburg; commander of the army of Georgia under Sherman in "the march to the sea," and through the campaign in the Carolinas; was defeated as democratic candidate for secretary of state of N. Y.; elected to Congress (1868, 1870, and 1884); became president of the Brooklyn board of city works.

SMITH, JOHN (1580-1631). English adventurer, explorer, colonist, and author. After a series of romantic experiences in many lands, he returned to England and was induced to come to Virginia in 1606, where by his influence he made the settlement of Jamestown permanent; subsequent voyages along the Atlantic coast established the English claim. His writings are historical and descriptive of New England and Virginia.

SOCIAL WAR. The struggle between Rome and her Italian allies (90-88 B. C.). It is often called the Marsian or Marsic War. The Italian allies who bore obligations in war were denied political and social equality with the Romans. Though the Italians lost their independence in this struggle they became incorporated into the body politic.

SODOM and GOMORRAH. Two cities with Admah, Zeboim, and Bela or Zoar forming the five cities of the plain. According to the biblical story, the cities were destroyed by fire from heaven, 1898 B. C., as a punishment for the extreme wickedness of their inhabitants. Lot and his wife were the only ones who escaped. Authorities differ as to the location of the cities. Some say the cities were to the north and others to the south of the Dead Sea.

SOISSONS, a fortified town of France, and the scene of a battle in 486, in which Clovis, leader of the Salic Franks, and founder of the French monarchy, defeated Syagrius, the Roman governor.

SOLFERINO (June 24, 1859). During the war of France and Sardinia with Austria, Solferino, in Italy, was the scene of a struggle in which Napoleon III. and Victor Emmanuel defeated Francis Joseph, emperor of Austria. Decisive in securing Italian independence.

SOULT (*soolt*), **NICOLAS JEAN DE DIEU, DUKE OF DALMATIA** (1769-1851). A French marshal; born at Saint-Amans-la-Bastide, Tarn; entered the army (1785); rose to general of brigade (1794); appointed general of division (1799); Napoleon made him marshal of France (1804); accomplished brilliant work at the battle of Austerlitz (1805); took part in the Prussian and Russian campaigns (1806-1807); forced the British to evacuate Spain (1809); occupied Portugal; commander in chief in Spain (1809-1810); subdued Andalusia (1810); by his system of military tactics he neutralized the strategy of Wellington, but was defeated by him at Toulouse (1814); became a royalist and was made minister of war; on Napoleon's return from Elba he rallied to his aid, leaving Louis XVIII.; he was banished from France after the battle of Waterloo (1815); recalled in May, 1819, when he took an active part in politics; in 1838 sent as ambassador to Queen Victoria's coronation; was appointed marshal general of France (1847).

SOUTH AFRICAN UNION (1909). Federation formed under one colonial government by South African British colonies of Cape Colony, Natal, Transvaal, and Orange River Colony. A constitution was formulated the previous year at Bloemfontein with provisions similar to those of the Canadian constitution, except that it leaves no exclusive powers to provincial authorities. Provision is made for the future admission of Rhodesia to the Union. Dutch and English will be the official languages on equal legal terms. The area of the Federation is 473,465 square miles and the population (1909) 4,656,777. South African Union bill passed by British Parliament (1909), following which the first Assembly of the Union convened at Cape Town with 121 members. November 19, Herbert John Gladstone, secretary of state for Home Affairs, was elected governor general of United South Africa.

SPARTACUS. The leader of the slaves in the insurrection against Rome in 73 B. C. A native of Thrace; first a shepherd, then a robber chief; taken prisoner, placed in a gladiatorial camp at Capua. On escaping with 70 followers he defeated the Romans sent to capture them; took refuge in Mount Vesuvius with added numbers; declared freedom to all slaves; defeated the Romans in several battles; after numerous victories he was defeated and slain among heaps of dead Romans after deeds of prodigious valor at Brundusium in 71 B. C.

SPENCER'S ORDINARY (June 26, 1781). As a British foraging party were returning to Williamsburg, Va., with a drove of cattle, they were met by the Americans, under Lieutenant Colonel Butler, at Spencer's Ordinary, between Williamsburg and Jamestown. The conflict was indecisive, both sides claiming the victory.

SPERRY, CHARLES STILLMAN (1847-). Rear admiral (retired) United States navy; born at Brooklyn; graduated United States Naval Academy (1866). President Naval War College and member of general board, U. S. N. (1903); rear admiral (May 26, 1906); delegate to Geneva conference for revision of Geneva Convention for Treatment of Sick and Wounded (June, 1906); delegate to second Hague conference (June, 1907); commander of Atlantic fleet in its trip around the world (1907-1909); retired (1909).

SPHACTERIA (425 B. C.). During the Peloponnesian War, the Athenians took Sphacteria, an island off the southwest coast of Greece, by storm, and brought many Spartans to Athens as prisoners.

SPICHEREN (August 6, 1870). During the Franco-German War a battle was fought at Spicheren (Saarbrucken), in Prussia, in which the Germans defeated the French.

SPION KOP (January 23, 1900). General Buller stormed the fortifications of the Boers on Spion Kop, a spur of the Drakenberg Mountains, in South Africa, and carried them with heavy loss, only to find that they were guarded from other heights and could not be held.

SPOTTSYLVANIA (May 8-18, 1864). When General Lee learned that Grant was moving toward Richmond, he made a forced march and arrived at Spottsylvania, Va., first. Here the two armies met in one of the most hotly contested battles of modern times. Much of the fighting was done hand-to-hand over the heaps of killed and wounded, and the result was indecisive.

SPRINGFIELD (June 23, 1780). The English under General Clinton defeated the Americans led by Greene, at Springfield, N. J., and burned the town.

STADTHOLDER. Name originally given in the Seven United Provinces of the Netherlands to the commander of the forces, then to the governor of a province, and to the general governor of the United provinces called his Stadtholderate. The office, after having been abolished at the death of William II. in 1650, was restored in favor of William III. of England. Again abolished at his death, it was bestowed on William IV. of Nassau, in 1747, who was created "General and Hereditary Stadtholder." In 1795, when France conquered Holland, it was again abolished.

STADTLOHN (August, 1623). During the Thirty Years' War, Tilly overtook Christian of Brunswick at Stadtlohn (or Loen), in Westphalia, and defeated him with the loss of 6,000 killed and 4,000 prisoners.

STANDISH, MILES (1584-1656). Military head of the Plymouth colony; born at Duxbury, Lancashire, England; served in the Netherlands; came over in the Mayflower (1620); sent to England to ask aid of the government against the merchant adventurers, but the mission failed; founded the town of Duxbury, Mass., where he continued to be magistrate throughout his life. Longfellow has made Captain Standish's second courtship the subject of one of his best known poems.

STANTON, OSCAR FITZALAN (1834-). Rear admiral (retired) United States navy; born at Sag Harbor, N. Y.; appointed midshipman United States navy (December 29, 1849); served through Civil War; governor of Philadelphia Naval Home (1891-1893); commanded flagship Newark, South Atlantic station (1893); commanded North Atlantic squadron (1894); rear admiral (July 21, 1894); retired (July 30, 1894).

STAR-CHAMBER. The celebrated English tribunal which met in the council chamber of the old Palace of Westminster. Tradition says that the name was derived from the golden stars on the ceiling of the room in which it met. It dated back to very ancient times, but its powers were abridged by Edward III., and it was wholly abolished by Charles I. The reason the court was so hated in the time of Charles I. is because he used it as a general law court to exact fines for his own exchequer. The judges were the king's own privy council. As a criminal court it could inflict any punishment short of death, and torture was often used to procure acknowledgments of guilt. The history of the Star-Chamber Court is particularly associated with the act of Henry VII.

STARK, JOHN (1728-1822). An American soldier; born in Londonderry, N. H.; served with Rogers' rangers as lieutenant and captain in the French and Indian War; was commissioned colonel, and served

in the battle of Bunker Hill (1775); was present at Trenton and Princeton; for his brilliant work at the battle of Bennington (1777) he received the appointment of brigadier general; distinguished himself in the Saratoga campaign; commanded the Northern department (1778 and 1781).

STAR ROUTE TRIALS. During the administration of President Hayes a conspiracy to defraud the government in the management of the star route postal service was started. The term "star routes" was applied to those routes over which the mail was carried on horseback or in wagons, such routes being marked in the post office books with a "star" or asterisk. Certain mail contractors, Second Assistant Postmaster General Brady and Senator S. W. Dorsey of Arkansas, succeeded in obtaining petitions from localities interested, praying for an increase of the number of trips, which was secured by shortening the schedule time of each trip. Estimates of the cost, largely in excess of the actual expenditure, were made by the contractors, and the profits were alleged to have been divided between them and members of the ring at Washington. There was an indictment against the chief participants, but neither Dorsey nor Brady was convicted.

STEUBEN, FREDERIC WILLIAM AUGUSTUS, BARON (1730-1794). German-American soldier; born at Magdeburg, Prussia; entered the Prussian army (1747); served in the Seven Years' War, and was appointed aide to Frederick the Great (1762); offered his services to the patriot cause in America; appointed major general and inspector general of the army (1778); brought about many needed reforms in the army; commanded in Virginia (1780); took an active part in the siege of Yorktown. After the war Congress granted him 16,000 acres of land in Oneida Co., N. Y., and a pension of $2,400. Here he lived during the rest of his life.

STILLMAN'S RUN (May 14, 1832). In 1832, when the Black Hawk War broke out, a band of 700 Sacs led by Black Hawk, their chief, ascended the Rock river, in Illinois, under the pretense of making settlements. The governor at once called for volunteers, and on May 14th Major Stillman, General Whiteside, and General Atkinson, with a large body of militia, met the savages at Stillman's Run (formerly Old Man's Run), a tributary of Rock river. At the end of a short skirmish the whites retreated.

STILLWATER. See SARATOGA.

STIRLING, YATES (1843-). Rear admiral (retired) United States navy; born at Baltimore; graduated United States Naval Academy (1863); served in Civil War; lighthouse inspector, 5th district (1892-1894); member of lighthouse board (1898-1900); commandant naval station at San Juan, P. R. (1900-1902), navy yard, Puget Sound (1902-1903); commanded Philippine squadron, Asiatic fleet (1902-1903), cruiser squadron, Asiatic fleet (1904); commander-in-chief of Asiatic fleet (1904-1905); rear admiral (June 8, 1902); retired (May 16, 1905).

STOCKTON, CHARLES HERBERT (1845-). Rear admiral (retired) United States navy; born at Philadelphia; graduated United States Naval Academy (1865); summer of 1864 was on board Macedonian in pursuit of Confederate steamers Florida and Tallahassee; president of Naval War College (1898-1900); naval attaché American embassy, London (1903-1905); president of board of inspection and survey (1906); rear admiral (January 7, 1906); president of naval examining and retiring boards (1906-1907); commanding special service squadron visiting Bordeaux, France, for maritime expedition (1907).

STONE RIVER, or **MURFREESBOROUGH** (December 31, 1862-January 3, 1863). When the Confederates under Bragg reached Chattanooga, Tenn., after their campaign in Kentucky, they were immediately ordered to return. Late in December they encamped on Stone river, between Murfreesborough and Nashville, where Rosecrans and the Federals were stationed. On December 31, before Rosecrans could make an attack, Bragg encountered McCook's division and repulsed them. On January 2, Rosecrans continued the struggle. For a time the Federals gave way, but finally rallied and held their position. After the engagement Bragg moved to Murfreesborough, which he abandoned on the 5th. Both sides sustained heavy losses.

STONINGTON. On August 9, 1814, four British gunboats, under command of Commodore Hardy, began the bombardment of Stonington, Conn. The town was defended by only a small militia, but the neighboring towns quickly sent reinforcements. There were only four small cannon, but these were placed in the most advantageous positions and put in command of competent gunners. For three days the British kept up the bombardment, to which the Americans responded with their batteries, and the militia prevented a landing of the troops. On the 12th the British withdrew.

STONY POINT (July 15, 1779). In May, 1779, Clinton sailed up the Hudson river and captured Stony Point, an important position just below West Point. Anthony Wayne resolved to capture the place for the Americans. With all possible precaution Wayne and his men crept toward the enemy, and when the British discovered their presence it was too late and they were forced to surrender the fort. The fortifications were destroyed and the prisoners and supplies removed.

STRALSUND, in Prussia (1628). One of the most memorable operations of the Thirty Years' War was the siege of Stralsund. For ten weeks Wallenstein encamped about the city, but was finally obliged to remove his troops and give up the siege.

STRASSBURG. In October, 1861, Strassburg, the capital of Alsace, was captured by the French. From August 14 to September 27, 1870, during the Franco-German War, it was besieged by Von Werder and finally capitulated after great damage to the city. By the treaty of peace which followed the war, Alsace was retained by the Germans.

STRATHCONA AND MOUNT ROYAL, DONALD ALEXANDER SMITH, LORD (1820-). Born at Archieston, Scotland. Common school education. Entered Hudson Bay Company as employee (1838); promoted to chief factor and later to chief governor and chief commissioner of the company in Canada. Elected to first session of Manitoba Legislature (1870); and Canadian House of Commons; appointed member of first executive council of the Northwest Territory. Resigned from Provincial Legislature (1874); remaining member of Dominion Parliament until 1896, except 1880-1887. Appointed commissioner to London (1896); member of Queen's Privy Council of Canada (1896). Became heavily interested in railroads and was largely responsible for completion of Canadian Pacific Railway, for which service he was knighted (1886); raised to peerage (1897). President of Bank of Montreal; connected with many prominent commercial bodies. Decorated with several orders and degrees. In the Boer War raised and equipped "Strathcona's Horse."

STUART, JAMES EWELL BROWN (1833-1864). An American soldier and cavalry leader of the Confederates in the Civil War. He was mortally wounded at Yellow Tavern, near Richmond, in an engagement with General Sheridan.

SULLA, LUCIUS CORNELIUS, surnamed **FELIX.** A Roman general (138-78 B. C.). In 107 B. C. he went to Africa with the cavalry of Marius in the Jugurthine War; took Jugurtha in 106 B. C.; fought in the campaigns of Marius against the Teutones and the Cimbri; won such honor in the Social War that he eclipsed the performances of Marius, who became jealous of him. When he was given the command of the army in the Mithridatic War, Marius became so jealous that he tried to deprive him of it and civil war resulted. Sulla marched on Rome against Marius. Marius fled to Africa, but returned to Rome in the absence of Sulla and slaughtered the citizens. At the close of the Mithridatic War Sulla returned to Rome in 83 B. C. Marius was dead, yet it took until the year 81 B. C. to crush his party. Sulla was appointed dictator, which office he held until 79 B. C. During those years a reign of terror lasted and the Marian adherents were slaughtered.

SUMNER, GEORGE WATSON (1841-). Rear admiral (retired) United States navy; born at Constantine, Mich.; graduated United States Naval Academy (1861); served during Civil War; equipment officer, New York Navy Yard (1891-1893), captain of yard (1897-1899); commandant naval station, Port Royal (1899-1901), navy yard, Philadelphia (1901-1902); rear admiral (March 3, 1899); commander-in-chief of South Atlantic squadron (1902-1903); retired (December 31, 1903).

SUNDIAL. An instrument for showing the time of day by means of the shadow of a style on a plate usually horizontal, or on a cylindrical surface. Dials were used in Bible times, and in 550 B. C. a dial was invented by Anaximander, when time was divided into hours. L. Papinius Cursor placed the first sundial seen at Rome on the temple of Quirinus, in 293 B. C. Dials were in use in churches about 613. The horizontal dial placed flat or parallel to the horizon is the most common. A dial consists of two parts, the

stile or gnomon, made parallel to the earth's axis, and pointing towards the pole; and the dial plane, on which are marked the directions of the shadows for the day, their halves, quarters, etc. The cylindrical dial is a dial drawn on the curved surface of a cylinder.

SUSA. One of the most important cities of the ancient East. The capital of the Province of Susiana, or Elam Hystaspes, formed the city. It was under Babylonian rule, but at the time of Cyrus it came under Persian dominion. Defended by Hormuzan it held out bravely during the Arab conquest. The great palace built by Darius Hystaspes (521-485 B. C.) was destroyed by fire during the reign of Artaxerxes Longimanus (465-424 B. C.) and restored by Artaxerxes Mnemon (405-362 B. C.). Remains of the palace have been unearthed during excavations. Alexander the Great conquered the city in 331 B. C.

SWINBURNE, WILLIAM THOMAS (1847-). Rear admiral United States navy, in command of Pacific squadron since August 10, 1906; born Newport, R. I.; graduate of United States Naval Academy. Commander of battalion landed in Honolulu (January 16-April 1, 1893); head of department of seamanship, naval academy (1893-1897); during Cuban war served in North Atlantic fleet; joined fleet under Admiral Dewey at Manila (February, 1899); senior officer in command of vessels assisting General Lawton in his campaign (Manila Bay) (June 10-13, 1899); Portsmouth Navy Yard (October, 1899-1902); member general board, Washington (1904-1906); rear admiral (July 22, 1906).

SWISS CONFEDERATION. The three Forest Cantons, Uri, Schwyz, and Unterwalden, had received special charters of liberties prior to 1250. They united with Zurich against the House of Hapsburg and won the battle of Morgarten in 1315. The agreement between the cantons was the life of independent Switzerland for five centuries. About 1350, Zurich, Glarus, Zug, and Bern were added. The power of Austria in Switzerland was broken by the victories of the Swiss at Sempach (1386) and at Näfels (1388). In 1415 Aargau was taken from Austria. In 1476 they overthrew the armies of Charles the Bold of Burgundy at Granson and Morat, and in 1477 helped Reni of Lorraine to overthrow him at Nancy. In 1499 Emperor Maximilian I., who sought to subdue the Swiss, was overwhelmed in six desperate engagements. Other cities joined them and they met with successes until terribly defeated at Marignano in 1515 by Francis I. of France while they were fighting to help Milan. In 1648 the country was declared independent of Germany.

SYBARIS. Ancient Greek colony in southern Italy, in northeastern Bruttium, about three miles from the Tarentine Gulf. It was founded by Achaeans and Troezenians about 720 B. C. The people were proverbially wealthy, and of a luxurious nation therefore the term Sybarite. During the sixth century B. C. it ranked with Miletus as one of the most powerful Greek cities. Telys, the tyrant, ruled the city during the party strife, which disturbed so many of the Greek cities. In 510 B. C. the neighboring city, Croton, harbored some of the banished nobles of Sybaris. On their refusal to surrender them, war was declared which was a victory for the Crotonians. They destroyed the city, and turned the river Crathis over the site.

SYRACUSE. One of the great battles of the world. Syracuse was almost impregnable except by united assault from land and sea by superior force. The Athenian navy held the harbor (414 B. C.); an Athenian army defeated her troops and the city was hopelessly blockaded. Athens was staking everything on one bold throw for dominion of the western world. Had the Athenians at once attacked, Syracuse would have been conquered; Greece and not Rome might have conquered Carthage; Greek instead of Latin become the language of Spain, France, and Italy; and the laws of Athens instead of Rome have been the foundation of the present law of the civilized world. The nations saw the need of curbing Athens; reinforcements of Peloponnesians, Spartans, Corinthians, Thebans, and others came under the banner of Gylippus, the Syracusan general; the Athenians were attacked by land when the arrival of the great fleet of Desmosthenes astonished them; at first the Syracusan forces were driven back, but rallied and by perfect formation defeated the Athenians, later destroying the Athenians' fleet in a series of sea fights.

TALAVERA, in Spain (July 27-28, 1809). The scene of a battle won by the duke of Wellington, commander of the British and Spanish forces, over the French troops.

TALLASAHATCHE (November 3, 1813). After the disaster at Fort Mims, volunteers rapidly enlisted to help the whites. On November 3 an expedition of 1,000, led by General Coffee, attacked the Indians at Tallasahatche, in Calhoun Co., Ala., and after a desperate struggle the Indians were completely destroyed, the Americans losing 5 killed and 41 wounded.

TAMERLANE, TIMUR, TIMUR-BEG, TIMUR-LENG, or TIMUR THE LAME (1336-1405). A Mongol conqueror; born in Turkestan, of which he became the ruler in 1369, taking the title of emir. By 1387 he had conquered the whole country east of the Tigris from Tiflis to Shiraz. In 1392 he crossed the Tigris and by 1395 had advanced as far as Moscow, leaving death and desolation in his train. In 1398 he entered India and was everywhere victorious. The number of captives so increased that when he captured Delhi he ordered the cold-blooded massacre of 100,000 of the men. He then advanced into Asia Minor, and in 1402 he met and defeated the Turks under Bajazet I. at Angora, where Bajazet was captured. He conquered the whole of Asia Minor and the Byzantine emperor did homage to him. When, in 1405, he was preparing for his long-cherished invasion of China, he was taken ill and died at the Sihun, in Asiatic Russia.

TAOS (February 3, 1847). After Colonel Price had dispersed the insurgents at Canada, New Mexico, he marched toward Taos, where he found the Mexicans occupying a strong position. They kept the Americans at bay until February 5th, when they were obliged to capitulate. The casualties in the Mexican army were 152 killed and many wounded. The Americans lost 7 killed and 45 wounded.

TAPAE (102). The Romans, under Trajan, penetrated Dacia to the heart of modern Transylvania, and at Tapae, the site of which is not known, routed the Dacians with great slaughter. After several such campaigns the Dacian country became a Roman province.

TAPPAN (September 27, 1778). A small detachment of General Wayne's army at Old Tappan (or Harrington), near the Hackensack river, was taken by surprise at night by a British foraging party led by General Grey; 100 men were massacred before any resistance could be made.

TARPEIAN ROCK. The name applied to a portion of the southern part of the Capitoline Hill in Rome, from which, in early times, criminals were hurled to death. Tradition says that Tarpeia, the vestal virgin, daughter of Spurius Tarpeius, opened the gates to the Sabines, on condition that they give her the ornaments they wore on their arms. Accordingly, once inside, they threw their shields on her, saying, "These are the ornaments we bear on our arms." She was crushed to death, and was buried on the Tarpeian Hill.

TAUSSIG, EDWARD DAVID (1847-). Rear admiral United States navy; born at St. Louis; graduated United States Naval Academy (1867). For services during earthquake at Arica (August 13, 1868), was commended to the department by Commander Gillis; served on European and Pacific stations and in coast survey; commanded the Bennington (August, 1898-August, 1899); took possession of Wake Island for the United States and took charge of Guam (February 1, 1899); served in Philippines and North China (1900); commanding 5th naval district, Norfolk, Va. (1908).

TEWKESBURY, in Gloucestershire, England. May 4, 1471, a battle was fought at Tewkesbury, in which Edward IV. defeated and took prisoner Queen Margaret.

THAMES (October 5, 1813). After the American victory on Lake Erie, General Harrison prepared to invade Canada. The army, numbering about 5,000 under Harrison and Shelby, were transported to Amherstburg (Malden), on the Canadian shore, where they learned that Proctor and his army of British and Indians had retreated to the interior. They immediately started in pursuit and just north of the Thames river came upon the British. The battle was short and resulted in the utter defeat and rout of the British and Indians, and the death of Tecumseh.

THAPSUS (February 4, 46 B. C.). At Thapsus, in northern Africa, Julius Caesar totally defeated Juba, king of Numidia, and the army which supported Pompey's cause.

THAUSS (Taus) (August 14, 1431). During the Hussite Wars the Hussites met the Crusaders at Thauss, a city of Bohemia, and won a marvelous victory.

THEBES. Ancient Egyptian city on both sides of the Nile, called also "the city of Ammon." The city was the capital of Egypt and the chief residence of the Pharaohs for many centuries. Seti I. and Rameses II. and III. built the temples of El Kurna, Deir el-Bahri,

the Ramesseum, and that of Medinet Habu. The city began to decline in importance from the time it ceased to be the capital of Egypt, under the Twenty-first dynasty. It was overshadowed by the rise in 1100 B. C. of the cities of Tanis, Bubastis, and Sais. Thebes was again the seat of government under the Twenty-fifth or Ethiopian dynasty, but Sais became the capital during the following dynasty, and a new period of decline began for Thebes. In 665 B. C. the Assyrian king, Asshur-bani-pal, destroyed many of its temples and took captive its inhabitants. In 525 B. C. Cambyses, king of Persia, ruined the city. Ptolemy Lathyrus gave it its death-blow in 86 B. C., and the city was further destroyed by an earthquake in 27 B. C. The tomb and ruins of temples of ancient Thebes are of interest historically.

THEBES. The chief city of Boeotia, in ancient Greece, situated on the slopes of Mount Teumessus, which tradition says was founded by Cadmus. The story of the "Seven against Thebes" is also traditional. Thebes was the head of the Boeotian league, *c.* 1100 B. C. Thebes had an unsuccessful war with Athens in 506 B. C. for having made an alliance with Plataea. At the battle of Plataea during the Persian invasion, Thebes was allied with Xerxes, but was severely punished by Athens after the Greek victory. In the Peloponnesian War Thebes took sides with Sparta, but turned against her old ally to fight with Athens at the battle of Chaeronea in 338 B. C., where they suffered a defeat by Philip of Macedonia. In 335 B. C. Alexander the Great completely destroyed the city, selling its inhabitants into slavery. It was restored by Cassander in 316 B. C. but steadily declined until under the Roman Empire it revived, as it was a safer place of residence than the coast cities.

THERMOPYLAE, in Greece. Famous for the battle fought there between the Greeks and the Persians, August 7, 480 B. C. Three hundred Spartans made a valiant attempt to check the progress of the whole Persian army, but were hemmed in and overcome by the enemy. In 191 B. C. Antiochus III. of Syria was utterly defeated by the Romans there.

THORON (1197-1198). An army of German crusaders besieged Thoron for two months, but fled when they heard an army was approaching.

TICINUS (218 B. C.). A river in northern Italy. Here Hannibal, in his first battle with the Romans, under Scipio, after crossing the Alps, defeated them.

TICONDEROGA. (1) July 8, 1758. During the French and Indian War in America, the British, led by Howe and Abercrombie, made repeated attempts to capture Fort Ticonderoga on Lake Champlain. But at every attack they were repulsed, and finally retreated, having lost heavily. One year later, however, General Amherst succeeded in capturing the fort. (2) May 10, 1775. With a small force known as the "Green Mountain Boys," Ethan Allen surprised and captured Fort Ticonderoga from the English. (3) 1777. Later during the Revolution, Ticonderoga was retaken by the English under Burgoyne.

TIGRANOCERTA, now Sert, or Iserd (69 B. C.). The Romans, during the Third Mithridatic War, attacked Tigranocerta, the capital of Armenia, and after a hard struggle succeeded in capturing the city.

TILLY, JOHANN TSERKLAES, COUNT VON (1559-1632). Imperialist general; born at the castle of Tilly in Brabant; commander of the forces of the Catholic League of Germany (1618). Fought in the Thirty Years' War and was defeated by the Swedish king, Gustavus Adolphus, at Lützen, and at Lech (1632), where Tilly received his death-wound.

TIPPECANOE (November 7, 1811). While the Americans were trying to buy land from the Indians, Tecumseh and his brother, thinking they were being cheated, persuaded the tribes to wage war against the whites. Aware of this, William H. Harrison conducted a campaign against them, and on November 6th the Americans encamped near Tippecanoe, in Indiana. During the night the Indians attacked the American camp, but met with vigorous resistance, and after an obstinate struggle the Indians retreated. On the following day Harrison and his men found the village deserted, and after destroying it retired to Vincennes.

TOD'LEBEN FRANZ EDUARD IVANOVITCH (1818-1884). Russian general and military engineer; was born of German descent at Mitau in Kourland; became distinguished by his defense of Sebastopol during the Crimean campaign. In 1877, during the Russo-Turkish War, he besieged and captured Plevna.

TOLEDO. In 712 Toledo, in central Spain, was taken by the Saracens. Alfonso I. of Castile succeeded in capturing it May 25, 1085.

TOLTECS. A people who inhabited Mexico and Central America prior to the Aztecs. The latter owe their knowledge of arts and their culture to the Toltecs. Their dominion extended over all the central plateau, with the city of Tollan, or Tula, as the capital. About the tenth century the country was invaded by barbarous northern tribes, and the Toltecs were driven south probably as far as Guatemala.

TORONTO. Canadian city. Indian derivation from word signifying "place of meeting." Founded by Governor Simcoe (1794); burned by American forces (1813); suffered severely as headquarters of the Rebellion (1837); also from fire (1849). It is the seat of the Ontario legislature. Population close upon 300,000 (1910).

TOULOUSE (April 10, 1814). The last of Wellington's peninsular battles during the Napoleonic War was fought at Toulouse, in France, where he defeated Soult, the French leader.

TOURNAMENT. A sport in which skill at arms was shown. Its invention is ascribed to Henry, the Fowler, who died in 936, also to Geoffrey de Preuilly. The tournament was most popular during the twelfth, thirteenth, and fourteenth centuries. Tournaments were first heard of in England in Stephen's time, but it was not until Richard Coeur-de-Lion made them popular that they came to be greatly in vogue. They were abandoned altogether when Henry II. of France died soon after losing his eye in the combat. The usual arms were blunted lances or swords and the combat took place in an open space called the lists, which was surrounded by galleries for the spectators. The queen of the tournament bestowed the prize on the successful knight. The most celebrated English tournaments were held near Saint James, Smithfield, London. Jousts were single combats between two knights.

TOURS. Decisive battle of the world (732), in France, between the Franks and the Saracens. The Saracens had overrun Persia, Syria, Egypt, Africa, and Spain unchecked, and Moslem rule and religion were enforced. Charles Martel, Duke of the Austrasian Franks, had no standing army but gathered war-seasoned recruits from all sections of the great Frank territory; organized them and near the River Aude defeated the Moslem horde disorganized by continuous plunder of captured cities. The Crescent was driven back to eastern Europe and Christianity secured to posterity.

TOUR'VILLE, ANNE HILARION DE COTENTIN, COMTE DE (1642-1701). A distinguished French admiral; born at Tourville, near Coutances; made several attempts to destroy the Algerian pirates (1682-1688); was beaten by a Dutch-English fleet off La Hogue (1692). Tourville was made marshal of France, and later attacked an English merchant fleet off Cape St. Vincent (1693), inflicting much damage.

TOWTON, in Yorkshire. On March 29, 1461, Edward IV. defeated Henry VI. at Towton, in what proved to be one of the most terrible struggles in English history. The fighting continued for six hours in the midst of a severe snowstorm, and the loss on each side was more than 20,000.

TRAFALGAR. October 21, 1805, the English, under Nelson, won a naval battle off Cape Trafalgar, in Spain. The fleets of France and Spain were utterly defeated.

TREBIA. A southern tributary of the Po River in Italy and the scene of the final battle of Hannibal's first campaign. Here, in 218 B.C., the Romans were defeated by the Carthaginians. Suvaroff, the Russian general, defeated Macdonald and his French army (1799).

TRENT AFFAIR. (November 8, 1861). Capt. Charles Wilkes of the United States San Jacinto stopped the British mail steamer Trent on the high seas, taking off John Slidell and James M. Mason, Confederate commissioners to England and France. The North applauded, but Lincoln and Seward realized the gravity of the act, yielding both men with an apology.

TRENTON. Capital of New Jersey. First settled (1676) as "The Falls," until named in honor of William Trent (1719); incorporated as borough (1746); selected as state capital (1790); chartered as city (1792). Figured prominently in the Revolutionary War; when it was held by British and besieged by the Patriots under General Washington, who crossed the frozen Delaware and surprised the garrison. Colonel Rahl and his Hessians surrendered.

TRIPLE ALLIANCE. (1) That of England, Holland, and Sweden (1668) to check the conquests of Louis XIV. (2) That of England, France, and Holland (1717) against Spain. When Austria came in, it became the Quadruple Alliance. (3) The Dreibund between Germany, Austria-Hungary, and Italy (1883).

TRIPOLI BOMBARDED (August 3, 7, September 3, 4, 1804). Tripoli, an important seaport on the northern coast of Africa, was besieged by the Americans during their war with the Barbary States. On August 3d, while the American fleet was bombarding the city, they were opposed by a Tripolitan squadron, but six American boats soon destroyed the whole flotilla. Lieut. James Decatur was killed and 13 men were wounded during the engagement. On August 7th some of the Tripolitan batteries were silenced by the American gunboats, and on September 3d those on the east were also silenced. September 4th the Americans had arranged to float a vessel loaded with powder up to the city walls and light the fuses, but the enemy opened fire and the boat was blown up with the entire crew on board and all were lost.

TRUMBULL, JONATHAN (1710-1785). An American patriot; born at Lebanon, Conn.; graduated at Harvard (1727); studied law; governor of Connecticut (1769-1783); helped to further the patriot cause in the Revolutionary War. Washington had much faith in his advice, and tradition says that his phrase, "Let us hear what Brother Jonathan says," gave rise to the expression which was the personification of the United States.

TRUMBULL—WATT (June 2, 1780). While sailing off the east coast of North America, the British boat Watt, commanded by Captain Coulthard, was fired upon by the American Trumbull. For three hours the boats lay side by side and maintained a heavy fire which seriously damaged both boats. Finally the Trumbull withdrew and allowed the Watt to proceed. Eight men were killed and 31 wounded on the Trumbull. The loss on the Watt was 92 men killed or wounded.

TRUXTUN, THOMAS (1755-1822). An American naval officer; born at Jamaica, Long Island; went to sea when twelve years of age, and was impressed into the English service; served in the Revolutionary War as captain of the Congress; after the war he received a captain's commission and was put in command of the Constellation, and captured the French frigate L'Insurgente (February 9, 1799); the following year fought a battle with the frigate La Vengeance, defeating her. He was subsequently put in command of the West India squadron with the rank of commodore. In 1802 he was ordered to command a fleet in the war with Tripoli, but through a misunderstanding his letter to the navy department requesting the appointment of a captain for his flagship was construed as a resignation, which was accepted and he left the service much against his wishes. He was sheriff of Philadelphia County in 1819-1821.

TUILERIES. The Tuileries, the old royal palace in Paris, has been the scene of several conflicts. It was invaded by a mob on June 20, 1792, but little harm was done. On August 10 it was stormed again, and the royal family forced to flee. During the revolutions of July, 1830, and February, 1848, it was ransacked, and during the War of the Commune in 1871 it was burned.

TUNES (Tunis). In 255 B. C., the Romans, under Regulus, met the Carthaginian army at Tunes, the site of the present city of Tunis in northern Africa, where they were defeated and many were captured.

TUNIS. In 1270, during the Seventh Crusade, Louis IX. encamped in Tunis, in the northern part of Africa. In 1535, while the Reformation was in progress, Charles V. conquered Tunis and liberated all the Christian slaves. The French, in 1881, invaded Tunis and succeeded in establishing a protectorate over it.

TURENNE (*too-ren'*), **HENRI DE LA TOUR D'AUVERGNE, VICOMTE DE** (1611-1675). French general; grandson of William the Silent; born at Sedan, France; he distinguished himself during the alliance of France with the Protestants in the Thirty Years' War; received supreme command (1641); gained Roussillon from the Spaniards (1642), and for this was rewarded by being made marshal of France (1644); he was defeated by the Imperialists at Marienthal (1645); made successful campaigns in Bavaria and Flanders (1646-1647); Turenne defeated Condé at the Dunes (1658); created marshal general of France (1660); turned Catholic (1668); in 1674 he crushed Brandenburg and Alsace and pillaged the Palatinate. He was killed reconnoitering at Sasbach.

TUBIN (September 7, 1706). A city of northern Italy, where, during the War of the Spanish Succession, Prince Eugene, with the aid of the Prussians, defeated the French. This victory enabled the allies to expel the French from northern Italy.

TYLER, WAT, REBELLION OF. A peasants' revolt provoked by the poll tax levied on all persons above fifteen; under Wat and Jack Straw the people throughout Kent and Essex rose and marched on London, where they burned John of Gaunt's palace, and Temple Bar, opened the prisons, broke into the Tower, and murdered the archbishop of Canterbury. They met King Richard II. at Smithfield (1381) demanding that there should be no outlawry, no serfdom, and but one bishop in England. The leader, Tyler, was arrested on a pretext, and when he resisted he was killed by Walworthe, mayor of London. When the rebels heard what had happened they dispersed. The effect of the uprising was to repeal the taxes for a time and to annul the Statute of Laborers.

TYRE. A famous city of ancient Phoenicia, one of the chief places of the ancient world, stood partly on an island, and partly on the mainland. Agenor is said to have built the first city. Another city was built 257 B. C. In 713 B. C., after besieging the city for five years, the Assyrians, under Shalmaneser, withdrew. It is recorded that Solomon paid tribute to Hiram, king of Tyre, in return for material and skilled workmen for the building of the great temple (I. Kings v. 1-12). Tyre was forced to surrender to Asshur-bani-pal (668-626 B. C.), and became an Assyrian vassal. In 607 B. C., at the fall of Assyria, she regained her independence. She yielded to Nebuchadnezzar II. 572 B. C., after a siege of thirteen years. As Nebuchadnezzar had destroyed the old Tyre, the people moved to the island, where a new city was built up. In 332 B. C. it was captured by Alexander after a seven months' siege, and seventeen years later by Antigonus after a siege of a year and two months. Tyre still continued to be an important commercial town during the Middle Ages. It was captured by Crusaders under Baldwin II. in 1124, held by the Christians until 1291, then taken by Malik-al-Ashraf, ruler of Egypt and Syria. In 1516, with the conquest of Syria by the Turks, the prosperity of Tyre ended.

VADIMONIAN LAKE, Etruria (310 B.C., 283 B.C.). The first battle at Vadimonian Lake occurred during the Second Samnite War. The Romans were victorious, and as a result the coalition against them was broken up. Later, a new Italian coalition was formed, and in the war which followed, the Romans were again victorious at Vadimonian Lake.

VALETTE', JEAN PARISOT DE LA (1494-1568). Grand master of the Knights of St. John in 1557; born at Toulouse. In his warfare with the Turks he succeeded in checking their advance; his greatest achievement was his heroic defense of Malta during a four months' blockade from May 18th till September 8th (1565) by the Turkish fleet.

VALMY. Decisive battle of the world (1792). The French Revolution had decimated the army; driving out of France 12,000 high born young men trained to arms, who enrolled themselves under Condé and other princes to overthrow French Republican rule. Insidiously threatened on all sides, France declared war on the great European powers, represented by 60,000 Prussians, 45,000 Austrians, 15,000 French, many Hessians, and others, commanded by the duke of Brunswick. The French force was about 50,000 commanded by Dumouriez, and in previous actions had been repulsed or beaten. The tide turned; the allies were hopelessly defeated; the French Republic was established and a new era commenced in the history of Europe.

VANCOUVER. Largest city of British Columbia. A sawmill marked the site in 1885 when the Canadian Pacific Railroad decided to make it the western terminal on account of the fine harbor. First city destroyed by fire (1886); population 26,196 (1901); over 40,000 (1910). Victoria is the capital of the province.

VARUS, PUBLIUS QUINTILIUS. A Roman general; consul in 13 B. C. About 7 A. D. he was appointed to the command of the Roman army in Germany. In 9 A. D. his army sustained a crushing defeat by the Germans under Arminius in the forest of Teutoburg while encumbered by baggage. Varus in despair killed himself. The defeat stopped the tide of Roman conquest of Germany.

VEII. An ancient city of Etruria about twelve miles northwest of Rome. One of the twelve cities of the Etruscan Confederacy, and a formidable rival in early times of Rome. The two cities were frequently at war with each other during three and a half centuries, with Rome always victorious. To prevent depredations made by the Vientes, the Fabii, a Roman family, with their followers set out to garrison a fortress and act as guard, but they were surprised by the Vientes and

killed at the river Cremera. More hostilities followed until Rome laid siege to the town and after ten years Camillus (c. 396 B. C.) took it. Both Caesar and Augustus planted colonies there, but they amounted to but little. In 390, when the Gauls seized Rome, the Romans fled to Veii.

VERA CRUZ (March 9-29, 1847). With 12,000 American soldiers, General Scott landed before Vera Cruz, in Mexico, and demanded its surrender. The Mexicans refused and Scott at once began an active bombardment which finally proved effectual and forced the surrender of the city.

VERDUN, TREATY OF. On the death of Louis the Pious, his three sons, Louis the German, Charles the Bald, and the emperor Lothair, went to war over the division of the kingdom. By the Peace of Verdun (August 10, 843) Lothair kept the honorary title of emperor, with Italy and the land between the Rhine and the Rhone, with Aix-la-Chapelle as his capital; Louis received the country between the Aar and the Rhine; and Charles received the country west of the Rhine.

VERSAILLES. A town about 12 miles southwest of Paris, prominent in French history for more than a century. Here Louis XIV. built a royal residence, unrivaled in the whole world, and moved his court about 1682. Louis XV. followed, then Louis XVI. with Marie Antoinette came, but were driven back to Paris. The treaty of 1783 was signed here; the opening act of the French Revolution occurred May 4, 1789; during the siege of Paris (1870-1871) King William I. made it his headquarters, where he was proclaimed emperor of Germany; later it was the French capital (1871-1879).

VICKSBURG. During the Civil War, Vicksburg, on the Mississippi river, between Memphis and New Orleans, was a valuable stronghold of the Confederates, and General Grant spent much of his time during 1862 and 1863 in planning its capture. Repeated attempts were made without success; the fortress seemed impregnable. Finally, by calling for reinforcements from the North, and cutting off every avenue of supply and help to the city, Grant was prepared to begin the siege in earnest. For six weeks the investment was kept up with uninterrupted firing from the Federal ships. There was great loss in Vicksburg from exploding shells, disease, and lack of food. When the supply of provisions had been exhausted, the people could hold out no longer and on July 3, 1863, Vicksburg capitulated. On July 4th the Union army took formal possession of the city; 37,000 prisoners, 172 cannon, and 60,000 muskets were surrendered.

VIGO BAY (October 23, 1702). During the War of the Spanish Succession, Spanish ships laden with treasure from America, and accompanied by French frigates, entered Vigo Bay, in northwest Spain. The British followed them and succeeded in capturing or destroying all the ships. Vigo was attacked by Drake in 1585 and 1589, and by Lord Cobham in 1719.

VILLERE'S PLANTATION (December 23, 1814). After their victory on Lake Borgne, the British at once started for New Orleans. As soon as the Americans learned of their movements, a detachment of 1,800 troops was sent to check their march. The British were within nine miles of New Orleans when the schooner Carolina opened fire, killing many of the invaders. The conflict lasted until evening, when both armies left the field, the Americans with a loss of 213 men, the British with a loss of 400 men.

VINCENNES (February 24, 1779). On December 17, 1778, a British force from Detroit captured Vincennes, Knox Co., Ind. When General Clark, at Kaskaskia, heard that Vincennes was defended by only 100 British, he set out to seize it. After a march of 240 miles through flooded territory, Clark reached Vincennes on February 21st, and on the 24th the British surrendered 79 men.

VIRGINIUS, LUCIUS. A Roman centurion who murdered his daughter to prevent her from falling into the power of the decemvir, Appius Claudius (449 B.C.). This legend has been the theme of many dramas.

VITORIA or **VITTORIA** (June 21, 1813). A town in Spain, and the scene of a battle between the British and French. By a decisive victory, the duke of Wellington drove the French, led by Joseph Bonaparte and Jourdan, out of Spain.

WAGRAM, in Austria. July 6, 1809. The French, led by Napoleon, defeated the Austrians, under Archduke Charles, at Wagram. This battle led to a treaty of peace, in which Austria ceded all her seacoast to France; the kingdoms of Saxony and Bavaria were also enlarged at the expense of Austria.

WAHUB'S PLANTATION (September 21, 1780). After the British victories at Camden and Fishing Creek, Cornwallis, Tarleton, and Ferguson marched north toward Charlotte, N. C., leaving a small detachment at Wahub's Plantation, near Providence, S. C. With a part of the American troops, one of Colonel Davie's officers attacked the British, killing 20 of them and capturing some of their horses and equipment.

WAINWRIGHT, RICHARD (1849-). Rear admiral United States navy; born at Washington; graduated United States Naval Academy (1868), and from Columbian (now George Washington) University (1884) (LL.D.); chief of intelligence office (1896-1897); executive officer of the Maine (November 17, 1897, to February 15, 1898), when she was blown up in Havana harbor; during war with Spain commanded Gloucester, and participated in destruction of Admiral Cervera's squadron off Santiago, Cuba (July 3, 1898); for "eminent and conspicuous conduct" in this battle was advanced 10 numbers in rank; presented with a sword by citizens of Washington and with a silver loving cup by citizens of Gloucester, Mass.; commanding 2d division, 1st squadron, Atlantic fleet (1908).

WAKEFIELD (December 31, 1460). The only great victory of the Lancastrians in the War of the Roses was gained at Wakefield, in Yorkshire, England, when Queen Margaret defeated the duke of York.

WALKER, WILLIAM (1824-1860). An American filibuster; born in Nashville, Tenn.; an attempt to found a new republic in northern Mexico failed (1853); led a band of 62 adventurers to Nicaragua and was elected president; he twice surrendered to U. S. authorities; after his release he led an expedition to Honduras and took Trujillo; obliged to surrender to the commander of the British warship Icarus; tried by a court-martial and shot September 12, 1860.

WALLACE, SIR WILLIAM (1272?-1305). Scotch patriot; his chief aim was to free Scotland from the English yoke; met the English at Stirling Bridge (1297), and gained a victory; Wallace was appointed governor of Scotland in the name of King John (Baliol); he was defeated by the English under Edward I. at the battle of Falkirk (1298); through the treachery of a Scotchman, Menteith, Wallace was betrayed, brought to London, and executed.

WALLENSTEIN, ALBRECHT WENZEL EUSEBIUS VON, DUKE OF FRIEDLAND (1583-1634). Imperialist general; born at Hermanic, in Bohemia; his aim was to restore the imperial power and to establish a vast centralized Hapsburg empire, which should control the Baltic; offered his services to the emperor Ferdinand and was made general-in-chief of all the imperial armies (1625); with Tilly he won Jutland and Mecklenburg from the Protestant princes; his thirst for power won him the hatred of a powerful party, the Catholic League, at court, and through their efforts he was finally dismissed by the emperor (1630); at the death of Tilly he was recalled to supreme command (1631); he repulsed Gustavus Adolphus at Nuremberg, but was defeated by him at Lützen (1632), where the Swedish king fell; Wallenstein renewed his attacks against Saxony and Brandenburg; he was accused of conspiracy with the enemy and was removed from his command (1633). He was assassinated by some Scotch and Irish officers. He was one of the great men of the Thirty Years' War; liberal in religious matters, but entirely unscrupulous.

WARREN, JOSEPH (1741-1775). American patriot; born at Roxbury, Mass.; became a physician; was an active member of first, second, and third provincial congresses of America. Took part in the battle of Bunker Hill and was killed there.

WARSAW. The capital of Poland and the scene of two battles. The first, October 10-12, 1794, was a siege by the Russians, in which the Poles were successful in holding the city. In 1831 the Russians, after encountering the Poles in various places, attacked Warsaw. For two days the Poles kept the stronghold, but on September 8 were obliged to surrender. After the fall of Warsaw, the power of Poland was crippled; its constitution was taken away and the country made a province of Russia.

WARWICK, RICHARD NEVILLE, EARL OF, THE KING MAKER (1428-1471). Famous English warrior; joined the forces of the duke of York; the victory at St. Albans was largely due to his efforts (1455); helped to place Edward, Earl of March, on the throne as Edward IV.; deposed Edward IV. and proclaimed Henry VI. king; Edward IV. raised an army and defeated Warwick at the battle of Barnet, where the latter was killed.

WASHINGTON (August 24, 1814). Immediately after the Americans had been defeated at Bladensburg, the British entered Washington and began to burn the public buildings. Property to the amount of $2,000,000 was burned to the ground, although such articles of value as Washington's portrait and the Declaration of Independence were saved through the efforts of Mrs. Madison. After the British had satisfied their revengeful spirit they abandoned the city.

WASP. (1) October 18, 1812. The American sloop-of-war Wasp, commanded by Capt. Jacob Jones, encountered the British brig Frolic and six merchantmen off the southern coast of the United States. In less than an hour the Frolic surrendered, but the Wasp soon became the prey of the British frigate Poictiers and her crew were carried to Bermuda as prisoners. (2) On June 28, 1814, while the second U. S. sloop-of-war Wasp was cruising in the English Channel, she fell in with the British sloop Reindeer, and after a brief engagement the latter struck her colors. (3) On September 1, 1814, the Wasp captured the British Avon after a fight of two hours. (4) On October 9, 1814, the Adonis, a Swedish brig, was overpowered by the Wasp, and two Americans from the Essex taken off. Nothing was ever heard from the Wasp again after this encounter.

WATERLOO. Decisive battle of the world (1815), crushing Napoleon I. of France. For more than twenty years war had raged through Europe. Napoleon Bonaparte had carried the French eagles devastatingly to Egypt and Russia, rising to Emperor of the French. Austria, Spain, England, Prussia, Russia, and Sweden declared him an outlaw and formed a treaty to war until he was driven from the throne, incapable of disturbing Europe's peace. The allied army of 67,655 men under the duke of Wellington met Napoleon at Waterloo with 71,947 men and utterly defeated him. It was the most decisive battle of Europe.

WATSON, JOHN CRITTENDEN (1842-). Rear admiral (retired) United States navy; born at Frankfort, Ky.; graduated United States Naval Academy (1860); served during Civil War; lighthouse inspector, 11th district (1880-1883); president of board of inspection, San Francisco (1888-1890); captain of yard, Mare Island Navy Yard (1890-1892); governor of naval home, Philadelphia (1895-1898); during war with Spain commanded a division of North Atlantic fleet (May-September, 1898); commander-in-chief of Eastern squadron (July, 1898), to threaten coast of Spain and reinforce Dewey's fleet; commandant Mare Island Navy Yard (1898-1899); rear admiral (March 3, 1899); commander-in-chief of Asiatic fleet (June, 1899-April, 1900); president of naval examining board (1900-1902); naval representative to coronation of King Edward VII. of England (1902); president of naval examining and retiring boards (1902-1904); special duty in Europe to study conditions for moral and physical betterment of enlisted personnel; retired (August 24, 1904).

WAUHATCHIE (October 27, 1863). After the battle of Chickamauga, the Confederates took positions on Lookout Mountain and Missionary Ridge, while the Federals retreated to Chattanooga. October 28 the Confederates on Lookout Mountain sighted Hooker marching down the Wauhatchie valley, and early the following morning made an attack. At the end of a three hours' struggle the Federals were victorious.

WAWRE (1831). At the insurrection of Poland, Russian troops flooded the country; at Wawre the revolutionists were victorious in two battles.

WAXHAW (May 29, 1780). After the fall of Charleston, Colonel Buford and 380 Americans retreated toward the North Carolina line. At the Waxhaw river, in South Carolina, they were met by Colonel Tarleton with 300 men. The British made a desperate charge and completely overpowered the Americans, Colonel Buford and only a few of his men escaping.

WAYNE, ANTHONY (1745-1796). A famous American general; born in Chester County, Pa.; raised a volunteer regiment (1776); won some brilliant successes in the War of the Revolution; he is best known as the hero of the storming and capture of Stony Point (1779); he was elected (1784) to the Pennsylvania assembly; entered Congress from Georgia (1791-1792); was appointed general-in-chief of the national army (1792); quelled the Indian uprisings in the West (1794-1795). He was known as "Mad Anthony."

WELDON RAILROAD (June 21, August 18, 1864). While Grant was conducting the attacks on Richmond and Petersburg, Va., other Federal troops were trying to destroy the Petersburg & Weldon Railroad. On June 21 two divisions under Birney and Wright made an attempt south of Petersburg, but were repulsed with a loss of 4,000 men. In order to protect Richmond, Lee was obliged to take some of his forces from Petersburg in August, which gave the Federals an opportunity to make another attempt to destroy the supply line. On August 18 General Warren made an attack four miles below Petersburg, and after fighting three days the Federals destroyed seven miles of railroad, losing 4,543 men in the engagements.

WELLINGTON, ARTHUR WELLESLEY, FIRST DUKE OF (1769-1852). British general and statesman; born probably in Dublin; entered the army (1787); served in Holland against Pichegru (1794-1795); ordered to India (1796); commanded the English at Malavelly (1799); made major general (1802); returned to England (1805); entered Parliament for Rye (1806); appointed Irish secretary (1807); drove the Danes out of Zealand (1807); went to the relief of Portugal (1808); defeated the French at Vimiera (1808); given the chief command in the Peninsula (1809); drove the French from Spain, and captured Toulouse in the Peninsular war; made lieutenant general and K. C. B. (1808); received many titles of honor and all the most distinguished foreign orders; defeated King Joseph at Vitoria (1813); sent as ambassador extraordinary to France (1814) but was transferred to the Congress of Vienna (1815); commanded the forces of the English and allies in Belgium in coöperation with a Prussian army under Blücher; Blücher was defeated by Napoleon at Ligny; Wellington defeated Ney at Quatre Bras, and totally defeated Napoleon at Waterloo (June 18, 1815); Wellington created Prince of Waterloo; entered the cabinet as master general of the ordnance (1818); made constable of the Tower (1826), and in 1827 commander-in-chief; was prime minister (1828-1830); made foreign secretary (1834) under Peel; president of the privy council (1845-1846); was buried in Saint Paul's Cathedral.

WEST POINT. U. S. military post and the seat of U. S. Military Academy, on the western bank of the Hudson river, 50 miles north of New York. During the Revolution it was an important post and was fortified (1775-1780) under direction of Kosciusko, the Polish patriot; Fort Putnam and redoubts were constructed; a massive iron chain was stretched across the river; Washington's headquarters for a time (1779); Benedict Arnold in command attempted to surrender it to the British (1780); a reservation was acquired, consisting of 2,100 acres (1790), increased to 2,300 acres (1875); the "Corps of Engineers" was created (1802) to form a Military Academy, which was formally opened that year; grouped upon a hill 180 feet above the river, the buildings include officers' quarters, barracks, mess and riding halls, library, chapel, hospital, academic buildings, and Memorial Hall.

WEYLER Y NICOLAU, VALERIANO, MARQUIS OF TENERIFE (1838-). Spanish general. Military attaché of the Spanish legation in the United States during the Civil War; accompanied Sheridan on some campaigns; held a command under Balmaceda in the Ten Years' War in Cuba (1868-1878); served in Spain against the Carlists (1873); governor general of the Canaries (1879); captain general of the Philippines (1889), where he amassed a fortune; sent to Cuba (1896) to succeed Campos, where his severity excited a protest from the United States and he was recalled. In 1900 he was made captain general of Madrid; minister of war in the Sagasta Cabinet (1901-1902).

WHEELER, JOSEPH (1836-1906). American soldier; born in Augusta, Ga.; Confederate service (1861-1865); commanded a brigade at Shiloh (1862); as major general commanded the cavalry at Chickamauga; in Congress (1880-1898); major general of volunteers (1898); commanded at Las Guasimas; senior officer at San Juan hill; commissioner to arrange for surrender of Santiago; commanded a brigade in the Philippines (1899-1900); brigadier general, regular army (1900); retired (1900).

WHITE, PEREGRINE (1620-1704). The first child born of English parents in New England; born on the Mayflower in Cape Cod harbor, November 20, 1620. In "consideration of his birth" he received 200 acres of land. He held several civil and military offices.

WHITEMARSH (December 5, 8, 1777). After the battle of Germantown, the Americans, under Washington and Varnum, took up a position at Whitemarsh, 15 miles north of Philadelphia. Here they encountered the British led by General Howe, and after several skirmishes the Americans were driven from their position. On December 8th, the British withdrew to Philadelphia, with a loss of about 60 men. The Americans had lost about 100 men.

WHITE OAK SWAMP (June 30, 1862). As the Confederates were pursuing the Federals, during the Seven Days' Battles near Richmond, Va., the army led by Jackson came upon Franklin and Sumner near White Oak Swamp. The Federals were greatly outnumbered, but they prevented the advance of Jackson to the main army.

WHITE PLAINS (October 28, 1776). The American troops under Washington were encamped at White Plains, north of New York City, where they were attacked by the British, led by Howe. About 4,000 British attacked a division of about 1,500 Americans and forced them to retreat to the main army, but as Washington had now moved to a stronger position the British concluded to leave them and march southward.

WILDE, GEORGE FRANCIS FAXON (1845-). Rear admiral (retired) United States navy; born at Braintree, Mass.; graduated United States Naval Academy (1864); commanded U. S. S. Dolphin (1885-1888) on its cruise around the world—the first steel vessel of the United States navy to circumnavigate the globe; established electric light vessel off Diamond Shoal, Cape Hatteras; introduced telephone to light vessels from shore; introduced gas buoys on Great Lakes; landed the first marines in China, and sent them to Peking, where they guarded legation (November, 1898-April, 1899); captured and occupied city of Iloilo (February 11, 1899), receiving the thanks of the secretary of the navy; captured Vigan (February 18, 1900), receiving thanks of Spanish government for rescuing there 160 Spanish officers and families; captain of navy yard, Portsmouth, N. H. (1901-1902); navy yard, Boston (1903-1904); commandant League Island Navy Yard (February-May, 1904); navy yard, Boston (May, 1904-February, 1905); rear admiral (August 10, 1904); retired (February 20, 1905).

WILDERNESS (May 5-7, 1864). General Grant, in his march toward Richmond, was met by Lee and his Confederates in a forest on the banks of the Rapidan in Virginia. Here they fought what is known as the battle of the Wilderness. Both armies lost thousands of their men, but neither side was really victorious, and on the 7th Grant continued his march toward Richmond, followed by Lee.

WILLIAMS, ROGER (1604-1683). English Puritan minister; founder of Rhode Island colony; born in Wales; pastor in Salem (1633); banished for heterodox teachings (1635); he escaped to Providence (1636); elected president of Rhode Island colony (1654).

WILLIAMSBURG (May 5, 1862). When the Union forces learned that the Confederates had evacuated Yorktown and started for Richmond, a detachment was immediately sent in pursuit. At Williamsburg, between Yorktown and Richmond, Va., the Confederates were overtaken and a sharply contested battle was fought. Federal reinforcements failed to arrive and at first it looked as if the Confederates would be victorious, but Kearny's appearance saved the day, the Confederates retreating toward Richmond, leaving Williamsburg in Hooker's hands. In this battle the Federals lost 2,200 men; the Confederates, 2,000.

WILLIAMSON'S FARM (July 12, 1780). A force of 400 British militia under Captain Houk was taken by surprise at Williamson's Farm, in South Carolina, by a small number of Americans led by Bratton and McClure. After a sharp engagement, the British were overpowered and about 90 killed or wounded.

WILSON'S CREEK (August 10, 1861). In the summer of 1861, the Confederate forces in Missouri increased to 12,000 men, and although the Federal troops numbered only 5,500, General Lyon determined to make an attack at Wilson's Creek, Mo. On August 10, Sigel attacked the Confederate rear, while Lyon attacked the front. A stubborn fight ensued, which resulted in heavy losses on both sides and the retreat of the Federals toward Springfield.

WIMPFEN (May 6, 1622). During the Thirty Years' War, Wimpfen, a town in Baden, was the scene of a battle between the margrave of Baden and Tilly. The margrave was defeated with the loss of half his army, and Tilly made off with his train of artillery and military chest.

WINCHESTER. (1) See KERNSTOWN. (2) May 24, 1862. When the Confederates learned that the Federal armies in Virginia were planning to combine their forces, "Stonewall" Jackson was sent with 15,000 men to intercept them. As he advanced toward Harrisonburg, in the valley of the Shenandoah, Banks retreated to Winchester, where, on May 24, the two armies met and fought a brief battle which resulted in the flight of Banks and his men toward Harper's Ferry, on the Potomac river, pursued by Jackson. (3) On June 13, 1863, Lee started north by way of the Shenandoah valley with a large Confederate army. At Winchester, he came upon General Milroy with 7,000 men, whom he attacked and utterly routed. The broken and scattered Federal troops fled in confusion toward the Potomac river, and some were afterward collected in Pennsylvania. (4) September 19, 1864. While the Confederates under Early were encamped on the west bank of Opequan creek, near Winchester, they were attacked by Sheridan. At the end of a five hours' engagement the Confederates retreated toward Winchester with a loss of 3,611 men. The Federal loss was 5,018.

WISCONSIN HEIGHTS (July 21, 1832). From Illinois the Indians retreated into Wisconsin. The combined forces of General Atkinson, Henry, and Dodge pursued them, and on July 21st overtook them on the bluffs along the Wisconsin river. Too exhausted and disheartened to enter into a severe struggle, they made a feeble resistance and retreated, with a loss of 68 killed.

WISE, WILLIAM CLINTON (1842-). Rear admiral (retired) United States navy; born at Lewisburg, Va.; graduated United States Naval Academy (1863); served in Civil War, commanding in 1865 Admiral Porter's flagship, Malvern; inspector of ordnance, navy yard, Norfolk (1878-1881); navy yard, Portsmouth, N. H. (1884-1887); lighthouse inspector, 15th district (1890-1894); captain of yard, navy yard, Norfolk (1897-1898); rear admiral (June 14, 1902); commander-in-chief of Atlantic training squadron (1903-1904); retired (November 8, 1904); special duty in connection with steamboat inspection service (1904-1905).

WIT'TEKIND (? -807). A Westphalian chieftain; leader of the Saxons against Charlemagne; after the Imperial Diet at Paderborn (777), rather than submit to the Frankish king, he fled to Siegfried, King of Jutland; returned in 778 and began to devastate the Rhine country; in 782 he surprised and destroyed the Frankish army at the Süntelberg, which act Charlemagne revenged by killing 4,500 Saxons at Verden. There was war until 785, when peace was established. Wittekind received baptism, and the legend goes that he was promoted to be Duke of the Saxons, and Enger was made over to him.

WOLFE, JAMES (1727-1759). A major general; conqueror of Quebec; born in Kent, England; entered the army (1741), where his rise was rapid; the capture of Louisburg was mainly due to his efforts; received the command of the expedition for expelling the French from Canada; the French were defeated and later evacuated Quebec, whose fall decided the fate of Canada. Wolfe was killed in the hour of victory.

WOLSELEY, SIR GARNET JOSEPH, FIRST VISCOUNT (1833-). British soldier; born in Dublin County; served in the Burmese War (1852-1853), and in the Crimean War, being twice wounded; captain in the Indian mutiny; lieutenant colonel in the Chinese expedition (1860); suppressed the Riel Rebellion in Canada (1870); major general in the Ashantee War (1873-1874); commanded in the Zulu War (1879); defeated Arabi Pasha at Tel-el-Kebir (1882); commander-in-chief of the British army (1895-1900).

WOOD, LEONARD (1860-). American soldier; born in Winchester, N. H.; surgeon in the Regular army (1886); served in the campaign against Geronimo's Apaches (1886). He and Theodore Roosevelt organized the "Rough Riders" in the Spanish-American War, with Wood as colonel and Roosevelt, lieutenant colonel. Wood commanded the regiment at Las Guasimas, and was in charge of one of Wheeler's brigades at San Juan hill; brigadier general of volunteers (1898); major general a few months later; brigadier general of the Regular army (1901); in

command of Santiago after the surrender; governor general of Cuba (1899); in command of a division in the Philippines (1903); major general (1908); chief of staff of the army (1910).

WORTH (August 6, 1870). One of the battles of the Franco-Prussian War was fought at Wörth, in Alsace. The Prussians defeated MacMahon, the French leader.

WOUNDED KNEE (December 29, 1890). Upon the death of Sitting Bull, a band of about 300 South Dakota Indians, led by Big Foot, attempted to leave their reservation to join the hostile Indians in the Bad Lands. On December 29 they were met at Wounded Knee creek by a body of United States troops, and a battle ensued in which almost the entire band was annihilated. The loss to the Americans was 32 killed and 39 wounded.

WRANGEL, FREDERICK (1784-1877). A Prussian general; born at Stettin; entered the Prussian army as ensign (1796); fought in the campaigns of 1807, 1813, and 1814 against Napoleon; commanded the federal troops in Schleswig-Holstein; became field-marshal (1856); given supreme command over Prussian and Austrian troops in the Danish War of 1864; was made count (1866) and served that year in the Austro-Prussian War, but soon retired from the command.

WURSCHEN (May 21, 1813). The Russians and Prussians allied their forces and waged what is known as the war of liberation against Napoleon. The allies were forced to retreat to Wurschen, near Bautzen in Saxony, where they were defeated, Napoleon being victorious but losing heavily in the conflict.

WURZBURG (September 3, 1796). Archduke Charles of Austria defeated Jourdan, the French general, at Würzburg, in Bavaria.

WYOMING (July 3, 4, 1778). The valley of Wyoming is beautifully located between mountain ranges in north central Pennsylvania. An army of Tories and Indians, led by Col. John Butler, swarmed into the valley, taking the peaceful inhabitants completely by surprise. The Americans could gather only a small force, and these did their best to drive out the invaders, but they were overpowered and compelled to flee for their lives. For two days the Indians conducted a fearful massacre, many were taken captive, and most of those who escaped died of starvation in the forests.

XERES (July 26, 711). At Xeres (Jerez de la Frontera), in southern Spain, a battle was fought between the Visigoths and the Saracens, in which the latter were victorious.

X. Y. Z. CORRESPONDENCE. Dispatches sent from France to the United States government by three special envoys, C. C. Pinckney, John Marshall, and Elbridge Gerry in 1797-1798, concerning the strained relations which then existed between the two countries. X., Y., and Z. were the means of identifying three agents of the French government, M. Hottinguer (X.), M. Bellamy (Y.), and M. Hauteval (Z.). The proposals of these agents involved the payment of a large sum of money and were rejected.

YALU RIVER (September 17, 1894). A great naval battle was fought at the mouth of the Yalu river, in Manchuria, between the Chinese and Japanese during the Chino-Japanese War. The Chinese were defeated, losing five war vessels. The American, Captain Philo McGiffen, commanded one of the Chinese ships, and was the first white man to have any practical experience of the modern battleship in action. (May 1, 1904) The Japanese under Kuroki attacked and defeated the Russians under Sassulitch.

YINKOW (July 23, 1904). An attack of the Russians by the Japanese forced the former to evacuate Yinkow, as well as Tashichiao, near it. This deprived Russia of her last base on the Chinese seacoast, and cut off traffic on the Peking railroad.

YORK (Toronto) (April 27, 1813). An army of Americans commanded by Pike were sent to capture York (now Toronto, Canada). On landing they were met by a force of British and Indians, but after a few hours' fighting the town capitulated. Just after its surrender a terrific explosion occurred, which killed Pike and many men on both sides.

YORKTOWN. (1) October 19, 1781. The American forces commanded by Washington and assisted by the French fleet surrounded Yorktown, at the mouth of the York river in Virginia, where Cornwallis was stationed with an English army. The bombardment began on October 6th and continued until the surrender of the British on October 19th. The sword of Cornwallis was sent to Lincoln and over 8,000 men became prisoners of war. (2) April 4-May 5, 1862. During the Civil War Yorktown was again besieged. The Confederates under Johnston occupied the village, and the Federals led by McClellan opened a siege after careful preparation. But the Confederates had watched their opportunity and escaped toward Richmond.

YOUNG'S HOUSE (February 3, 1780). About 500 British and their allies led by Colonel Norton left Fort Washington to break up the American headquarters at Joseph Young's residence on the road from Tarrytown to White Plains, N. Y. When the British approached, the American picket guard fled for safety to Young's house. The British set fire to the house and captured 76 prisoners, including Joseph Young and Lieutenant Colonel Thompson.

YUKON (Gold Fields). Gold was found on the Yukon as early as 1862, but it was not until 1886 that the discovery of rich gold placers along the upper Yukon at Forty Mile Creek, followed by further explorations in the other streams of the Yukon basin, led to productive workings. In 1896 a rich placer claim was located on a tributary of the Klondike river, which joins the Yukon just above the American boundary. By 1898 there had been an immigration of between 30,000 and 40,000 people. No such stampede of miners has occurred since the migration of the "Forty-Niners" to California. Dawson, the capital of the Yukon region, became a thriving camp of several thousand inhabitants. Six sevenths of the gold production in all Alaska is placer gold. As the ground, except for a few feet near the surface, is frozen throughout the year, the work of excavation and thawing is extremely difficult. The Nome district of Seward Peninsula was discovered and developed as a result of the operation in the Yukon region.

ZAMA. (1) 256-255 B. C. In the First Punic War between Rome and Carthage, Regulus invaded Africa with great success until he was finally defeated and taken prisoner at Zama, a town near Carthage. (2) 202 B. C. Zama was also the scene of the final battle of the Second Punic War, in which the Romans, under Scipio, defeated the Carthaginian forces, under Hannibal. Zama is called the Waterloo of Hannibal.

ZANCLE or **MESSINA.** 645-628 B.C. The Messenians fled from Greece, during the Second Messenian War, and occupied Zancle, a town on the island of Sicily, afterwards known as Messina.

ZARA (1202). During the Crusades the Venetians bargained with the Crusaders to plunder Zara, a Christian city in Dalmatia and the great commercial rival of Venice. Together they took the city and destroyed it.

ZISKA, JOHN (1360-1424). Hussite leader; nobly born at Trocznov, in Bohemia; fought for the Teutonic knights against the Poles in the battle of Tannenberg, and for the English at Agincourt (1415); headed the Protestant Hussites and won a victory over the emperor Sigismund (1421); captured Prague and made a fortress of Tabor mountain, whence his party took the name of Taborites; in a series of 12 victories, with but one defeat, the Hussites compelled Sigismund to offer religious liberty (1424).

ZORNDORF (August 25-26, 1758). During the Seven Years' War, Zorndorf, in Prussia, was the scene of a battle between Frederick II. of Prussia and the Russians, under General Fermor, in which the latter were defeated. The fight was long and persistent, both armies losing heavily.

ZUYDER ZEE or **ZUIDER ZEE** (August 30, 1799). In an invasion of Holland by the English and Russians, the Dutch fleet in the Zuyder Zee, a large arm of the sea penetrating into the Netherlands, surrendered to the British without firing a gun.

ZWIN'GLI, ULRICH, or **ZUINGLIUS** (1484-1531). Leader of the Protestant Reformation in Switzerland; born at Wildhaus in the Toggenburg valley; studied at the University of Vienna; called to be pastor of Glarus (1506); preached against the use of indulgences; appointed to preach in the Zürich minster (1518); first made public his views on the Lord's Supper in 1524; war was made by the papal cantons against the reformed cantons of Zürich and Bern; the latter were defeated at Cappel (1531) and the reformer was among those who were killed. Zwingli's controversy with Luther produced a division in Protestantism.

THE IMPORTANT WARS OF HISTORY.

NOTE.— The first named of the contestants, the battles won by them, and the generals connected with that side are put in **bold face.**

Name and Dates, B. C.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Trojan, 1193-1184.	**Greeks,** Trojans.	Greeks avenge the carrying off of Helen by Paris.	**Siege of Troy.**	**Agamemnon,** Hector.	Troy captured and destroyed.
First Messenian, 743-724.	**Spartans,** Messenians.	Spartans covet the rich land of the neighboring Messenians.	**Siege of Ithome.**	Aristodemus.	Messenians became tributary to Sparta and part of their land confiscated.
Second Messenian, 645-628.	**Spartans,** Messenians.	Messenians revolt from Spartan oppression.	**Ira, Zancle.** (See Messina.)	Aristomenes.	Messenians who had not fled to Sicily or elsewhere became Helots.
First Sacred or Holy, 600-590.	**Amphictyonic League,** Cirrhæans.	People of the city of Cirrha on Bay of Corinth covet the wealth of Delphi.	**Siege of Cirrha** and **Crisa.**	**Clisthenes.**	Greek cities, for the first time joined in effective league, save Delphi from spoliation. Cirrha is consecrated to Delphi.
Persian-Grecian, 500-479. (I. First Persian Expedition, 493.)	**Persians,** Macedonians, Thracians.	Darius seeks to avenge burning of Sardis by Greeks when aiding revolt of Ionic Greek cities (500-494).	Persians are harassed on land by Thracians and lose 300 ships by storm off Mt. Athos.	**Mardonius.**	Expedition returns to Persia getting no farther than Thrace.
(II. Second Persian Expedition, 490.)	**Persians,** Greeks.	Previous failure.	**Naxos, Eretria,** Marathon (490).	**Datis, Artaphernes,** Miltiades (Athens).	Complete victory for the Athenians and retreat of Persians to Asia Minor
(III. Third Persian Expedition, 481-480.)	**Persians,** Greeks.	Persians desire to avenge former defeat.	**Thermopylæ, Artemisium** (naval). **Athens burned,** Salamis (naval).	**Xerxes,** Leonidas (Sparta). **Achæmenes,** Eurybiades. Themistocles. Aristides.	After defeat at Salamis, Xerxes with part of his army retreated to Persia.
(IV. Fourth Persian Expedition, 479.)	**Greater part of Xerxes' army** with allies from **Thessaly, Bœotia, Phocis,** and **Argos,** Athenians, Platæans. Thespians, and Spartans.	Desperate effort of Persians to overcome Greeks.	**Athens** laid waste, Platæa, Mycale (naval).	**Mardonius, Artabazus.** Pausanius (Sparta). Aristides. **Mardonius,** Leotychidas.	This ended Persian invasions and all Persian attempts to subjugate Greece.
Third Messenian, 464-456.	**Helots of Messenian descent,** Spartans.	Confusion following earthquake gave Helots courage to revolt.	**Ithome** besieged.		Messenians capitulated. In this war Sparta implores and then returns Athenian aid, whereupon Athens allies herself to Argos, the rival of Sparta.
Peloponnesian 431-404. (First Period, 431-421.)	**Sparta and Allies,** Athens and Allies.	Sparta and her allies were jealous of Athens' growing power and influence; also discontent among some of the Athenian subject states.	Attica invaded, The plague there. Potidæa. Naval battles near Corinth. Siege of Mitylene. **Siege of Platæa.** Sphacteria. **Delium.** Amphipolis.	Phormio. **Archidamus, Agis,** Cleippides. **Brasidas.** Demosthenes. Hippocrates. Cleon.	Peace of Nicias (421) recognized Athens' supremacy over many Hellenic cities; Sparta had freed none from Athenian tyranny.
(Second Period or Decelean War, 413-404.)	**Sparta,** Athens.	Sparta invades Attica weakened by great defeat of both her army and navy at Syracuse (413).	**Decelea occupied and Attica ravaged.** Many of Athens' subject states revolt. Abydos (naval). Cyzicus. **Notium** (naval). Arginusæ (naval). **Ægospotami. Athens.**	**Agis,** Alcibiades serves Athens, Sparta, and Athens in turn. **Mindarus,** Thrasybulus. **Callicratides,** Conon. **Lysander.**	The decisive victory of the Spartans at Ægospotami left the Athenians with all their resources exhausted; the Lacedæmonians tore down the walls of Piræus and Athens. Sparta was now supreme in Greece.
Second Sacred, 355-346.	**Thebans, Locrians, Thessalians,** and **Macedonians,** Phocians.	Phocians seize and plunder Delphi because of fine imposed by Amphictyonic Council.		**Philip of Macedon,** Onomarchus. Phalæcus.	Thebans invite the aid of Philip against the Phocians and he becomes a member of the Amphictyonic Council.
Third Holy, 339-338.	**Thebans, Athenians,** Macedonians.	Philip is intrusted by the League with the punishment of Amphissa, whereupon he seized Elatea.	Chæronea.	Philip of Macedon.	By the battle of Chæronea Philip gains such an ascendency that henceforth Greece is under control of Macedonia.
Samnite, 343-266, First Samnite, 343-341.	**Romans,** Samnites.	The Sidici invite aid of Romans against the Samnites, who ravage their land.	**Mount Gaurus. Suessula.**	**Marcus Valerius Corvus. P. Decius Mus.**	By a treaty of peace Rome received Capua, the Samnites, Teanum.

Name and Dates, B. C.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Greco-Persian, 334-330.	**Macedonians,** Persians.	Alexander, son of Philip, desires to carry out his father's plans to conquer Persia.	**Granicus** (334), **Issus** (333), **Arbela** (331).	**Alexander the Great,** Darius, Memnon.	Persian Empire conquered. It marks the height of Macedonian power.
Second or Great Samnite, 326-304.	**Romans,** Samnites.	Encroachments of the Romans on the Liris.	Caudine Forks, **Capua,** **Vadimonian Lake, Bovianum.**	Gavius Pontius, **Q. Fabius Rullianus,** **P. Decius Mus.**	The Samnites beg for peace and are considered on an equality with Rome.
Third Samnite, 298-290.	**Romans,** Samnites.	War of Rome with Etruscans and Gauls tempts the Samnites, strengthened by league with Lucanians, to open hostilities.	**Sentinum.**	**Q. Fabius Rullianus,** **P. Decius Mus,** Pontius.	Romans become supreme power in Italy.
First Punic, 264-241	**Romans,** Sicily, Carthage.	Some Campanian mercenaries, having seized Messana in Sicily, appeal to Rome for aid. It is a cause for Rome to give vent to her jealousy of Carthage.	**Agrigentum,** **Mylæ** (naval), **Ecnomus,** Tunes, **Panormus,** Drepanum (naval), **Ægatian Islands** (naval).	**C. Duilius,** **M. Atilius Regulus,** Hamilcar, **C. Lutatius Catulus,** Hanno.	Carthaginians evacuated Sicily and paid a war indemnity.
Second Punic, 218-201.	**Rome,** Carthage.	Quarrel in Spain over encroachments of Carthage.	Ticinus, Trebia, Trasimene, Cannæ, **Nola,** **Syracuse,** **Capua,** **Metaurus** (207), **Zama** (202).	Hannibal, **Tiberius Sempronius Longus,** **Nepos,** **Marcellus,** **Flaccus,** **Fabius,** Hasdrubal, **Nero,** **Scipio.**	Hannibal, the "greatest general in history," was worn out by the patience and loyalty of Italy. Carthage forced to pay tribute and relinquish Spain. Her fleet was burned and she agreed not to go to war without Rome's permission.
The Four Macedonian or Greco-Roman, 214-146.	**Romans,** Greeks.	Philip, a king of Macedon, is allied with Carthage.	**Cynoscephalæ,** **Pydna.**	**T. Quinctius Flamininus,** Philip of Macedon. Perseus, **L. Æmilius Paullus.**	Greece became a Roman province.
Third Punic, 149-146.	**Rome,** Carthage.	War of Carthage with Massinissa, the pretext for Rome to open hostilities.	**Siege of Carthage.**	**Scipio Æmilianus Africanus.**	Carthage razed to the ground and most of her territory became the Roman province of Africa.
Jugurthine, 111-105.	**Rome,** Numidia.	The rule of Jugurtha is displeasing to Rome.	**Muthul,** **Cirta.**	**Q. Metellus,** **Caius Marius,** Jugurtha.	Numidia, the strongest state in Africa since Carthage, brought to complete subjection to Rome.
Marsian or Social, 91-88.	**Rome,** Italian allies particularly the Marsians.	Italian socii resent that Rome makes laws for all Italy.	Massacre at Asculum, **Nola,** **Bovianum,** **Cannæ.**	**C. Marius,** **Sulla.**	Roman franchise extended to all residents of Italy.
First Roman Civil War, 88-82.	**Sulla** (**optimates**), Marius (democrats).	The revolutionary laws of Sulpicius concerning voting which had been passed by means of violence.	**Sacriportus,** Reactionary Reign of Terror in Rome.	**Sulla,** **Pompey,** Marius, Carbo.	Sulla, backed by his army, has himself appointed dictator for an unlimited time.
Mithridatic, 88-64. (First, 88-84.) (Second, 83-81.) (Third, 74-64.)	**Rome,** Pontus and Armenia.	Mithridates IV. resents Roman interference and dictation.	Siege of Rhodes. Massacre of Roman citizens. **Chæronea,** **Orchomenus,** **Cabira,** **Tigranocerta,** **Lycos.**	**Sulla,** **Lucullus,** **Pompey,** Mithridates (Pontus), Tigranes (Armenia).	Rome extended her conquests by overthrowing her most formidable opponent in the East.
Gladiatorial and Third Servile, 73-71.	**Romans,** Gladiators, and dissatisfied Italians.	Uprising of about 70 gladiators at Capua is joined by many discontented Italians.	Mt. Vesuvius, Mutina, **Mt. Calamatius.**	Spartacus, **Crassus,** **Pompey.**	This revolt, indicative of great discontent, unsettled the foundation of the empire and was put down with difficulty.
Gallic, 58-51.	**Romans,** Gauls.	Rome desires to widen her conquests.	**Siege of Avaricum.** **Siege of Alesia.**	**Cæsar,** **P. Crassus,** Ariovistus, Cassivelaunus, Ambiorix, Vercingetorix.	Conquest of Gaul completed. Britain subjected.
Second Roman Civil, 49-31. (First Period, 49-45.)	Followers of **Cæsar** (democrats), and Pompey and his sons (republican aristocrats).	The Republic had long been doomed and the struggle between strong men for the mastery was inevitable.	**Pharsalus,** **Thapsus** (Africa).	**Cæsar,** Pompey, Brutus, Scipio, Cato.	In 45 Cæsar caused himself to be appointed dictator for life (since 49 he had been imperator), *i. e.*, he was a democratic monarch. The battle of Actium (31) marks the end of the Roman republic and the beginning of the empire.
(Second Period, 44-30.)	Followers of **Octavius** and Antony.		**Mutina,** Philippi, **Actium.**	Cnæus and Sextus Pompeius. **Octavianus,** Antony.	

Names and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Jewish-Roman, 66-70.	**Romans,** Jews.	Civil dissensions and Jewish revolt against Rome.	**Siege of Jerusalem.**	**Titus.**	Jerusalem and her temple destroyed.
Dacian 86-90. 101-102. 105-107.	**Rome,** Dacia.	Rome desires to extend her conquests.	**Tapæ.**	**Domitian, Trajan,** Decebalus.	This was the high-water mark of Roman conquest and possessions.
Invasions and conquests of northern tribes, 375-800. List of Tribes: West Goths or Visigoths, Vandals, Suevi, Alani, Salic Franks or Merovingians, Burgundians, Herulian Vandals, East Goths or Ostrogoths, Alamanni, Ripuarian Franks, Jutes, Saxons, Angles, Thuringians, Langobards or Lombards.	**Barbaric Tribes,** People of the Old Roman Empire.	Pressed from behind by the Mongolian Huns (who cross the Volga in 375), the Teutons encroach upon the Roman empire.	**Adrianople,** 378, (West Goths). **First Invasion of Italy,** 401 (West Goths). The Burgundians settle on the middle Rhine, 406-413. Salian Franks begin to occupy northern Gaul, 407. **Vandals invade Spain,** 409. **Sack of Rome,** 410 (West Goths). West Gothic kingdom of Tolosa (Toulouse), 415-507. Vandals settle in Africa, 429-534. **Carthage,** 439 (Vandals).	Valens. **Alaric** (West Goth), Stilicho (Western Empire). **Walja** (West Goth). **Genseric** (Vandal).	The direct result of the invasions of the barbarian hordes was the long period of assimilation and education of the invaders, called the Middle Ages. Of all the many kingdoms the Frankish was the only one to endure, and the year 800 marks the height of the extent and power of Charlemagne's empire.
			England invaded by Jutes, Angles, and Saxons, 449. Huns and East Goths ravage Gaul, 451. Battle near Châlons, 451.	**Hengist** and **Horsa** (Saxons). Attila (Hun), **Aetius.**	
			Huns destroy Aquileia, and Venice founded, 452. Rome plundered by Vandals, 455. Herulians gain ascendency in Rome. "The Fall of the Roman Empire," 476. Battle of Soissons, 486.	Leo, Bishop of Rome. **Odovakar.** **Clovis** or **Chlodwig** (Salic Frank), Syagrius.	
			Kingdom of Franks under Merovingians, 486-751. Clovis conquers the Alamanni and becomes Catholic Christian, 496. East Gothic kingdom in Italy, 493-555.	**Theodoric the Great** (East Goth).	
			West Goths settle in Spain, 507-711. Eastern Roman Empire destroys Vandal power in Africa, 533-534. Battle of Taginæ in Italy, 552.	**Belisarius,** Vitiges, **Narses,** Totila.	
			Lombard kingdom in Italy, 568-774. Battle of Deorham in England, 577.	Ceawlin (West Saxon).	
			Suevi settle in Spain, now Portugal, 585. Carolingian line established in Frankish kingdom, 751. Charlemagne destroys Langobard kingdom, 773-774; war with Saxons, 772-804; Spain, 778; Northmen, 788; Avars, 791-799. Charlemagne crowned Emperor of the West by Leo III., Christmas Day, 800.	**Pipin.** **Charlemagne.**	
Saracen or Mohammedan, 634-1492.	**Arabian, Saracens, Moors,** Syria, Persia, Egypt, North Africa, Turkey, Spain, France, Sicily.	Desire of Saracens to found an empire similar to the ancient Roman empire and make the world Mohammedan.	**Ajnadin, Damascus, Yermouk** (Syria), **Jerusalem** (637), **Cadesia** (Persia), **Nehavend** (Persia), **Alexandria** (Egypt), **Carthage,** Constantinople, **Xeres, Granada, Toledo, Seville, Bordeaux,** Tours (732), Jerusalem (1099). **Constantinople** (1453). Alhama, Granada (1492).	**Omar** (634-644), **Abi Wakkas,** Isdigerd, **Amru, Othman** (644-656), **Musa, Tarik, Ambessa,** Eudo, **Abd-er Rahman,** Charles Martel, Cid (both Christian and Moslem sides), Constantine XIII., **Mohammed II.,** **Abdallah,** Ferdinand.	The Saracens have three times keenly affected European history. (1) In their attempted conquest and conversion of Europe (710-1492), which was defeated at the battle of Tours, 732; (2) the conquest of Jerusalem by the Seljuk Turks, 1076, which led to the crusades, and (3) the capture of Constantinople and the closing of the Bosporus, which led to the Great Period of World Exploration.

Names and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Norman conquest, 1066.	**Normans,** Saxons.	The invaders, being stronger, desire to rule.	**Hastings** (1066).	**William of Normandy,** Harold of Wessex.	The power of the king strengthened and feudalism introduced.
Crusades. First movement, 1096-1099.	**European Christians,** Turks and Moslems.	Fired by the enthusiasm of Peter the Hermit and Pope Urban II., the Christians of Europe decide to rescue the tomb of Christ from the Infidels.	**Nicæa,** **Jerusalem.**	**Peter the Hermit, Walter the Penniless, Godfrey de Bouillon.**	Jerusalem is conquered and the Latin kingdom of Jerusalem is founded.
Second movement, 1147-1149.		Jerusalem is threatened and St. Bernard preaches another crusade.	Crusaders reach Jerusalem. Siege of Damascus.	Conrad III. (Germany), Louis VII. (France), King Roger (Naples).	Petty personal disagreements of the leaders bring the Second Crusade to naught.
Third movement, 1189-1192		The capture of Jerusalem by Saladin.	**Acre.** Richard imprisoned by Henry VI.	**Richard I.** (England), **Frederick Barbarossa** (Germany), **Philip Augustus** (France), Saladin.	By treaty it was stipulated that Latin Christians should visit the tomb of Christ without molestation.
Fourth movement, 1196-1197.		German barons and their followers start on a crusade.	**Jaffa,** Thoron.	Saphadin.	Forces become demoralized and return home.
Fifth movement, 1202-1204		Plight of Crusaders in Jerusalem appeals to Innocent III.	**Zara, Constantinople.**	**Boniface, Marquis of Montferrat.** Dandolo (Venice).	Influenced by Venetians the Crusaders first take Zara and then capture Constantinople. The expedition breaks up.
Children's crusade, 1212.		Fanatic preachers persuade 50,000 French and German children to go on a Crusade.		**Nicholas,** a fanatic preacher.	Only about a tenth return home, the others perish in Europe or are sold into slavery by French merchants.
Sixth movement, 1217-1229.		Hungarian, German, and Italian nobles take the cross.	**Damietta.**	**Andrew, king of Hungary, Frederick II.**	Jerusalem taken by Frederick, who becomes king of Jerusalem. The advantage speedily lost.
Seventh movement, 1248-1254.		Louis IX. and his countrymen start on a Crusade via Egypt.	**Damietta,** Mansourah.	**St. Louis of France.**	Defeated in battle, stricken with disease, and outgeneraled, Crusaders are obliged to surrender.
Last undertakings, 1270-1271.			**Tunis, Nazareth.**	**St. Louis** and **Philip III.** (France), **Prince Edward** (England).	Results of the Crusades were: increased power of the church, personal power of princes, the rise of many independent communities, who bought their freedom from their crusading overlords, intellectual growth, and development of commerce.
Hundred Years', 1339-1453.	**France,** England.	Edward III. of England asserts his claim to French throne.	Crécy, Calais, Poitiers, Peace of Bretigny. Navarrete, Limoges. Agincourt, Rouen, Treaty of Troyes. **Orleans** (1429). **Patay,** Paris, Castillon.	Edward III., Edward, the Black Prince, **Du Guesclin.** Henry V., **Joan of Arc, Charles VII.,**	England could gain but not keep her advantages. When Charles VII. entered Paris (1437), the war was virtually ended and England had lost all foothold in France, except Calais.
Austro-Swiss, 1386-1388.	**Austria,** Swiss Confederation.	Austria was the oppressor of the Swiss.	Sempach, Näfels.	**Leopold II., Leopold III.,** Winkelried.	Switzerland shows power which finally gains her independence by peace of Westphalia, 1648.
Hussite, 1419-1436.	**Supporters of the Pope,** Austrian Hussites or Utraquists.	The condemnation of John Huss, the reformer.	Revolt in Prague. First Crusaders against Bohemia repulsed. Crusade of German Electors repulsed. Deutsch-Brod, Thauss, Council of Basel. **Boehmisch-Brod.**	**Emperor Sigismund,** Ziska, Procopius the Great, **Frederick of Brandenburg, Albert of Austria.**	By military prowess, the Hussites obtained religious toleration from the Pope.
War of the Roses, 1455-1485.	**Yorkists** (White Rose), Lancastrians (Red Rose).	The feebleness of Henry VI. encourages the duke of York, descendant of Edward III., to aspire to the throne	**St. Albans, Bloreheath, Northampton,** Wakefield, St. Albans, Edward of York crowned. **Towton, Barnet, Tewkesbury.**	**Richard** and **Edward, Dukes of York, Earl of Warwick** (later a Lancastrian). Henry VI., Queen Margaret	House of York, in person of Edward IV., supplants the House of Lancaster on the English throne.

Names and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
French Civil War or wars of religion or wars of the Huguenots, 1562-1598.	**Catholics,** Huguenots.	Massacre of Huguenots at Vassy was a signal for uprising.	Orleans, **Massacres of Huguenots, Dreux,** Edict of Amboise. St. Denis (indecisive). **Jarnac, Moncontour,** Peace of St. Germain-en-Laye. **Massacre of St. Bartholomew** (1572), Ivry, **Siege of Paris,** Siege of Rouen.	Condé. Coligny. **Duke of Guise, Henry III., Duke of Anjou,** Henry of Navarre (afterwards Henry IV.). **Duke of Parma** (Spain). **Mayenne.**	The hostilities ended in 1593 by the abjuration of Protestantism by Henry IV., but it was followed in 1598 by the Edict of Nantes, which granted civil liberty and greater religious freedom to Protestants.
Spanish-Netherlands, 1568-1648.	**"Beggars"** or **"Gueux"** opposed to religious intolerance of Roman Church and tyranny of Spain.	The hatred of the Inquisition and the despotic measures of Philip II. of Spain led to open revolt.	Riots of Image Breakers. Council of Blood. Whole population of Netherlands condemned to death by Inquisition. Jemmingen, **Brille, Mons.** Massacres at Mechlin, Zutphen, and Naarden. Haarlem, **Alkmaar. Naval engagement on Zuyderzee. Middelburg.** Mookerheyde. Mutiny of Spanish troops. Armada (1588) (English allies), Maestricht, Ghent, Antwerp, Nieuport.	**Egmont, William of Orange,** Duke of Alva. **Louis of Nassau.** Bossu, **Dirkson.** Louis de Requesens, Don John of Austria, Alexander Farnese (duke of Parma), **Maurice of Nassau.**	By Pacification of Ghent, 1576, Catholic and Protestant provinces in the Netherlands were united. In 1579 by the union of Utrecht the seven northern provinces proclaimed their independence. The deaths of Parma, 1592, and Philip, 1598, led to twelve years' truce, 1609-1621, and in 1648 the Republic, by the Peace of Westphalia, obtains a recognition of its independence from Philip IV. of Spain. This war marks the beginning of Spain's downfall.
Thirty Years', 1618-1648.	**German Protestants** and their allies, **England, Holland, Denmark, Sweden** and **France,** Catholic Imperial Germans and their allies, Spain, Italy, Bavaria, and Saxony.	Ferdinand, because of his anti-Catholic record, is deposed from kingship of Bohemia and Frederick V. elected. The cause of religion arouses political sympathy in many countries so that at last almost every nation in Europe is actively involved on one side or another.	White Hill, Wimpfen, Höchst, Stadtlohn, Dessau, Lutter am Barenberge, **Stralsund,** Magdeburg, **Leipzig** (Breitenfeld), **Luetzen,** Nördlingen, **Jankowitz, Dutlingen,** Freiburg, Philipsburg, **Prague.**	Ferdinand, Maximilian, **Frederick, Mansfeld,** Tilly, Spinola, Wallenstein, **Gustavus Adolphus** (Sweden), **Oxenstiern,** King of Hungary, **Valette,** Baner (Sweden), **Bernhard** (Saxe Weimar), **Torstenson** (Sweden), **Conde** (France). Turenne, **Merci.**	This religious, civil, and foreign war, the most destructive in modern history, was ended by the Peace of Westphalia, 1648, by which Alsace went to France. Switzerland was separated from the empire, the Palatinate was divided
Civil War in England or the Great Rebellion, 1642-1648.	**Royal Party** in England, Ireland, Wales, and Scotland. Parliamentary party in England and Scotland.	The grievances against the Crown, especially the charge of treason against the Five Members, culminate in open hostility.	**Edgehill,** Siege of Gloucester, Newbury (1st), Marston Moor, Naseby, Bristol, Preston.	Earl of Essex, **Earl of Lindsey, Prince Rupert,** Cromwell, Sir Thos. Fairfax.	The ultimate result was the replacement of a constitutional monarchy for the feudal monarchy represented in Charles I.
Swedish-Russian or Northern, 1700-1721.	**Sweden,** Russia and her allies, Denmark, Saxony, Poland.	Russia determines to get possession of harbors on the Baltic.	**Narva,** Pultowa (1709).	**Charles XII.,** Peter the Great.	The decisive victory of Pultowa 1709, determined that Russia, not Sweden, was to be master of northern Europe. By the peace of Nystadt (1721), Sweden ceded to Russia large territories.
Spanish succession; in America, Queen Anne's War, 1702-1713.	**England, United Provinces, Austria, Portugal, Denmark, Germany, Savoy** (after 1703). France, Spain, Bavaria, Spanish-Netherlands.	Charles II., contrary to the "partition treaty of some of the powers," at his death, bequeathes his domain to Philip, Duke of Anjou (1700). The Grand Alliance choose Charles, son of Leopold of Austria, heir to the throne of France instead of Philip, who is next by birth.	**Vigo Bay, Gibraltar,** Höchstädt, **Blenheim** (1704), **Barcelona,** Almansa, **Ramillies, Turin, Oudenarde, Malplaquet, Nova Scotia,** Denain.	**Duke of Ormond,** Rooke (England), **Duke of Marlborough,** Villeroy, Marshal Tessé, **Prince Eugene** (Savoy), Vendôme, Villars (France).	The peaces of Utrecht (1713), and Rastadt (1714) warranted the separation of the Spanish and French thrones and acknowledged the Protestant House of Hanover as the ruling family in England: large territories in America were given to England, and Austria took possession of Spanish-Netherlands.

Names and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Austrian Succession, 1740-1748.	**Austria, Hungary, Bohemia, England, Holland, Saxony,** Prussia, France, Bavaria, Spain.	At the death of Charles VI. of Austria the right to the throne of his daughter, Maria Theresa, is contested by three, chiefly by Frederick the Great of Prussia, who favored the succession of Charles Albert, Elector of Bavaria.	Mollwitz, Czaslau, Chotusitz, Treaty of Breslau, **Dettingen,** Prague, Fontenoy, Hohenfriedberg, Soor, Kesseldorf, Peace at Dresden,	Frederick the Great (Prussia), Schwerin, **Khevenhuller, Prince Charles of Lorraine, Prince Lobkowitz,** Broglio, **George II.** (England).	The treaty of Aix-la-Chapelle (1748) awarded Silesia to Frederick, recognized the election of Francis of Austria as emperor, and the Pragmatic Succession.
Third Silesian or the Seven Years'; in America, the French and Indian, 1756-1763.	**Prussia, England,** Saxony, Austria (The Empire), Sweden, Russia, France, Spain,	Russia and Saxony desiring to divide Prussia drive her to an alliance with England, of whom all European countries are jealous because of her success at sea and in colonizing.	**Lobositz, Prague,** Kollin, Hastenbeck, Gross-Jägerndorf, **Rossbach, Leuthen, Zorndorf,** Hochkirch, **Minden,** Kunersdorf, Maxen, **Quebec** (America), **Liegnitz, Torgau, Burkersdorf, Freiburg.**	**Frederick the Great, Schwerin,** Prince Charles (Lorraine), **Duke of Cumberland,** Daun (Austria), Fermor (Russia), Ferdinand (Brunswick), Maguire, Broglio, Loudon.	By the Peace of Hubertsburg (1763), Austria and Prussia territorially remain the same and America becomes English rather than French. Prussia, by the genius of Frederick, had stepped into the front rank of European nations.
American Revolutionary, 1775-1783.	**English Colonies** in **America, France,** England.	The colonies revolt against England because of oppressive taxation and infringements upon what they considered their rights of government.	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	The British colonies, by their representatives at Paris, Jay, Franklin, and Adams, made a treaty of peace by which the independence of the United States was recognized.
French Revolution, 1789-1794.	**The Revolutionists,** The Royalists, aided by the Coalition.	The destructive spirit of the 18th century, unequal taxation and division of land, the terrible public debt and deficit. The people consider the old system in state and church a system of abuses, not founded on reason.	Storm of the **Bastille,** Storm of the **Tuileries,** Massacre in Paris called the **Jail Delivery,** Reign of Terror (1793-1794), Atrocities in **Lyons,** Execution of **Girondists.**	**Lafayette,** Louis XVI., Marie Antoinette, **Danton, Marat, Robespierre.**	Feudalism was destroyed, the people being admitted to a share in the government, which was a triumph for liberalism in government.
France and the Coalitions, 1792-1815. After 1804 the Napoleonic Wars. The First Coalition, 1792-1797.	**France,** Austria, Prussia, England, Holland, Spain, The Empire, Sardinia,	French reforms frowned upon by the conservative monarchs of Europe. After the appearance of Napoleon in 1793 it was his ambition to spread throughout Europe the liberal ideas gained in the French Revolution and to make France, the head state of Europe, and himself the ruler of Europe.	**Valmy** (1792), **Jemappes,** Mainz, **Lyons. Fleurus, Kaiserslautern,** Amberg, Würzburg, **Millesimo, Mondovi, Lodi,** Siege of **Mantua,** Peace of Campo-Formio (1797).	Duke of Brunswick, **Dumouriez, Kellerman, Carnot, Jourdan,** Hoche, Coburg, **Pichegru, Moreau, Bonaparte,** Charles of Austria.	France was able to protect herself and her reforms from European greed and interference; and then Europe, in her turn, was able to protect herself from Napoleonic greed and interference, and Napoleon's dream of becoming emperor of Europe. By the treaty of Vienna, 1814-1815, the Austrian and Prussian monarchies were restored; Austria received back Venice, Milan, and the Tyrol; the German Conference and Swiss Confederation were established; the great part of Warsaw fell to Russia as the kingdom of Poland.
Bonaparte's Egyptian expedition, 1798-1799.	**France,** England, Holland, Spain.		Battle of the **Pyramids,** Battle of the Nile (naval), **Abukir.**	Nelson.	
Second Coalition, 1799-1801.	**France,** Russia, Austria, England, Portugal, Naples, Ottoman Porte.		Novi **Marengo, Hohenlinden,** Peaces of Lunéville and Amiens (1801).	**Joubert,** Suvaroff, **Napoleon,** Melas, **Moreau,** Archduke John.	
Third Coalition, 1805.	**France,** England, Russia, Austria, Sweden.		Trafalgar, **Austerlitz,** Peace of Pressburg between France and Austria.	Nelson, **Napoleon,** Alexander I., Kutusoff.	
Fourth War (with Prussia and Russia), 1806-1807.	**France,** Russia, Prussia.		**Jena** and **Auerstadt,** Eylau (indecisive), **Friedland,** Peace of Tilsit (1807).	Duke of Brunswick (Prussia).	
"Peninsular War," 1808-1814.	**France,** Great Britain in Spain and Portugal.		**Corunna, Saragossa,** Talavera, Albuera, Salamanca, Vitoria, Toulouse.	**Joseph,** Wellington, **Massena, Soult, Jourdan.**	
Fifth War (with Austria), 1809.	**France,** Austria.		Aspern and Essling, **Wagram,** Peace of Vienna (1809).	Archduke Charles, **Napoleon, Eugene.**	

Names and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
Sixth War (with Russia), 1812.	**Napoleon's army** (which included Frenchmen, Italians, Swiss, Dutch, and Poles), Russians.		**Borodino, Moshaisk,** Burning of Moscow, Retreat from Moscow.	**Napoleon, Schwarzenberg, York, Macdonald,** Barclay de Tolly.	
Great War of Liberation, 1813-1815.	**France,** The allies, including Austria.		**Gross-Gorschen, Bautzen and Wurschen,** Congress of Prague. **Dresden,** Dennewitz, Leipzig or "Battle of the Nations," Vitoria, La Rothière, Laon, Allies enter Paris. Peace of Paris and Congress of Vienna. **Ligny,** Waterloo (1815).	**Napoleon,** Frederic William III., Bernadotte. Schwarzenberg, Blücher, Alexander I., Francis I., **Ney,** Bülow, Tauenzein. **Wellington.**	
War of 1812, 1812-1814.	**United States,** Great Britain.	The impressment of American seamen.	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	The Peace at Ghent Dec. 24, 1814, ignored all questions which led to the war, but settled the important question of the northern boundary of the United States.
War of Grecian Independence, 1821-1829.	**Greece, England, Russia, France,** Turkey.	The secret society for promulgating Greek independence, called the Hetairia, considers the interregnum after the death of the hospodar of Wallachia as an opportune time to revolt.	Chios besieged and 20,000 massacred, **Thermopylae, Navarino, Missolonghi.**	**Canaris, Theodore Vladimiruko, Marco Bozzaris,** Ibrahim Pasha, Codrington (England), Byron (England).	By the treaty of Adrianople, 1829, Turkey acknowledged the independence of Greece.
The July Revolution, July 27-29, 1830.	**Parisian Revolutionists,** French government.	Three ordinances: declaring recent elections illegal; restricting suffrage to rich landowners; suspending the liberty of the press.	**Barricade fights, Hotel de Ville, Louvre.**	**La Fayette,** Marmont.	Charles X. forced to flee; a provisional government was established; and "the charter henceforth was to be a reality."
Revolution in Poland, 1830-1832.	**Poland,** Russia.	The autocratic government contrary to the constitution. Revolt of 18 students	Grochow, **Wawre, Dembe Wielski,** Ostrolenka, Warsaw.	Constantine, **Chlopicki, Radzivil,** Diebitch, **Skrzynecki, Krukowiecki,** Paskevitch.	The Organic Statute of Feb. 26, 1832, deprived Poland of its constitution and it became a Russian province with a separate administration.
Mexican, 1846-1848.	**United States,** Mexico.	The annexation of Texas, and trouble over boundary.	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	By treaty of Guadalupe Hidalgo Mexico gave up claim to Texas, about 522,955 sq. miles in New Mexico and Upper California, establishing present boundary line.
February Revolution in Paris, 1848.	**Parisian Revolutionists,** Imperialists.	Socialistic societies unite with National Guard in revolt because of government's reactionary policy.	**Barricade fights, Massacres** by laborers.	**Louis Blanc.**	Louis Philippe abdicated and the republic for the second time established.
Crimean, 1854-1856.	**Russia,** Western Powers and Turkey.	Nicholas I. of Russia covets Turkey.	**Sinope** (naval), Silistria, Alma, Sebastopol, **Balaklava,** Inkerman, **Malakhoff, Kars.**	**Paskevitch, Liprandi, Mentchikoff, Gortchakoff,** Pelissier (France), Raglan, Simpson (England).	By Peace of Paris, March 30, 1856, Russia ceded the mouth of the Danube, renounced the protectorate of Christians in Turkey, restored Kars, and promised not to establish arsenals on the Black Sea or maintain there a larger navy than Turkey. Sebastopol was restored. Thus the integrity of Turkey was maintained.
Sepoy Mutiny, 1857.	**English,** Sepoys.	Dissatisfaction among the conquered high caste of India. A rumor that English cartridges were greased with fat of pigs, an unclean animal to Mohammedans and Hindus.	Mutiny of Sepoys at Meerut, **Delhi,** Cawnpur, Siege of **Lucknow.**	**Nicholson, Havelock, Campbell,** Bahádur Sháh.	The rule of the East India Company was ended and the government of India transferred to the Crown.
Unification of Italy, 1859-1861.	**Sardinia** backed by **France** and **England. Austria,** from 1860. **Sardinia.** Two Sicilies France Papacy.	Cavour desired Sardinia to be the savior of Italy and forced a war with Austria.	**Magenta, Solferino,** Treaty of Zürich, 1859, Excommunication of king and people of Sardinia. **Palermo** revolted against Francis II. **Genoa** uprising, **Milazzo, Messina, Castelfidardo, Gaeta.**	**Cavour, Victor Emmanuel II.** (Sardinia), Francis II. (Two Sicilies), **Napoleon III.** (France), **Garibaldi, Fanti, Cialdini,** Lamoricière.	Austria's hands being tied by France and England she was compelled to give up her claims (except to Venice) and by conquest Victor Emmanuel becomes in 1861 "King of Italy." Profiting by Prussian victories in 1866, Italy comes into control of Venice and in 1871 of Rome.

Name and Dates, A. D.	Contestants.	Cause or Pretext for War.	Notable Battles and Incidents of War.	Leaders.	Results and Treaties.
American Civil War, 1861-1865.	**The Northern States,** The Southern States.	The fear of eleven Southern States, that the right to keep slaves was in jeopardy, causes them to secede from the Union with the other states, a movement not countenanced in the North.	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	(See WARS OF U. S. and DICTIONARY OF HISTORY.)	Slavery was abolished and the integrity of the Union preserved.
Austro-Prussian or Seven Weeks, 1866.	**Allies of Prussia,** including **Italy,** Allies of Austria.	The desire of the German people for greater unity found pretext in a quarrel about the North Albingian duchies.	In Bohemia: Trautenau, Münchengrätz, **Soor, Koniggratz** or **Sadowa, Prague.** In the west: **Langensalza, Aschaffenburg.** In Italy: Custozza, Lissa (naval).	**Frederick Charles** (Prussia), Von Gablentz, **Von Moltke, William I.,** Benedek, Charles (Bavaria), **Victor Emmanuel,** Albert.	By the peace of Prague, Aug. 23, 1866, the Austrian emperor consented to a reorganization of the German confederation without Austria; Austria ceded to Prussia Schleswig-Holstein, and paid a large war indemnity
Franco-Prussian, 1870-1871.	**France,** Prussia.	The desire of France to have the Rhine the western boundary of Germany; French jealousy of German growth because of the Austro-Prussian War; the election of the prince of Hohenzollern to the throne of Spain.	Wörth, Spicheren, Colombey-Nouilly, Vionville, Gravelotte and St. Privat, Siege of Metz, Strassburg, Sedan, Proclamation of Third French Republic, 1870, Siege of Paris, Rome, Orleans, Le Mans, Capitulation of Paris.	**MacMahon, DeFailly, Bazaine, Ladmirault,** Steinmetz, Frederick Charles (Mainz), Frederick William (Mannheim), William I., Von Moltke. **Napoleon III.**	By the peaces of Versailles and Frankfort on the Main, 1871, the results of the war were (1) the destruction of the military power of France; (2) the acquisition of a secure military boundary for Germany on the west; (3) the political unity of the German nation; (4) the acquisition by Germany of Alsace and Lorraine.
Turco-Russian, 1877-1878.	**Russia, Servia, Roumania,** Turkey.	A revolt in Bulgaria was bloodily suppressed so that Russia assumes the role of the protector of Christians in Turkey.	**Passage of Danube, Shipka Pass, Plevna, Storm of Kars.**	**Grand Duke Nicholas,** Suleiman Pasha, Osman Pasha, **Gurko, Grand Duke Michael, Alexander II., Radetzki, Skobeleff,** Mukhtar Pasha, **Totleben.**	By peace of San Stefano, March 3, 1878, Turkey recognized the independence of Montenegro, Servia, and Roumania: Bulgaria was to have a separate administration but remain subject to Turkey; the Porte was to introduce reforms in his remaining European possessions; Russia obtains large indemnity and part of Armenia and also Bessarabia.
Chinese-Japanese, 1894-1895.	**Japan,** China.	Japan, declaring Korea independent, objects to China's suppressing Korean insurrection.	**Yalu River** (naval), **Port Arthur, Weihaiwei, Niuchuang.**	**Ito,** Ting, **Yamagata, Oyama, Nogi.**	By treaty of Shimonoseki, April 17, 1895, China recognized the independence of Korea, ceded Formosa and the Pescadores, and paid to Japan $180,000,000 indemnity.
Spanish-American, 1898.	**United States,** Spain.	The United States interferes in the inhuman suppression by Spain of the Cuban rebellion by recognizing the independence of the people of Cuba.		By treaty of peace signed at Paris, Dec. 10, 1898, Spain retired from Cuba and ceded to the United States Porto Rico, Guam, and the Philippines, receiving $20,000,000 for the last.	
South African or Boer, 1899-1902.	**Great Britain,** Transvaal, Orange Free State.	Great Britain demands political rights for uitlanders or foreigners residing in the Transvaal.	**Siege of Ladysmith,** Colenso, Spion Kop, Vaal Krantz, Magersfontein, **Paardeberg.**	**Sir Geo. White, Buller, Methuen,** Cronje, **Gatacre, Roberts, Kitchener, French,** Botha, De Wet, Delarey.	Boers submitted in May 31, 1902, and renounced their independence. The conquered states became the crown colonies of Orange River and Transvaal.
Russo-Japanese, 1904-1905.	**Japan, Korea,** Russia.	The encroachments of Russians in Manchuria and their possession of Port Arthur arouse the Japanese.	Naval battles off **Port Arthur** and **Chemulpo, Kiu-lien-cheng, Kinchow** and **Nanshan Hill,** Vladivostok, Fengwang-cheng, Kinchow, **Ai-pien-men, Aiko River, Nanshan, Yinkow, Liaoyang,** Lone Tree Hill, **Port Arthur surrenders. Mukden, Sea of Japan** (naval).	**Togo, Kuroki,** Kuropatkin, Alexieff, Makaroff, Stoessel, Zassulitch **Oku, Nodzu, Oyamu,** Stakelberg, **Nogi,** Linievitch. **Togo,** Rozhestvensky.	By the treaty of Portsmouth, Sept. 5, 1905, by mutual concessions Japan became paramount in Korea and the Liaotung Peninsula; Manchuria was to be returned to China; Japan was to control the Chinese Eastern Railroad south of Kunshien, and own part of the island of Sakhalin. Japan secured a position as a world power.

OUTLINE OF AMERICAN WARS.

The French-English Wars in America.

MOTIVE: The struggle for supremacy in Europe, continued by colonists in America.

WAR.	DATE.	INCIDENTS.	LEADERS.* English.	LEADERS.* French.	RESULTS.
King William's War. 1689-1697.	Feb. 8, 1690	Schenectady	Colonists	Iberville	Treaty of Ryswick; each party held same territory as before. French held Quebec. "Five Nations" destroyed.
	Mar., 1690-1697	Massacres in New England	Colonists	**Frontenac**	
	April, 1690	Siege of Quebec	Phips	**Frontenac**	
	1693-1697	Attack on "Five Nations"	Indians	**Frontenac**	
Queen Anne's War. 1702-1713.	Feb. 29, 1704	Deerfield Massacre	Colonists	**Indians**	Treaty of Utrecht; France ceded to England Hudson Bay and its borders, Acadia, and Newfoundland.
	Aug. 29, 1708	Haverhill Massacre	Colonists	Indians	
	1710	Conquest of Nova Scotia	**English**	French	
King George's War. 1744-1748.	June 16, 1745	Capture of Louisburg	**Pepperell**		Treaty of Aix-la-Chapelle: Louisburg restored to France.
French and Indian War. 1754-1763.	July 4, 1754	Surrender of Fort Necessity	Washington	**Villiers**	Peace of Paris, 1763; France gave to England, Canada and all her possessions east of the Mississippi; to Spain, New Orleans and all her possessions west of the Mississippi.
	July 9, 1755	Expedition against Fort Duquesne	Braddock	**Dumas**	
	June 16, 17, 1755	Deportation of Acadians			
CAUSE: Rival claims to territory beyond the Alleghanies: formation of Ohio Company.	July 26, 1758	Capture of Louisburg	**Amherst**	Montcalm	
	Nov. 25, 1758	Capture of Fort Duquesne	**Forbes** Amherst	French	
	July 25, 26, 1759	Capture of Crown Pt. and Niagara	**Johnson**	D'Aubry	
	July 26, 1759	Ticonderoga	**Amherst**	French	This war showed the colonists
War declared 1756.	Sept. 13, 1759	Capture of Quebec	**Wolfe**	Montcalm	the need of union.

1775-1783. The Revolutionary War.

A STRUGGLE BETWEEN HOSTILE PRINCIPLES: 1763-July 4, 1776, for the rights of Englishmen; 1776-1783, for the rights of men.

CAMPAIGNS.	DATE.	BATTLES.	AMERICAN FORCES. Leaders.*	Eng'ed.	Lost.	BRITISH FORCES. Leaders.*	Eng'ed.	Lost.	RESULTS.
	1775								
For control of Boston.	Apr. 19	Lexington and Concord	Parker		93	**Smith**	1,700	273	
	June 17	Bunker Hill	Warren, Prescott	3,000	450	**Howe**	4,500	1,050	
	1776								
	Mar. 17	Dorchester Heights	**Washington**			Howe			Evacuation of Boston.
	1775								
Invasion of Canada.	May 10	Ticonderoga	**Ethan Allen**	83		Delaplace	48		Capture and dispersal of invaders.
	Nov. 12	Montreal	**Montgomery**			Carleton			
	Dec. 31	Quebec	Arnold	900	160	**Carleton**	1,200	20	Fruitless siege.
	1776								
Attack on Charlest'n.	June 28	Ft. Moultrie	**Moultrie**	400	32	Clinton	4,000	225	British driven from So. Carolina.
For control of Hudson.	Aug. 27	Long Island	Sullivan, Putnam	10,000	2,000	**Howe**	20,000	400	Americans driven across Hudson.
	Sept. 15	Harlem Heights	Washington	12,000	15	**Howe**	25,000	22	British hold New
	Oct. 28	White Plains	Washington	1,500	90	**Howe**	4,000	300	York City.
To control	Nov. 16	Ft. Washington	Magaw	3,000	2,600	**Howe**	5,000	700	
New Jersey	Dec. 25	Trenton	**Washington**	2,400	9	Rahl	1,000	1,000	Evacuation of New Jersey.
	1777								
	Jan. 3	Princeton	**Washington**	3,000	100	Mawhood	1,800	400	Americans control New York.
Second attempt to control the Hudson and divide colonies.	July 6	Ticonderoga	St. Clair	1,000	500	**Burgoyne**	8,400		
	Aug. 6	Oriskany	**Herkimer**	800	400	St. Leger	1,200		
	Aug. 16	Bennington	**Stark**	2,000	200	Baum	1,200	1,134	
	Aug. 22	Ft. Stanwix	**Arnold**	400	150	St. Leger	200	?	
	Sept. 19	Bemis Heights or Stillwater	**Lincoln**	2,500	350	Burgoyne	6,000	600	
	Oct. 7	Bemis Heights	**Gates**	8,000	350	Burgoyne	5,000	57	British surr'nder.
Attack on Philadelphia.	Oct. 17	Saratoga	**Gates, Arnold**	8,000	350	Burgoyne	6,000	5,791	Aid from France.
	Sept. 11	Brandywine	Washington	11,000	1,300	**Howe**	18,000	500	British winter in
	Oct. 4	Germantown	Washington	11,000	1,073	Howe	15,000	500	Philadelphia.
	1778								
Retreat from Philadelphia.	June 28	Monmouth	**Washington**	12,000	227	Clinton	11,000	700	British return to New York.
Indian massacres.	July 4	Wyoming	Zeb. Butler	400	400	**Butler**	1,000	222	
	Nov. 11	Cherry Valley	Zeb. Butler			**Brant**			
In the West.	July 4	Kaskaskia	**Clark**			Indians			Americans control the Northwest.
	1779								
	Feb. 14	Vincennes	**Clark**			Hamilton			
For control of the South by British.	1778								
	Dec. 29	Savannah	R. Howe	900	553	**Campbell**	2,000	26	British control all but Charleston.
	1779								
	Feb. 24	Kettle Creek	**Pickens**			Boyd			
	Oct. 9	Savannah	Lincoln	4,500		Provost	2,900		
To control Hudson.	July 15	Stony Point	**Wayne**	1,200	166	Clinton	600	36	Stopped ravages in Connecticut.
On the sea.	Sept. 23	Bon Homme Richard-Serapis	**J. Paul Jones**		49			49	
Against the Indians.	Aug. 29	Elmira	**Sullivan**		8	Johnson, Brant		12	Power of "Six Nations" broken.
	1780								
For control of South.	May 12	Charleston	Lincoln	3,700	265	**Clinton**	9,000	265	British in possession of South.
	Aug. 16	Camden	Gates	3,000	1,000	**Cornwallis**	2,000	225	
	Oct. 7	King's Mountain	**Shelby**, Sevier	900	28	Ferguson	1,100	460	
	1781								
British invasion of North Carolina.	Jan. 17	Cowpens	**Morgan**	900	70	Tarleton	1,100	320	British forced to retire towards the coast.
	Mar. 15	Guilford Court House	Greene	4,400	1,300	**Cornwallis**	2,400	258	
	April 25	Hobkirk's Hill	Greene	1,200	266	**Rawdon**	900	142	
	June 18	Ninety-Six	**Greene**	1,000	150	Cruger	550	386	Americans in control of South.
	Sept. 8	Eutaw Springs	Greene	2,000	547	Rawdon	2,800	800	
Invasion of Virginia.	Oct. 19	Siege of Yorktown	**Washington, Rochambeau De Grasse**	16,000	300	Cornwallis	8,000	550	Surrender of Cornwallis.

Final treaty of peace signed Sept. 2, 1783, secured independence in America and reform in England. The United States extended from the Atlantic to the Mississippi, from Florida to Canada.

*Names of victors in **bold face.**

1801-1805. Wars with the Barbary States. 1815-1816.

CAUSE: Continued piratical attacks upon American merchant vessels in the Mediterranean and on the Atlantic; captives sold as slaves; vast sums paid as bribes.

COUNTRY.	DATE.	VESSELS.	COMMANDERS.	RESULTS.
War with Tripoli, 1801-1805.	July, 1801	President	**Dale**	Captured Tripolitan cruiser.
	Aug. 24, 1803	Philadelphia	Bainbridge	Vessel captured; crew enslaved.
	Feb. 16, 1804	Enterprise	**Decatur**	Burned the Philadelphia.
	Aug. 3-Sept. 3, 1804	Constitution	**Preble**	Blockaded ports. Bombarded Tripoli.
With Algiers, 1815-1816.	May, 1815	Guerrière	**Decatur**	Captured Algerian vessels. Secured treaties from all the Barbary States.

Treaty with Tripoli June 3, 1805; United States paid $60,000; prisoners exchanged. Ended trouble with Tripoli.

War of 1812. The Second War of Independence.

CAUSES: Commercial injuries; impressment of seamen; Indian hostilities incited by British agents.

CAMPAIGNS.	DATES.	BATTLES.	AMERICAN FORCES.			BRITISH FORCES.			RESULTS.
			Leaders.	Eng'ed.	Loss.	Leaders.	Eng'ed.	Loss.	
	1812								
Invasion of Canada.	Aug. 15	Fort Dearborn	Heald	57		**Indians**	1,327		Captured by
	Aug. 16	Detroit	Hull	2,500	2,500	**Brock**	1,300		British and surrender to British.
On the Frontier.	Oct. 13	Queenston Heights	Van Rensselaer	1,200	990	**Brock**		130	Americans lose Michigan Territory; British and Indian alliance broken; Americans regained territory and secured some of upper Canada.
	1813								
In the Northwest.	Jan. 22	River Raisin	Winchester	800	400	**Proctor**	1,500		
	May 5	Fort Meigs	**Harrison**	1,200	800	Proctor	2,000		
To recapture Detroit	May 29	Sackett's Harbor	**Brown**	1,000	167	Prevost	1,200	261	
	Sept. 10	Battle of Lake Erie	**Perry**	9 ves. 54 guns	60	Barclay	6 ves. 63 guns	527	
	Oct. 5	The Thames	**Harrison**	5,000	45	Proctor	2,000	644	
	1814								
On the Niagara Frontier.	July 5	Chippewa	**Brown**	1,900	328	Riall	2,100	200	Americans retreated.
	July 25	Lundy's Lane	**Brown**	2,600	860	Drummond	4,500	878	
	Aug. 15	Fort Erie	**Ripley**	2,500	510	Drummond	5,000	905	Retreat of British.
	Sept. 11	Lake Champlain	**McDonough**	14 ves. 86 guns		Downie	16 ves. 92 guns		
	Sept. 11	Plattsburg	**Macomb**	3,000	110	Prevost	12,000	200	
Capture Washington.	Aug. 24	Bladensburg	Winder	3,500	76	**Ross**	5,000	500	Abandonment of Washington.
	Sept. 13	Fort McHenry	**Armistead**	3,000	28	Ross	4,000	2,100	
To secure New Orleans.	1815								
	Jan. 8	New Orleans	**Jackson**	5,000	21	Pakenham	20,000	2,600	The British withdraw.

Treaty of Ghent concluded Dec. 24, 1814; settled no question causing the war, but gave the U. S. independence of Europe.

ON THE SEA.	DATES.	VESSELS.		COMMANDERS.				RESULTS.
		American.	English.	American.	Loss.	English.	Loss.	
Off Newfoundland.	Aug. 13, 1812	Essex	Alert	**Porter**		Langharne		
Off Massachusetts Bay.	Aug. 19	Constitution	Guerrière	**Hull**	7	Dacres	78	British blockaded Atlantic coast; privateering increased.
Off North Carolina.	Oct. 18	Wasp	Frolic	**Jones**	5	Whingates	62	
Off Canary Islands.	Oct. 25	United States	Macedonian	**Decatur**	5	Carden	94	
Off San Salvador.	Dec. 29	Constitution	Java	**Bainbridge**	35	Lambert	161	
Off Demerara.	Feb. 24, 1813	Hornet	Peacock	**Lawrence**	5	Peake	38	
Off Massachusetts coast.	June 1	Chesapeake	Shannon	Lawrence	146	**Broke**	83	
In British Channel.	Aug. 14	Argus	Pelican	Allen	23	**Maples**	7	
Off coast of Maine.	Sept. 5	Enterprise	Boxer	**Burrows**	2	Blyth	21	
At Valparaiso	Mar. 28, 1814	Essex	Phœbe, Cherub	Porter	125	**Hilgar**, **Tucker**	15	Respect for American seamen fully established.
In British Channel.	June 28	Wasp	Reindeer	**Blakeley**	11	Manney	67	
Off Africa.	Sept. 1	Wasp	Avon	**Blakeley**	3	Arbuthnot	42	
Off Madeira.	Feb. 20, 1815	Constitution	Cyane, Levant	**Stewart**	14	Falcon, Douglas	77	

The Mexican War. 1846-1847.

CAUSES: Admission of Texas; dispute over Texan boundary; greed for territory; extension of slavery area.

CAMPAIGNS.	DATES.	BATTLES.	AMERICAN FORCES.			MEXICAN FORCES.			RESULTS.
			Leaders.	Eng'ed.	Loss.	Leaders.	Eng'ed.	Loss.	
	1846								
To hold the Rio Gr'nde.	May 8	Palo Alto	**Taylor**	2,300	46	Arista	6,000	229	Declaration of war.
	May 9	Resaca de la Palma	**Taylor**	2,000	122	Arista	5,000	388	
Invasion of Mexico and New Mexico.	Aug. 18	Santa Fé	**Kearny**						
	Sept. 24	Monterey	**Taylor**	6,600		Ampudia	10,000		
	1847								
	Feb. 23	Buena Vista	**Taylor**	4,700	723	Santa Anna	17,000	1,809	Americans invariably successful.
Vera Cruz to City of Mexico.	Apr. 18	Cerro Gordo	**Scott**	8,500	431	Santa Anna	12,000	600	
	Aug. 20	Contreras	**Twiggs**	4,000	60	Valencia	7,000	2,900	
	Aug. 20	Churubusco	**Pillow**	8,000	1,000	SantaAnna	25,000	4,000	City of Mexico surrendered Sept. 14, 1847.
	Sept. 8	Molino del Rey	**Worth**	3,500	899	Santa Anna	14,000	3,000	
	Sept. 13	Chapultepec	**Pillow**	7,200	787	Bravo	25,000	3,000	

Treaty of Guadalupe Hidalgo, Feb. 2, 1848. The United States gained all territory north of Rio Grande and Gila rivers; Mexico was paid more than $18,000,000.

1861-1865. The Civil War.

CAUSES: Sectional differences between the North and South; in interpretation of Constitution; in systems of labor; in industries; and a want of intercourse between the people.

CAMPAIGNS.	DATES.	BATTLES.	UNION FORCES.			CONFEDERATE FORCES.			RESULTS.
			Leaders.	Eng'ed.	Loss.	Leaders.	Eng'ed.	Loss.	
To secure seceded and doubtful states.	April 12, 1861	Fort Sumter	Anderson	80	5	**Beauregard**	7,000	4	Call for troops.
	June 10, "	Big Bethel, Va	Pierce	3,000	68	**Magruder**	2,200	5	Seceded states held by Confederates; doubtful states by Federals.
	June 17, "	Boonville, Mo	**Lyon**	1,500	56	Marmaduke	2,000	8-150	
	July 11, "	Rich Mountain, W. Va	**Rosecrans**	7,000	46	Pegram	5,000	440	
	July 21, "	1st Bull Run (Manassas)	McDowell	18,000	2,708	**Beauregard**	27,000	1,752	
	Aug. 10, "	Wilson's Creek, Mo	Lyon	5,500	1,235	**McCulloch**	12,000	1,095	
	Sept. 10, "	Carnifex Ferry, W. Va	**Rosecrans**	4,500	118	Floyd	5,000		Federal forces driven back to Washington.
	Oct. 21, "	Ball's Bluff, Va	Baker	2,100	944	**Evans**	5,000	302	
	Nov. 7, "	Belmont, Mo	**Grant**	2,850	485	Polk	7,000	642	
To open the Mississippi.	Feb. 6, 1862	Fort Henry	**Grant, Foote**		62	Tilghman		66 g'ns	Confederates driven out of western Kentucky.
	Feb. 16, "	Fort Donelson	**Grant, Foote**	15,000	2,331	Buckner	20,000	15,067	
	Mar. 5, 6, "	Pea Ridge	**Curtis**	12,000	1,312	Van Dorn	35,000	5,200	Mississippi opened south to Tennessee and northern Mississippi.
	Mar. 13, "	New Madrid	**Pope**	20,000	557	Gantt, Stuart	9,000	500	
	Apr. 6, 7, "	Shiloh or Pittsburg Ldg.	**Grant**	65,000	13,573	A.S.Johnston	45,000	14,687	
			Buell			Beauregard			
	April 7, "	Island No. 10	**Foote, Pope**	12,000	51	Makall	7,000	7,000	
			Farragut	46 ves.		Hollins		4 g'bts	
	April 24, "	New Orleans	**Butler**	14,000	205	Mitchell	10,000	63	Mississippi opened north to Port Hudson.
	Sept. 19, "	Iuka	**Rosecrans**	17,000	790	Price	23,000	1,638	
	Oct. 3-5, "	Corinth	**Rosecrans**	19,000	2,359	Van Dorn	38,000	4,718	
Peninsular:	May 5, "	Williamsburg	Hooker		2,200	**Longstreet**	25,000	2,000	
Federals.	May 24, "	Winchester	Banks	5,000	904	**T. J. Jackson**	18,000	400	
To capture Richmond.	May 31, "	Seven Pines—Fair Oaks.	McClellan	11,000	5,739	**J.E.Johnston**	35,000	6,697	
Confeds.,	June 1, "								
To capture	June 26-30, "	Seven Days' Battles	McClellan	95,000	15,249	**Lee**	91,000	20,450	Federals successful in West; Confederates, in East.
Wash'tn.	July 1, "	Malvern Hill	**McClellan**	80,000	1,000	Hill	80,000	3,000	
	Aug. 9, "	Cedar Mountain	Pope	7,000	1,400	**T. J. Jackson**	20,000	2,500	
	Aug. 30, "	2d Bull Run, Va	Pope	32,000	14,500	**Lee**	25,000	9,500	
Lee's invasion of the North.	Sept. 14, "	South Mountain	**Franklin**	30,000	2,325	Lee	30,000	4,343	
	Sept. 16, "	Antietam, Md	**McClellan**	70,164	12,469	Lee	40,000	13,533	Bloodiest battle of war.
	Dec. 13, "	Fredericksburg, Va	Burnside	100,000	12,841	**Lee**	90,000	4,330	
Kentucky.	Oct. 8, "	Perryville, Ky	McCook	13,000	4,055	**Bragg**	33,000	4,500	Confederates capture stores.
Blockade.	Mar. 9, "	Monitor-Merrimac	**Worden**		1	Buchanan		2	
In East Tennessee.	Jan. 3, 1863	Murfreesboro, Tenn	**Rosecrans**	43,000	10,309	Bragg	62,000	18,060	
	Sept. 19-21, "	Chickamauga, Ga	Rosecrans	55,000	15,851	**Bragg**	70,000	17,000	
	Nov. 23, "	Chattanooga, Tenn	**Grant**	80,000	5,815	Bragg	45,000	6,687	
	" 24, "	Lookout Mountain	**Hooker**	10,000	4,000	Bragg		10,000	Confederates driven out of Tennessee.
	" 25, "	Missionary Ridge	**Sherman**			Bragg			
	Nov. 17-Dec. 5	Siege of Knoxville	**Burnside**	20,000	900	Longstreet	20,000	2,000	
Blockade.	April 27, 1863	Siege of Charleston	Dupont						
			Hunter		21	**Beauregard**	45,000	3	Unsuccessful.
To open the Mississippi.	April 16, "	Bombardment of Vicksburg	**Farragut**	15 ves.	1 gunboat	Pemberton			
			Porter						
	May 18 to July 4, "	Siege of Vicksburg	**Grant**	34,000	3,712	Pemberton	60,000		
	May 27 to July 8, "	Siege of Port Hudson	**Farragut**	15 ves.	700	Gardner	6,000	6,000	Mississippi opened.
			Banks						
Adv'nce on Richmond.	May 1, "	Chancellorsville	Hooker	90,000	17,197	**Lee**	90,000	13,019	Turning point of war.
	June 13, "	Winchester, Va	**Milroy**	6,500	1,800	Ewell	18,000	850	
Lee's 2d invasion.	July 1-3, "	Gettysburg, Penn	**Meade**	90,000	23,003	Lee	80,000	20,451	Greatest battle.
	May 5-7, 1864	Wilderness	Grant, Meade	150,000	15,387	Lee	130,000	11,400	Largest Union army.
	8-18, "	Spottsylvania	**Grant, Meade**	135,000	20,000	Lee	105,000	12,000	
	June 1-3, "	Cold Harbor	Grant, Meade	125,000	9,948	**Lee**	100,000	8,500	Confeds. retreat toward Richmond.
	June 15-19 "	Siege of Petersb'g begun	**Grant, Meade**	140,000	15,000	Lee	100,000	10,000	
Adv'nce on Wash'gton.	Sept. 19, "	Winchester, Va	**Sheridan**	40,000	3,500	Early	15,000	3,611	Federals control Shenandoah val.; ends adv. on Wash.
	Sept. 22, "	Fisher's Hill, Va	**Sheridan**	33,000		Early	11,500		
	Oct. 19, "	Cedar Creek	**Sheridan**	30,000	5,300	Early	30,000	4,100	
Sherman's "March to the Sea."	May 15, "	Resaca, Ga	**Sherman**	100,000	1,000	Johnston	55,000	1,000	
	May 28, "	Dallas, Ga	Sherman	40,000	2,400	Longstreet	20,000	3,000	
	June 27, "	Kenesaw Mountain, Ga.	Sherman	100,000	3,000	**Johnston**	60,000	630	
	July 22-Sep. 2	Siege of Atlanta	**Sherman**	100,000	3,641	Hood	40,000	8,500	City surrenders.
Counter attack, Tenn.	Nov. 30, 1864	Franklin	**Schofield**	25,000	1,222	Hood	50,000	8,000	Hood's army destroyed.
	Dec. 15, 16, "	Nashville	**Thomas**	50,000	3,000	Hood	44,000	5,000	
	Dec. 25, "	Savannah	**Sherman**	60,000	150	Hardee	15,000	380	Cut Confederacy in two.
In the West.	Sept. 27, "	Pilot Knob	**Ewing**		600	Price	20,000	1,500	Last military operations in West.
	Oct. 22, "	Independence	**Ewing**	8,000		Price	20,000		
Naval operations.	June 19, "	Alabama-Kearsarge	**Winslow**			Semmes			Tro'ble with Eng.
	Aug. 5, "	Mobile Bay	**Granger**	5,000	335	Page	2,500	26	Opening of coast.
			Farragut	18 ves.		Buchanan			
	Jan. 15, 1865	Fort Fisher, N. C	**Terry**	9,200	955	Hoke	2,200	2,083	
			Porter	73 ves.					
Sherman's advance North.	Feb 17, "	Columbia occupied	**Sherman**	75,000					Cut off retreat from Richmond.
	Feb. 18, "	Charleston occupied	**Sherman**	75,000	100	Beauregard	35,000	60	
			Gillmore			Hardee			
	Mar. 14, "	Kinston, N. C	**Cox**	12,000	500	Bragg	12,000	775	
	Mar. 16, "	Averysboro, N. C	**Slocum**	60,000	678	Hardee	20,000	865	
	Mar. 19, "	Bentonsville, N. C	**Sherman**	65,000	2,300	J.E.Johnston	45,000	2,343	
Operations in Virginia about Richmond.	Feb. 27, "	Waynesboro, Va	**Sheridan**	8,000	69	Early	1,800	1,352	
	Mar. 25, "	Fort Steedman	**Meade**	40,000	1,646	Gordon	67,000	5,000	
	April 1, "	Five Forks, Va	**Sheridan**	100,000	7,000	Lee	50,000	15,000	
	" 2, "	Petersburg taken	**Grant**	70,000	8,000	Lee	42,000	9,000	
	" 6, "	Sailor's Creek	**Sheridan**	80,000	1,170	Lee	30,000	10,000	
	" 9, "	Appomattox	**Grant**	100,000	500	Lee	27,000	26,000	Lee surrenders.
	" 26, "	At Raleigh	**Sherman**	85,000		Johnston	45,000	30,000	Johnston surrenders; end of war.

RESULTS: Slavery abolished forever; the Union preserved; nearly 1,000,000 men killed; cost nearly $8,000,000,000.

1898. Spanish-American War.

Cause: Sympathy for the Cubans; interference with United States trade interests in Cuba; destruction of the Maine, demand by United States that Spain give up Cuba.

Campaigns.	Dates.	Battles.	American Forces.			Spanish Forces.			Results.
			Leaders.	Eng'ed.	Loss.	Leaders.	Eng'ed.	Loss.	
Blockade of Cuban ports.	1898 May 1	Manila Bay	**Dewey**	9 ves.		Montojo	10 ves.	616	Heavy loss to Spanish.
	July 3	Santiago de Cuba	**Sampson Schley**	7 ves.	12	Cervera	6 ves.	2,050	Ships destroyed; men captured.
Land expedition against Santiago.	July 1-3	El Caney	**Lawton**	4,500	240	Toral	12,000	1,401	Surrender of Santiago July 17, 23,-500 men.
		San Juan Hill	**Garcia**	5,000					
	July 25 to Aug. 12	Porto Rico	**Miles**	17,000	3				Island was surrendered.
	Aug. 13	Manila	**Merritt**	20,000	17		11,000	All.	City surrendered; war ended.

Result: Spain gave up Cuba, ceded Porto Rico, Guam, and the Philippines to the United States, for which $20,000,000 was paid. United all parts of the country. Trouble with Philippine insurrectionists continued till July, 1899.

Indian Wars.

Cause: Dissatisfaction with white men's occupation of land.

War.	Dates.	Battles.	Leaders.		Results.
			Americans.	Indians.	
Pequot.	1637	Stonington, Conn.	**Mason**		Destruction of Pequot tribe.
Algonquin.	1643	in New Netherlands			Nearly destroyed New Amsterdam.
King Philip's.	1675-1678	In New England		King Philip	600 colonists killed; 13 towns destroyed.
Five Nations with French.	1689	In Canada	Frontenac		Indians finally driven farther westward.
	1690	Schenectady, N. Y.	**Frontenac**		
	1690-1697	In New England			
Tuscarora.	1711-1715	In North Carolina			Tribe nearly destroyed.
Pontiac's.	1763	In Northwest		**Pontiac**	War stopped temporarily.
Tories and Indians.	July, 1778	Wyoming Valley, Pa.	**Sullivan**		Destroyed Six Nations.
For control of western land.	1790	Fort Wayne	Gen. Harmar		
	1791	Wabash	St. Clair		Indians finally moved farther west.
	1794	Toledo	**Wayne**		
Tecumseh and British.	1811	Tippecanoe	**Harrison**	"The Prophet"	Ended union of British and Indians.
	1813	Of the Thames	**Harrison**	Tecumseh	Tecumseh killed.
Creek.	1814	Horseshoe Bend, Ala.	**Jackson**	Red Eagle	Creeks moved west.
First Seminole.	1816-1818	Pensacola, Fla.	**Jackson**	Osceola	Stopped trouble temporarily.
Black Hawk.	1832	Bad Axe River	**Dodge**	Black Hawk	
Second Seminole.	1835-1843	In Florida	Jessup	Osceola	Capture of Osceola.
Sioux.	1862	Minnesota, Iowa	Sibley		Sioux expelled from Minnesota.
Modoc.	1872-1873	Lost River	**Canby, Davis**	Captain Jack	Indians returned to reservations.
Sioux.	1876	Little Big Horn	Custer	**Sitting Bull**	Massacre of Custer's forces.
Sioux.	1890	Wounded Knee	**Miles**	Sitting Bull	Ended trouble.

Canadian Wars.

Wars.	Dates.	Incidents.	Leaders.		Results.
French Colonists with Iroquois, 1609-1624.	1609	Crown Point	**Champlain**		Created hostility lasting 150 years.
	1610	Richelieu River	**Champlain**		
	1613	St. Saueur	**Argal**		
	1613	Port Royal	**Argal**		
English with French. March, 1627-April, 1629.	1628	Port Royal	**Kirke**		Canada, Cape Breton, and Acadia restored to France, 1632.
	1628	Gulf of St. Lawrence	**Kirke**	Roquemont	
	1629	Quebec	**Kirke**	Champlain	
	1629	Louisburg		**Daniel**	
French Colonists with Iroquois. 1633-1645. 1652-1654. 1661-1666.	1644	Montreal	**Maisonneuve**		Extermination of Hurons. Destruction of mission.
	1645	Fort La Tour	**Charnisay**		
	1652	Three Rivers	Duplessis	**Indians**	
	1652	Montreal	**Classe**		
	1654	Port Royal	**Sedgwick**		
	1660	Long Sault	Doulac	**Indians**	Whole garrison destroyed.
	1666	Mohawk Valley	**De Courcelles**		Stopped trouble for a time.
1687-1700.	1687	Seneca Country	**Denonville**		In 1701, treaty with Iroquois at Montreal ended hostility.
	1690	Schenectady	**Frontenac**		
	1696	Lake Onondaga	**Frontenac**		

TREATIES OF THE UNITED STATES

Treaties.	Dates.	Parties.	Results.
Treaty of Alliance	1778	France	Aid secured in the Revolutionary War.
Treaty of Paris	1783	Great Britain	Independence of the Colonies acknowledged.
Treaty with Algiers	1785	Algiers	Bribes and annual tribute paid, totaling $1,000,000.
Treaty with Morocco	1787	Morocco	Piratical attacks on ships temporarily stopped.
Jay's Treaty	1794	Great Britain	Settled questions of boundary, commerce, and fisheries.
Treaty with France	1800	France	Spoliation claims adjusted.
Treaty with France	1803	France	Louisiana ceded to the United States.
Treaty with Tripoli	1805	Tripoli	No further tribute exacted; American shipping free.
Treaty of Ghent	1814	Great Britain	Interferences with trade ended.
Treaty with Morocco	1815	Morocco	Trouble with Barbary States ended.
Treaty with England	1818	England	Fishery rights off Newfoundland secured.
Treaty with Spain	1819	Spain	Secured Florida; boundary of Louisiana settled.
Treaty with Russia	1825	Russia	Seal fishing rights in Bering Sea,
Ashburton Treaty	1842	Great Britain	Northeastern boundary of United States defined.
Oregon Treaty	1846	Great Britain	Oregon boundary settled.
Treaty of Guadalupe Hidalgo	1848	Mexico	Fixed boundary between Mexico and United States.
Clayton-Bulwer	1850	Great Britain	Equal rights in proposed Nicaraguan canal territory.
Japanese Treaty	1854	Japan	Japan opened to trade.
Reciprocity Treaty	1854	Canada	Reciprocity in trade, fisheries extended, navigation of lakes.
Chinese Treaty	1858	China	Amity and commercial intercourse.
Alaskan Treaty	1867	Russia	All claims of Russia on North America and islands transferred to the United States.
Burlingame Treaty	1868	China	Fixed principles of intercourse, naturalization, representation.
Treaty of Washington	1871	Great Britain	"Alabama Claims" adjusted; reciprocity.
Bering Sea Treaty	1892	Great Britain	Extent, time, and manner of seal fishing established.
Sealing Treaty	1896	Great Britain	All claims in Bering seal fishing arbitrated.
Japan-Russian Treaty	1897	Japan Russia	Suspension of pelagic sealing.
Hawaiian Treaty	1897	Hawaii	Annexation of territory of Hawaii.
Indian Treaty	1897	Five Civilized Nations.	Lands purchased, citizenship allowed.
Arbitration Treaty	1897	Great Britain	Future settlement of all differences by arbitration.
Paris Peace Treaty	1899	Spain	Cuba, Porto Rico, other Spanish islands of the West Indies, the Philippines, and Guam ceded to the United States.
Hay-Pauncefote Treaty	1901	Great Britain	Abrogated Clayton-Bulwer treaty.

TREATIES OF CANADA.

Treaties.	Dates.	Parties.	Results.
Treaty of Susa	1629	England—France	Quebec and New France given to England.
Treaty of St. Germain-en-Laye	1632	England—France	Canada and Acadia restored to France.
Treaty of Three Rivers	1645	French—Indians	Peace with the Iroquois.
Treaty of Quebec	1665	French—Indians	Peace with the Iroquois.
Treaty of Breda	1667	England—France	Acadia again restored to France.
Treaty of Neutrality	1686	England—France	Neutrality of Colonies in event of war in Europe.
Treaty of Ryswick	1697	England—France	Restoration of places taken in King William's War.
Treaty of Montreal	1701	French—Indians	General peace with the Indians.
Treaty of Paris	1712	England—France	Four months' truce.
Treaty of Utrecht	1713	England—France	France ceded Hudson Bay, Acadia, and Newfoundland to England,
Treaty of Aix-la-Chapelle	1748	England—France	Cape Breton restored to France.
Treaty of Paris	1763	England—France	Canada, and other possessions east of the Mississippi, ceded to England.
Treaty of Oswego	1766	Colonists—Indians	Peace with Pontiac.
Treaty of Paris	1783	England—United States	Boundary between United States and Canada; fisheries.
Jay's Treaty	1794	England—United States	Settled questions of boundary, commerce, fisheries.
Treaty of Ghent	1814	England—United States	Interference with trade ended.
Treaty of London	1818	England—United States	Fishery rights secured.
Ashburton Treaty	1842	England—United States	Southeastern boundary of Canada defined.
Oregon Treaty	1846	England—United States	Boundary of Oregon settled.
Reciprocity Treaty	1854	Canada—United States	Reciprocity in trade, fisheries extended, navigation of lakes.
Treaty of Washington	1871	England—United States	Alabama claims adjusted; reciprocity.
Fishery Treaty	1888	Canada—United States	Fishery award.
Arbitration Treaty	1897	England—United States	Future settlement of all differences by arbitration.

ARBITRATION TREATIES.—The United States Senate, Sixtieth Congress, ratified 12 arbitration conventions: Denmark, France, Great Britain, Italy, Japan, Mexico, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland; and treaties as follows: China, 1908; Peru, 1908; Paraguay, 1909.

RECIPROCITY TREATIES.—Additional reciprocity treaties have been made with the United States: Costa Rica, 1852; Argentine Republic, 1855; Paraguay, 1860; Liberia, 1863; Bolivia, 1863; Haiti, 1865; Servia, 1882; Japan, 1895; Cuba, 1903; China, 1904.

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BOOK III.

GOVERNMENT.

GOVERNMENT.
Mural Painting in the Congressional Library, Washington.
BY ELIHU VEDDER.

HISTORY OF THE DEVELOPMENT OF GOVERNMENTS: FAMILY, PATRIARCHAL, TRIBES, CLANS, VILLAGE COMMUNITIES. FEUDALISM, DEMOCRACY, CONSTITUTIONAL MONARCHY, REPUBLIC. ADMINISTRATION OF THE COUNTRIES OF THE WORLD. UNITED STATES GOVERNMENT AND DEPARTMENTS; FEDERAL, STATE, LOCAL, AND MUNICIPAL GOVERNMENT; SUFFRAGE, POLITICAL PARTIES, ARMY AND NAVY, IMMIGRATION, INDIAN AFFAIRS. BRITISH EMPIRE. DICTIONARY OF RULERS, STATESMEN, AND POLITICAL EVENTS.

HISTORY OF GOVERNMENT.

Family and Patriarchal Forms.—The earliest known form of government which has come down from prehistoric times is the family or social unit. The Semitic family is patriarchal and polygamous; the Aryan family is monogamic.

Aryan Family.—In the Aryan family, such as was to be found in India, the family lived separately and possessed rights. The great idea was reverence of ancestors. Every home had a sacred fire, fed by certain kinds of wood, and never allowed to go out. This burned to the ancestors represented by Agni, just as in later days it burned to Vesta in Rome. The ancestral dead were buried near the home and reverenced as they are to-day in China. A woman, on marriage, left her home, her gods, and her ancestors, and assumed the gods, the ancestors, and the home of her husband. The daughter was not equal to the son, for upon him devolved the sacred duties of continuing the line and of keeping up the ever-burning fire.

Semitic Family.—Very early the Semites evolved the idea of obedience to one head, the patriarch. Members of the family knew very little personal liberty. The wives and children were practically slaves. Service and obedience were all they knew. Love was strongly marked, but it ranked second to the great idea of obedience. Discipline was severe and unbending. Land and possessions were chiefly held by families and not by individuals.

Greek Family.—From Homeric times family life in Greece was marked by the tenderest feelings, highest ideals, and most marked dignity. The love of Penelope for Ulysses, the tender and affectionate parting of Hector and Andromache, the heroism of Alcestis, the filial piety of Antigone, the majesty and grandeur of Polyxena, the sweet, modest love of Nausicaa, are, as Lecky says, "pictures of perennial beauty, which Rome and Christendom, chivalry and modern civilization, have neither eclipsed nor surpassed." Still, women were servants and performed the household duties, brought water, and ground flour. Even in the bright days in Athens, woman did not share the intellectual life of her husband.

Tribal Government.—Very early, as the family grew, the bounds of kinship were extended to embrace all distantly related members

for certain purposes, chiefly for protection. The chief was the eldest and governing member of the largest or most powerful family. Gradually other unrelated members were associated and a sort of social organization based upon real or assumed consanguinity grew up with military functions. The chief difference between a clan and a tribe appears to have been based upon the legal or juristic duties of the clan, and the military functions of the tribe. The clan settled its internal disputes; while the tribe, an aggregation of clans, settled differences with the outside world.

Village Communities.—The tribal system gradually changed into the village community, which was a settled agricultural form in place of the nomadic, pastoral form of tribal life. Village community government marks the change from pastoral or tribal to agricultural life and occupation. The tribe was divided into small groups of tillers of the arable land, spread over a moderately sized area, and governed by an overlord to whom they paid tribute.

Feudalism.—This form of government really gave shape to society during the greater part of the Middle Ages. After the Romans lost the world-power and the Germans invaded the neighboring countries, feudal government gradually appeared and endured until modern times in some form or other. The growth and the decline of feudal institutions were each gradual processes, and they did not appear instantly nor disappear suddenly. Very early in the feudal development it became customary for men of low rank and slight power to associate themselves with powerful men. The association was called *commendation*, and was performed by an oath of fealty and service. The subordinate was then a *vassal* or *man;* the superior was a *suzerain* or *lord;* and the ceremony was known as *homage and fealty*. This subordination became general, and often involved every one in a community, even kings becoming vassals of more powerful kings and suzerains.

The *fief*, *fee*, or *feud* was the foundation of the whole system. A *fief* was a piece of land held by a tenant from his lord without rent, but in exchange for certain feudal services. A ceremony called investiture attended the granting and acceptance of the land, when the tenant acknowledged his dependency and the lord gave his protection. The chief service tendered to lords by tenants was that of military service of himself and men for a certain period; and so general was this mode that the feudal system is often called military tenure.

Court service was a certain attendance at courts which the lord might exact. The lord claimed a guardianship or *wardship* over minor heirs of a deceased tenant, who were to be provided for and educated. The lord was also empowered to control the marriage of heirs, heiresses, and widows of deceased tenants. All of these services might be evaded by the payment of a fee. Cases in which fees were due to the lord were: a *relief* payable to the lord by an heir upon receipt of his property; an *aid* to defray the expenses of knighting the eldest son of the lord; of the marriage of the lord's daughter; and for his ransom in case of captivity. When there was no heir the land might revert to the king by an *escheat*, or, in cases of failure to render feudal service, by *forfeiture*.

In feudal society were to be found the nobles, who did the fighting, the clergy, and those who did the work. Among the nobles the titles of duke, marquis, and count were enjoyed by leaders who placed large forces in the field. Knights and barons ranked below these, and were, in turn, attended by squires. The peasants who worked upon the *manor*, as the lord's estate was called, were classed as *freemen* and *serfs*. The manor consisted of the *demesne* upon which the house was built, and the *outland*, held by the tenants, who dwelt in the village and who were nearly all *villeins*. The tenure of this land by the tenants was by *socage*, which involved the duty of performing a fixed number of days' work upon the farm, or of contributing food to the lord's table. When military service was rendered it was known as *knight service*. The divisions of the manors were *farms*. Free tenants were known as *franklins*, and ranked higher than the villeins or serfs, while the lower classes of serfs were the property of the master.

Democracy.—By the growth of democracy is meant the admission of the people to a larger share in administering the affairs of the country. It does not specify any particular form of government, for there may be a larger share of voice in public affairs allowed to the subjects in a constitutional monarchy than in a republic; and even under absolute monarchy and despotism there are occasions when the popular voice is unmistakably heard.

The democratic form of government was seen in Athens, where it reached a high stage of development in the way of free institutions and individual growth. Solon's reforms from 594 B. C. onward were the beginnings of democracy, which were furthered by Pisistratus, Cleisthenes, Themistocles, Ephialtes, and Pericles.

The struggles in Rome during its early period between the patricians or aristocrats, and the plebeians or democrats, mark the steady advance of democratic ideas and the recognition of the people in affairs of state. The expulsion of the kings in 509 B. C. and the adoption of the consular form of government, the agrarian laws and reforms, the establishment of the *comitia tributa*, the more general use of the word *populus* in affairs, the drawing up of the Twelve Tables (452 B. C.), and the overthrow of the decemviri (449 B. C.) mark the earliest advances of democracy in Rome. The grand attacks by plebeians upon the aristocratic forces during the following hundred years brought about the complete emancipation of the plebeians from all social and political disabilities. The Lex Canuleia (445 B. C.), which rendered valid the marriage of a plebeian and patrician; the opening of the office of military tribune to the plebs (445 B. C.); of the quæstorship (421 B. C.); of the dictatorship (356 B. C.); of the censorship (351 B. C.); of the prætorship (337 B. C.); and of the pontifical and augurial colleges (300 B. C.), are the chief events in this great struggle. While it may with great truth be said that this extension of privilege increased the power of the rich plebeians, and left the masses in little better condition socially, yet the growth of the democratic principle and the humbling of the aristocratic forces were most

evident through these reforms. Inadequate as remedies for the dissensions between classes as were the several agrarian laws and Licinian rogations, nevertheless the condition of the plebeian farmers and middle classes was greatly improved thereby. The extension of Roman power by the defeat of Pyrrhus and the subjugation of all Italy brought about the threefold division of Roman subjects into: (1) *Cives Romani*, or Roman citizens with the fullest privileges; (2) *Nomen Latinum*, without the Roman franchise; and (3) *Socii* or allies, with privileges greatly varying in different localities. But with this military aggrandizement passed the powers of the lower classes, and there came in the growing power of a military oligarchy which subjected the lower classes to a condition of suffering and despotism which was not improved by the temporary successes of the Gracchi. Nor were these conditions improved by the wild confusion in Rome during the struggles between Marius and Sulla, when the aristocratic forces under Sulla triumphed in the name of order, and sought to rebuild from the rottenness of Roman society a political and social structure that might endure. But with the Catiline conspiracy, the triumvirate of Crassus, Pompey, and Cæsar (60 B. C.), the lawless and bloody tribunates of Claudius and Milo (58-57 B. C.), followed by the second triumvirate composed of Antonius, Lepidus, and Octavianus, the way was paved for the establishment of the Roman Empire under Augustus (29 B. C.), when the political life of the Republic was ended.

In the Dark and Middle Ages, the dominant feudal system admitted of no development or growth of democratic power in Europe. In the succeeding years there were in all countries spasmodic protests by rebellion of the people against injustice and tyranny; and these mark the desires of the people which led to the later organized efforts that brought about the needed reforms.

The most important of these was the wresting from King John at Runnymede, in 1215, those concessions and recognitions which have been called Magna Charta, the corner stone of English liberty. The establishment of parliament by Edward III. (1295), and the gradual extension of privileges by a number of acts, small in themselves but important in the aggregate, mark the track of the evolution of the principle, subject at times to checks and interruptions. The erection of the Commonwealth in England under Oliver Cromwell attacked the principle under which monarchs and despots held their power—the control of the standing army. So long as rulers were surrounded by armed guards who, from incentives of loyalty, or, more frequently, from mercenary motives, were ready to do the sovereign's bidding, there was every means at their disposal for suppression of the people. Cromwell's demand that Charles I. give up the command of the army, and the king's reply, "No, not for an hour," marked the power of the army as a safeguard of the tyrant and as a menace to liberty. Yet it may be said that the army was the force which Cromwell used to awe the royalists into obedience to his laws. With the restoration of the monarchy in the person of Charles II. came an apparent return to freedom from the austere morality of the Commonwealth and the undoing of the reforms of that time. But the true spirit of the people is seen in the adoption of the principle of cabinet government in England after the accession of William and Mary (1689). The king's ministers were now responsible to the people for royal acts, and, though the carrying out of the principle during a few years after its inception was crude and inefficient, the period is marked by events which led to a beneficent extension of popular control. Not the least of these was the establishment of the freedom of the press (1694), the extension of the franchise, and the adoption of measures of responsible government.

The great protest in France against the tyranny of the aristocrats, the French Revolution, appalled the world with the severity of its measures and the intensity of its power. In it the popular voice was heard, not alone demanding redress of its wrongs, but the right to redress its own wrongs. Following as it did the determination of the American colonists to adapt their government to meet the conditions of the New World, it intensified the object lesson in social economy which subsequent events were unable to obliterate. These, with the rebellion in Poland, magnificent in ideals and in effort but lamentable in results; the erection of the German Empire; the founding of the French Republic; and the unification of Italy, are among the salient features which mark the path of democratic growth and influence.

Monarchy.—This form of government covers nearly the whole of Europe, Asia, Africa, and half of North America. It may be divided into two kinds: that in which the power has been transferred wholly or in part to the body of the people, which form is called a limited monarchy; and that in which the sovereign control is vested in the hands of the monarch, which is called absolute or despotic monarchy. Sometimes the government is in the hands of a few, forming an oligarchy, while the ruler or the sovereign is a mere figurehead. This class is to be found in those countries in which caste or a class holds the ruling power, and may be either hereditary, as in Japan, tribal, as in China, or bureaucratic, as in Russia, where the head of a department or bureau controls that department absolutely, and makes recommendations to the monarch.

Every European government, with the exception of Russia and Turkey, places in the hands of the people a very large share of power. Turkey was until 1908 an example of that form of monarchy which existed in feudal times.

Monarchies are called *limited* or *constitutional* because the powers of the sovereigns are limited by the constitution or by the will of the people. In fact, the purpose for which a constitution is provided is to specify clearly how far and in what direction governmental powers shall extend. Some governments are extremely complex because of the federation or union of states and provinces of different types under one rule. The British Empire, for instance, comprises under one monarch a variety of forms of government. There is the centralized government of England, Scotland, Wales, and Ireland, which are all subject to Parliament. There are the self-governing colonies of Canada

and Australia, in each of which separate states or provinces with independent powers are federated under a general government of their own. There is India, a crown colony under direct control of Parliament; while Egypt is a dependency of Great Britain under still different forms of control. Germany is also a federated empire containing variously organized states and possessions. The United States is an example of the federated republic including under one rule many self-governing commonwealths.

The chief monarchies of the world are: Austria-Hungary, Belgium, British Empire, Denmark, Germany (a federal empire comprising the kingdoms of Bavaria, Prussia, Saxony, Württemberg), Greece, Italy, Japan, Nepâl, Netherlands, Norway, Persia, Portugal, Roumania, Russia, Servia, Spain, and Sweden.

The chief despotic governments of the world are: Abyssinia (empire), Afghanistan (principality), China, Crete (subject to Turkey), Egypt (tributary to Turkey), Morocco (sultanate), Oman (sultanate), Siam, and Turkey.

Republics.—A republic is a form of administration in which the members of the governing body are chosen by electors to whom they are theoretically responsible. In some of the earlier forms of republics the electors comprised the whole adult male population of the state; in others a small group of persons exercised the power of election by constitutional right or by inheritance. The extent of the popular voice in the election of representatives in a republic varies according to the spirit of democracy which prevails at the time. Accordingly in the republics of later times, and especially in the western world, the franchise or right to vote has been enjoyed by a larger body of the members of a community than was customary in the earlier days of a more restricted democratic influence. In analyzing a form of government it must be observed that the name does not always convey an idea of the essential form of government. There are republics in fact which are not so in name; and there are republics in name that are really monarchies or empires. It may be conceived that a monarchy in which democratic principles are most pronounced and in which the monarch exercises no power or authority would really be a republic. Such a condition as existed in Rome under the Cæsars, though nominally republican, was none the less monarchical. Corresponding with these two types in modern days we find the English government as a monarchy rapidly approaching a republic in form; on the other hand, the despotic governments of South America, though republican in name, are in many cases truly monarchical. Europe witnessed, in 1848, a remarkable wave of democratic influence which threatened the thrones of the continent, and while the monarchical forms in Europe nearly all survived it, except in the cases of France and Switzerland, the reaction that has followed it has tended to change existing conditions rather than to abolish them and substitute others. Modern views upon the republican form of government hold that the essentials to its highest development are character, education on the part of the mass of the people, and a willingness to promote industrial progress rather than military power. Under such conditions it may be expected that the popular republican form of government will confer upon a nation stability, good order, and such progress as no other form of government has as yet displayed.

The chief republics of the world are: Andorra, Argentina (federal), Bolivia, Brazil (federal), Chile, Colombia, Costa Rica, Cuba, Dominican, Ecuador, France, Guatemala, Haiti, Honduras, Liberia, Mexico (federal), Nicaragua, Panama, Paraguay, Peru, Salvador, San Marino, Switzerland (federal), United States of America (federal), Uruguay, and Venezuela (federal).

ABYSSINIA.

Under an agreement signed on December 13, 1906, between Great Britain, France, and Italy, it was provided that the integrity of the ancient empire of Abyssinia, or Ethiopia, be preserved, and that the political and territorial *status quo* as well as the "open door" be maintained. The political institutions are of a feudal character, analagous to those of mediæval Europe. There is a vague state council composed of the most important *rases*, or feudal chiefs, under whom are governors of districts and the chiefs of villages. In October, 1907, a decree was issued by the Negus (Emperor) announcing the formation of a Cabinet on European lines, and ministers appointed for Justice, Finance, Commerce, War, and Foreign Affairs.

AFGHANISTAN.

The government of Afghanistan is monarchical under one hereditary prince, the *Amir*, whose power varies with his own character and fortune. By the treaty of 1893, confirmed in 1905, the Amir accepts the advice of the British government in regard to his relations with foreign powers, and is guaranteed against unprovoked invasion. The dominions are politically divided into the four provinces of Kábul, Turkestán, Herát, and Kandahár, Badakhshán being now under Turkestán. Each province is under a Hákim or governor called Náib, under whom nobles dispense justice after a feudal fashion.

ANDORRA.

The miniature republic of Andorra, which is under the joint suzerainty of France and the Spanish Bishop of Urgel, is governed by a Council of 24 members elected for four years by the heads of families in each parish. The Council elects a first and second syndic to preside; the executive power is vested in the first syndic, while the judicial power is exercised by a civil judge and two magistrates. France and the Bishop of Urgel appoint each a magistrate and a civil judge alternately.

ARGENTINE REPUBLIC.

The constitution of 1853, modified in 1862 and 1898, closely resembles that of the United States. It vests the executive power in a President, elected for six years by representatives of the 14 provinces, and not re-eligible; a Vice-President, chosen at same time and manner as the President, who is chairman of the Senate. The legislative authority is vested in a Senate of 30 members, two chosen from the capital and two by the legislature of each province, and a House of 120 Deputies elected for four years by the

people, one third of the Senate retiring every three years and one half of the House every two years. The session lasts from May 1 to September 30. The President has a yearly salary of $72,000 gold; the Vice-President, $36,000; senators and deputies, about $5,000 each.

LOCAL GOVERNMENT.—Such matters as affect the Republic as a whole are under the superintendence of the central government. The governors of the various provinces are invested with very extensive powers, and in their constitutional functions are independent of the central executive. They are not appointed by the President of the Republic, but elected by the people of each province for a term of three years and four years. The provinces elect their own legislatures, and have complete control over their own affairs; they can contract loans (internal and external) under their sole and exclusive responsibility.

AUSTRIA-HUNGARY.

The Austro-Hungarian monarchy consists of two states—the empire of Austria and the kingdom of Hungary. Each state has, according to the *Ausgleich* or "compromise" of 1867, its own constitution and Parliament, and, for most branches of state affairs, its own ministry and administration; but they have united under a common sovereign in the establishment of a common army and navy, and in the conduct of foreign affairs. The control in regard to common affairs and the voting of the common budget are intrusted to a supreme body known as the Delegations. Of these there are two, each consisting of 60 members representing the legislative bodies of Austria and Hungary.

In connection with the Ausgleich the two states also entered into a commercial and customs union in 1867, renewable every ten years, by which the two states form one commercial and customs territory, and possess the same system of coinage, weights, and measures, and a joint bank of issue.

The new treaty, signed October 8, 1907, recognizes the equality and freedom of action of each country, also a separate (but identical) customs tariff. It further provides a Court of Arbitration for the settlement of mutual differences. The contributions to the common expenditures were fixed thus: Austria, 63.6 per cent.; Hungary, 36.4 per cent.

Austria.—The empire is governed by the king and the Reichsrat, or Council of the Empire, consisting of an Upper and a Lower House. Members of the Lower House receive $4 a day during the session. Provincial matters are administered by the 17 Landtage, or provincial diets.

LOCAL GOVERNMENT.—Local affairs are dealt with by communal councils, or by corporations in towns. The members of the council are elected for three (in Galicia for six) years. District representative bodies are, in Styria (*Steiermark*), Bohemia, and Galicia, interposed between the communal bodies and Provincial Diets. They decide on all matters pertaining to the district (*Bezirk*). A committee of this body (called the *Bezirksausschuss*) administers the current affairs of the district.

Hungary.—The kingdom is governed by the king (the emperor of Austria) and a Reichstag, consisting of a House of Magnates and a House of Representatives. Members of the Lower House receive $1,000 a year and house allowance. The executive power is vested in a responsible Ministry composed of a presidency and nine departments.

LOCAL GOVERNMENT.—There are municipalities and rural communes with representative bodies. The representative body is composed half of members elected for six years, and half of persons who pay the highest taxes. The committee consists of members appointed; in the towns for six years, in the rural communes for three years, with officials appointed for life. The counties and cities invested with similar rights are independent municipalities, each with its own council. In Croatia and Slavonia each county has an assembly similar to the Hungarian local representative bodies. In the rural communes the representative body is the council.

BELGIUM.

The constitution of 1831 jointly vests the legislative power in the King, the Senate, and the Chamber of Deputies. The 110 senators (with the exception of 26 elected by the provincial councils) and 166 representatives are elected by the people, the former for eight, the latter for four years Universal male suffrage with plural voting up to three votes, by property and educational qualifications, was introduced by the Electoral Law of 1894, proportional representation being secured by the act of 1900. Belgium is a neutral power, her neutrality being guaranteed under the Treaty of London, 1831, by Great Britain, Austria, Prussia, and Russia.

LOCAL GOVERNMENT.—The provinces and communes (2,627 in 1906) of Belgium have a large amount of autonomous government. The provincial and communal electors are the same as those who elect the senators directly. In communes with over 20,000 inhabitants there are councilors elected directly, by single vote, by citizens enrolled on the communal electoral lists, and possessing the qualifications requisite for electors to the Councils of Industry and Labor; half the councilors are appointed by the workingmen electors, and half by the electors who are industrial heads (*chefs d'industrie*). In communal elections vote by ballot is suppressed, except when there is merely a single mandate to be conferred. Candidates obtaining an absolute majority are declared elected; others have seats allocated in accordance with the system of "Proportional Representation." To be eligible to the Provincial or Communal Council, persons must be 25 years of age and domiciled in the province or commune. Half the Provincial Council is renewed every four years, and it meets 15 days each year. There is a permanent deputation of six members elected, which is presided over by the governor of the province. All provincial and communal interests, including local finances, are under the care of the Council, as far as they are not provided for in the general administration. The Communal Councils are elected for eight years, half being renewed every four years.

BHUTAN.

The government of the independent state of Bhután is like that of Tibet, the chief authority being nominally divided between the Deb Rájá, or secular head, on the one hand, and the Dharm Rájá, or spiritual head, on the other. Practically the Deb Rájá is a mere tool in the hands of powerful barons (*penlops* and *jongpens*), while the Dharm Rájá, chosen in infancy, is expected to confine himself to the spiritual welfare of his people. The Deb Rájá is usually the nominee of the most powerful chieftain.

BOLIVIA.

The government of Bolivia is a representative democracy in which the executive power is vested in a President, elected directly for four years, assisted by two Vice-Presidents similarly elected, and a responsible Ministry of five members. Neither the President nor Vice-Presidents are eligible for two successive terms. The legislative authority rests with a Congress of two chambers, called the Senate and the Chamber of

Deputies. There are 16 senators (two for each department) elected for six years, and 69 deputies elected for four years. Both senators and deputies are elected by direct vote, and receive a salary of $200 a month during the sittings. The suffrage is extended to all who can read and write.

LOCAL GOVERNMENT.—For administrative purposes Bolivia is divided into 8 departments, 55 provinces, 437 cantons, and 248 vice-cantons, administered respectively by prefects, subprefects, corregidores, and alcaldes. Prefects and subprefects are appointed by the President, and they in turn appoint the administrative officers of the cantons. The capital of each department has its municipal council; the subdivisions have municipal boards, and the still smaller subdivisions have municipal agents. The territories in the northeast of the republic and in the Gran Chaco are governed by two officials called *delegados nacionales*.

BRAZIL.

Brazil until 1889 was an empire under a ruler of the house of Braganza. By a bloodless revolution which drove Dom Pedro II. from the throne, the Republic of the United States of Brazil was founded, November 15, 1889, and a new constitution was adopted in February, 1891. The chief feature of this was the establishment of the old provinces as 20 self-governed states and the federal district of Rio. All fiscal matters, however, the defense of the country, and the currency are reserved to the Federal Government.

The executive authority is in the hands of the President, elected for four years only, directly by the people. Legislative authority is exercised by the National Congress, composed of a Senate of 63 members, directly elected by the states for nine years, one third retiring every three years, and a Chamber of Deputies of 212 members. Senators and deputies are paid. The former must have been citizens for six years and the latter for four years. Deputies are elected for three years by direct vote, with provision for minority representation, one member being chosen for every 70,000 of the population.

The franchise extends to all citizens not under 21 years of age, except beggars, illiterates, soldiers on service, and members of monastic orders, etc., under vows of obedience.

LOCAL GOVERNMENT.—According to the new constitution each state must be organized under the republican form of government, and must have its administrative, legislative, and judicial authorities distinct and independent. The governors and members of the legislatures must be elective; the magistrates must not be elective nor removable from office save by judicial sentence. The Federal executive cannot intervene directly in the local government of the states. In cases of obstinate infringement of the Federal constitution by state authorities the only resource of the central power is an appeal to the Supreme Tribunal of Federal District. The Federal District is administered by a council elected by the citizens of the district, the municipal executive authority being exercised by a prefect appointed for four years by the President of the republic. There are in Brazil 892 municipalities and 1,886 parishes.

BULGARIA.

The principality of Bulgaria is under the suzerainty of Turkey. It was created by the Treaty of Berlin, 1878, and in 1885 Eastern Roumelia was incorporated with the principality, with the same ruler, laws, and mode of administration. The executive power is vested in the Prince, assisted by a Council of Ministers, and the legislative power in a single chamber, the Sobranjé, or National Assembly, elected for five years by manhood suffrage in the proportion of one member to every 20,000 of the population. There is also a Grand Sobranjé, consisting of delegates selected in the proportion of one to 10,000 of the population, to which constitutional and other questions, such as a vacancy on the throne or the acquisition of territory, must be referred.

CHILE.

The republic of Chile threw off allegiance to the crown of Spain by the declaration of independence of September 18, 1810, finally freeing itself from the yoke of Spain in 1818. The constitution voted by the representatives of the nation in 1833, with a few subsequent amendments, establishes three powers in the state—the legislative, the executive, and the judicial. The legislative power is vested in the National Congress, consisting of two assemblies, called the Senate and the Chamber of Deputies. The Senate of 32 members is elected by the provinces for six years; the Chamber of 94 members, by the departments for three years, by electors who possess a small property qualification. Electors must be 21 years of age, and be able to read and write. Deputies must have an income of 500 pesos a year, and senators 2,000 pesos. The executive is exercised by the President, elected indirectly for five years by delegates nominated by ballot, and who is not re-eligible. In legislation the President has a modified veto; a bill returned to the chambers with the President's objections may, by a two-thirds vote of the members present (a majority of the members being present), be sustained and become a law.

The salary of the President is fixed at 18,000 pesos, with 12,000 pesos for expenses.

The President is assisted in his executive functions by a Council of State, and a Cabinet or Ministry, divided into seven departments, under six ministers, viz.: of the Interior; of Foreign Affairs; of Worship and Colonization; of Justice and Public Instruction; of Finance; of War and Marine; of Industry and Public Works. The Council of State consists of five members nominated by the President, and six members chosen by the Congress.

LOCAL GOVERNMENT.—For the purposes of local government the republic is divided into 23 provinces, presided over by intendentes; and the provinces into departments, with gobernadores as chief officers. The 74 departments constitute one or more municipal districts, each with a council or municipality of nine members, inhabitants popularly elected for three years. The police of Santiago and of the capitals of departments is organized and regulated by the President of the republic at the charge of the national treasury.

CHINA.

The Chinese are held together not by political force but by a religious, social, and educational system. The constitution is merely a confederation of homogeneous provinces. At the head of the government is the Emperor, supreme priest and king, who nominally wields an autocratic power, though in point of fact the late Empress Dowager, Tzu-Hsi-An, up to the time of her death in November, 1908, was actually the supreme ruler. The chief advisory body is the Grand Council, consisting of six members.

Under this is the Government Council, including the members of the Grand Council and the chief members of the Grand Secretariat. The administration is carried on by the *Wai-wu-pu*, or Board of Foreign Affairs, and nine other boards, viz., Education, Civil Office, Commerce, Communications, Interior, Rites, Revenue, Punishments, War. By a decree of November 7, 1906, these boards, which are practically ministries, have only one president, instead of two as formerly, and no discrimination is shown between Manchus and Chinese. The Board of Censors is theoretically superior to the central administration, and in practice wields considerable power, acting as a check on the ministers, and having the immediate right of access to the sovereign. Though nominally under an autocracy, the Chinese are the freest people of Asia.

LOCAL GOVERNMENT.—The civil government of the 22 provinces is intrusted to viceroys and governors, and under them each province is subdivided into circuits superintended by *taotais* or intendants. All the territorial officials are appointed by the Imperial Government, and the provincial viceroys and governors, though free to act independently in many matters of local detail and finance, are responsible to the central government at Peking in all important questions, and especially so in foreign affairs. Each province is virtually a state in itself, and bases its administrative system on the *hien*, or city district,—the real official unit of Chinese corporate life. There are 1,300 *hiens* in the empire, each governed by a magistrate, who is regarded as the true father of the people. The position of viceroy or governor is much sought after, and, as the revenues from each province are usually farmed, corruption and extortion are rife.

The administration of Mongolia and Turkestan is intrusted to military lieutenant governors, who, with the Chinese officials in Tibet, are under the direction of the "Mongolian Superintendency," or Colonial Office, in Peking.

COLOMBIA.

Colombia has practically had a republican form of government since 1819, the date of its independence. The present Colombian constitution (the seventh since 1821) dates from 1886, and in contrast with the preceding instruments, which recognized the sovereignty of the constituent states, it provides for a very strong centralization of power. The President is elected indirectly for four years (though the present President is to hold office till 1914), and is assisted by six ministers, who are theoretically responsible to the Senate. There is a State Council of six members. The legislative power is vested in Congress, consisting of the Senate and the House of Representatives. The Senate contains 48 senators, of whom three are chosen for the Federal District by the President and two cabinet ministers, and three for each department by the governor, his secretaries, and the president or judge of the Court of Accounts of each department. The House of Representatives consists of 67 members elected by direct vote, one member for every 50,000 of population. Senators and representatives are elected for four years.

LOCAL GOVERNMENT.—The departments are administered by governors appointed by the President, and removable at his pleasure. The departments have councils elected by the people at the rate of one member for every 25,000 inhabitants, and are divided into provinces presided over by prefects appointed by the governor.

COSTA RICA.

The republic of Costa Rica, an independent state since 1821, is governed by a President elected for four years and a Chamber of 32 representatives elected for four years by the "respectable" inhabitants, half retiring every two years. The constitution was promulgated in 1870, but was frequently interrupted by pronunciamentos, and practically suspended from 1870 to 1882. For administrative purposes the republic is divided into five provinces and two comarcas, administered by governors appointed by the President.

DENMARK.

Under the constitution of 1849 (modified in 1855, 1863, 1865, and 1866) the executive is vested in the King and Ministry, the legislative in the Rigsdag, or Diet, acting jointly with the sovereign. The Rigsdag comprises the Landsthing and the Folkething, the former being a Senate or Upper House, and the latter a House of Commons. The Landsthing consists of 66 members. Of these 12 are nominated for life by the crown and 54 are elected indirectly for eight years by electoral bodies, in which large taxpayers are well represented. Eligible to the Landsthing is every citizen of 25 who is a resident of the district. The Folkething, or Lower House of Parliament, consists of 114 members, returned in direct election, by universal suffrage, for the term of three years. The franchise belongs to every male citizen who has reached his 30th year, who is a householder of over one year's standing, and who is not in receipt of public charity. A candidate for the Folkething must be over 25. Members of both houses receive about $2.75 each day for their services during session, as well as traveling allowance.

LOCAL GOVERNMENT.—The country is divided into 18 counties (*Amter*), each administered by a governor (*Amtmand*), and these are subdivided into hundreds (*Herreder*) and parishes. The towns are administered by mayors, with or without aldermen.

DOMINICAN REPUBLIC.

The republic of Santo Domingo (*República Dominicana*), founded in 1844, is governed under a constitution of 1844, reinforced and modified in 1865, and finally in 1896. The executive power is vested in a President, elected for four years, and in a Ministry of his own appointment. The legislature is in the hands of a National Congress of 24 deputies, chosen by indirect vote for a term of four years. Each province and district is administered by a governor appointed by the Council. The various communes, cantons, and sections are in charge of prefects or magistrates appointed by the governors. The communes have municipal corporations elected by the inhabitants.

ECUADOR.

Under the constitution of 1884, modified in 1887 and 1897, the republic of Ecuador is governed by a President elected for four years, and a Congress of two houses. The Senate is composed of 32 members, elected for two years, representing the 16 provinces. The Chamber of 42 deputies, representing the people, is elected every two years. The electors to both Chambers must be adults able to read and write. The President and Vice-President are elected by direct vote; but, as the Vice-President is elected

two years after the President, his term of four years is divided between two distinct administrations. The President has the power of veto, but if Congress insists on a vetoed bill becoming law, he must perforce give his consent to it. By the terms of the constitution privileges of rank and race are not allowed to exist within the republic, but most of the Indians are virtually in bondage.

LOCAL GOVERNMENT.—For administrative purposes the republic is divided into 16 provinces besides the Galápagos Archipelago, which is governed by a territorial chief. The provinces are administered by governors, appointed by the Government; their subdivisions, or cantons, by political chiefs; and the parishes by political lieutenants.

EGYPT.

Egypt is nominally dependent on Turkey. From 1879 to 1883 the country was under the dual control of France and Great Britain; but in the latter year Great Britain intervened after Arabi Pasha's rebellion, restored the authority of the Khedive, and has practically governed the country ever since. The British occupancy, at first regarded as temporary, has by force of circumstances become firmly established; and the predominant position of Great Britain was formally recognized by France in the Anglo-French Agreement (April 8, 1904). There is a British agent at Cairo who has a seat in the Council of Ministers, in which, with the Khedive, rests the real legislative authority. There are besides a Legislative Council of 30 members, of whom 14 are nominated by the Government, and a General Assembly, both with limited powers. The General Assembly consists of the Ministry, the Legislative Council, and 46 popularly elected members. It has no legislative functions, but its consent is required to levy new taxes, and it must be convened every two years. The powers of the Legislative Council are chiefly consultative.

LOCAL GOVERNMENT.—The country is divided into five governorships (*mohafzas*) of principal towns, and 15 provinces (*mudiriehs*), the latter being subdivided into districts or *kisms*. At the head of the province is the mudir, who is assisted by a sanitary board, a police bureau, and a chief engineer. He also exercises authority over the heads of districts and communities, which in turn exercise control over the representatives of the villages and municipal wards. The collection of taxes is carried on through the mudir.

FRANCE.

Since the overthrow of Napoleon III., in 1870, France has been a republic governed by a President and two Chambers, under the constitution of 1871, revised in 1875, 1879, 1884, 1885, and 1889.

The President is elected for seven years by the Senate and Chamber of Deputies united in National Assembly. He promulgates the laws voted by both Chambers, and insures their execution. He selects the Ministry, appoints to all civil and military posts, concludes treaties with foreign powers, but cannot declare war without the previous assent of both Chambers. Every act of the President has to be countersigned by a minister.

The Legislature consists of the Assembly, sitting in two houses, viz.: (1) the Senate of 300 members indirectly elected for nine years (one third retiring every three years) by delegates chosen by the municipal councils and by the senators, deputies, councilors general, and district councilors of the departments. There are a number of senators originally elected for life by the two Chambers, but as these die the vacancies are filled by the election of senators for a period of nine years only; and (2) the Chamber of Deputies of 584 members, elected for four years by universal suffrage. Each citizen 21 years old, not actually in military service, who can prove a six months' residence in any one town or commune, and not otherwise disqualified, has the right to vote. Deputies must be citizens and not under 25 years of age. The manner of election of deputies is by *scrutin d'arrondissement*, under which each department is divided into a number of *arrondissements*, each elector voting for one deputy only. Candidates are compelled to declare for which constituency they will stand. Each arrondissement elects one deputy, and if its population is in excess of 100,000, it is divided into two or more constituencies.

Both houses can initiate and frame laws, except in the case of financial laws, which must first be presented to and voted on by the Chamber of Deputies. The princes of deposed dynasties are precluded from sitting in either house.

Senators and deputies are paid 9,000 francs ($1,800) a year, and the presidents of the two Chambers receive in addition, 72,000 francs ($14,400) for the expense of entertainment. Members of both Chambers travel free on all railways by means of a small annual payment. The President of the republic receives 600,000 francs, with a further allowance of 600,000 francs for his expenses.

France has, besides, a special institution under the name of *Conseil d'Etat*, composed of councilors, *Maîtres des requêtes*, and auditors, all appointed by the President of the republic, and presided over by the Minister of Justice. Its duty is to give opinion upon administrative points submitted to it by the Government. It is judge in the last resort in administrative suits, and it prepares the rules for the public administration.

The colonies are looked upon as politically part of the republic, and are represented in the Senate by four senators and in the Chamber by ten deputies.

LOCAL GOVERNMENT.—For administrative purposes France is divided into 87 departments. Since 1881 the three departments of Algeria are also treated, for most purposes, as part of France proper. These departments are subdivided into 362 arrondissements, 2,911 cantons, and 36,222 communes. Each department is administered by a prefect appointed by the President of the republic, and each arrondissement by a subprefect. The prefect is assisted by a Prefectorial Council. He is a representative of the Executive, and, as such, supervises the execution of the laws, issues police regulations, supplies information on matters which concern the department, nominates subordinate officials, and has under his control all officials of the state.

The administrative unit is the commune, the size and population of which differ very much. The local affairs of the commune are under a municipal council, elected by universal suffrage, but each act of the council must receive the approval of the prefect, while many must be submitted to the Council General, or even to the President of the republic, before becoming lawful. Even the commune's quota of direct taxation is settled by persons (*répartiteurs*) chosen by the prefect from among the lists of candidates drawn up by the municipal council.

Each municipal council elects a mayor, who is both the representative of the commune and the agent of the central government. He is the head of the local police

and, with his assistants, acts under the orders of the prefect.

Each canton is composed of an average of 12 communes, although some of the largest communes are, on the contrary, divided into several cantons. It is a seat of a justice of the peace, but is not an administrative unit.

The district, or arrondissement, has an elected *conseil d'arrondissement*, with as many members as there are cantons, its chief function being to allot among the communes their respective parts in the direct taxes assigned to each arrondissement by the Council General. That body stands under the control of the subprefect. A varying number of arrondissements form a department, which has its *conseil général* renewed by universal suffrage.

Colonies and Dependencies.

	Date of Acquisition.	Area Square Miles.	Population.
IN ASIA:			
French India	1679	196	275,400
Annam	1884	52,100	6,124,000
Cambodia	1862	37,400	1,500,000
Cochin-China	1861	20,000	2,968,600
Tonking	1884	46,000	10,000,000
Laos	1893	98,400	650,000
Total of Asia	....	254,096	21,518,000
IN AFRICA:			
Algeria	1830-1902	343,500	5,158,050
Tunis	1881	64,600	1,900,000
Sahara	....	1,944,000	800,000
Senegal	1637-1880	9,070	107,800
Senegambia and Niger	1893	370,000	8,000,000
French Guinea	1843	95,000	2,200,000
Ivory Coast	1843	120,000	2,000,000
Dahomey	1893	65,000	1,000,000
Congo	1884	850,000	10,000,000
Fr. Somaliland and dep.	1864	12,000	50,000
Réunion	1649	970	173,200
Comoro Isles	1886	620	47,000
Mayotte	1843	140	11,640
Madagascar and Islands	1643-1896	228,000	2,644,700
Total of Africa	....	4,102,900	34,092,390
IN AMERICA:			
French Guiana	1626	30,500	32,910
Guadeloupe and dependencies	1634	688	182,110
Martinique	1635	380	203,780
St. Pierre and Miquelon	1635	92	6,250
Total of America	....	31,660	425,050
IN OCEANIA:			
New Caledonia and dependencies	1854-1887	7,650	53,350
Establishments in Oceania	1841-1881	1,520	29,000
Total of Oceania	....	9,170	82,350
Grand total	....	4,397,826	56,117,790

GERMAN EMPIRE.

According to the constitution of April 16, 1871, all the states of Germany form a Confederate League, bearing the name German Empire, under the hereditary presidentship of the King of Prussia, who holds the title of *Deutscher Kaiser*. The Emperor as such represents the empire in all matters affecting international law. He may declare war, but if it is not defensive the consent of the Bundesrat, or Federal Council, is required. He can make peace, conclude alliances and treaties with foreign powers, and accredit and receive ambassadors. The legislature consists of the Reichstag, representing the German nation, and the Bundesrat, which represents the individual states. The Emperor has no veto on laws passed by these bodies. All laws for the empire must receive the votes of an absolute majority of the Bundesrat and the Reichstag, and must be promulgated by the Emperor. The 58 members of the Bundesrat are appointed by the governments of the individual states for each session, while the members of the Reichstag, 397 in number (about one for every 131,640 inhabitants), are elected by universal suffrage and ballot for the term of five years. By the law of March 19, 1888, which came into force in 1890, the duration of the legislative period is five years.

The Bundesrat is mainly a confirming body, although it has the privilege of rejecting measures passed by the Reichstag. It has also a limited initiatory power, which it occasionally exercises. Members of the Bundesrat have the right of appearing in the Reichstag. Members of the one chamber, however, are not eligible for election to the other, although they may sit in their respective provincial diets. Members of the Reichstag are now paid $750 per session, with a deduction of $5.00 for each day's absence.

All the German states are constitutional except Alsace-Lorraine and the two grand duchies of Mecklenburg. The six larger states (Prussia, Bavaria, Saxony, Württemberg, Baden, Hesse) have adopted the two-chamber system, but in the composition of the houses great differences are found. The lesser states also have Chambers of Representatives, and in most states the different classes, as well as the cities and rural districts, are separately represented.

LOCAL GOVERNMENT.—There is little or no Imperial local government, since the Imperial laws are, for the most part, administered by the state governments under the supervision of the Emperor. The chief local administrative activity of the empire, therefore, consists of such supervisory service as may be necessary to insure the strict enforcement of the Imperial laws by the state authorities.

PRUSSIA.—For administrative purposes Prussia is divided into 12 provinces, which again are subdivided into government districts (*Regierungsbezirke*), urban circles (*Stadtkreise*), and rural circles (*Landkreise*). For provinces and rural circles the local authorities elect deliberative assemblies which appoint executive committees. Each province has a governor (*Oberpräsident*); each government district has a president, and deals chiefly with local affairs of state concern. In towns the deliberative authority is the town council, elected on the 3-class system of property suffrage. The executive is a magistracy with the burgher-meister as president. Each rural circle has a *Landrat*, who is the chief executive authority and the agent of the central administration. He is appointed by the King. The Crown controls the administration of all the administrative areas.

BAVARIA.—Bavaria is divided into eight circles or government districts (*Regierungsbezirke*), subdivided into administrative districts. In every government district there is a *Landrat*, or council, consisting of representatives of the districts, the towns, the landed nobility, the clergy, and the university, if there be one, all elected for six years.

SAXONY.—Administratively the kingdom is divided into four circles or departments, subdivided into 15 governmental districts (*Amtshauptmannschaften*) and 116 Aemter or bailiwicks. At the head of each circle is a directory which handles the affairs pertaining to local administration, and appoints the officials presiding over the subdivisional councils.

WURTTEMBERG.—The kingdom is divided into four administrative circles (*Kreise*) viz., Neckar, Schwarzwald, Jagst, and Danube; subdivided into 64 districts (*Oberämter*) each of which is under an Oberamtmann, assisted by an Amtsversammlung or local council. There are besides 1,904 communes (*Gemeinden*).

FOREIGN DEPENDENCIES.—Germany has declared her protection over various areas or spheres of influence in Africa, in China, and in the western Pacific. The following is a list of the various foreign regions at present under the protection or influence of Germany, the estimates given being necessarily vague:—

	Date of Acquisition.	Method of Government.	Estimated Area Sq. Miles.	Estimated Population.
In Africa:—Togoland	1884	Imperial Governor	33,700	1,000,000
Kamerun	1884	Imperial Governor	191,130	3,500,000
German Southwest Africa	1884-1890	Imperial Governor	322,450	200,000
German East Africa	1885-1890	Imperial Governor	384,180	7,000,000
Total African possessions	1884-1890		931,460	11,700,000
In Asia:—Kiauchau Bay	1897	Imperial Governor	200[1]	30,000[1]
In the Pacific:—Kaiser Wilhelm's Land	1885-1886	Imperial Governor	70,000	300,000
Bismarck Archipelago	1885	Imperial Governor	20,000	
Caroline, Pelew, Marianne, Solomon, Marshall, and Samoan Islands, etc.	1886-1889	Imperial Governor	6,160	89,000
Total Pacific possessions	1884-1886		96,160	389,000
Total foreign dependencies	1884-1899		1,027,820	12,119,000

[1]Exclusive of the Bay with an area of about 200 square miles, and the neutral zone with an area of about 2,500 square miles, and population of 1,200,000.

GREECE.

Greece gained its independence in the famous struggle of 1821-1829, after centuries of subjection to Turkey, and in 1830 was declared a kingdom under the protection of Great Britain, France, and Russia. Under the constitution of 1864 the executive is vested in the King and his responsible ministers. The legislative authority is in the hands of a single chamber (the Bulé) consisting of 235 representatives elected by manhood suffrage for four years. Representatives must be at least 30 years of age, and electors 21. The deputies are each paid about $360 per session. The Bulé has no power to alter the constitution itself; particular provisions may be reviewed after a lapse of ten years, with the exception of "fundamental principles."

LOCAL GOVERNMENT.—Greece is divided into 26 nomarchies, under officers called nomarchs, or prefects. The nomarchies are subdivided into 69 eparchies under eparchs, corresponding to the French subprefects; and the eparchies are further subdivided into 450 demarchies, under demarchs or mayors, who are elected by the people for four years. The nomarchs and eparchs are elected by the government without fixed terms. The nomarchs are assisted by a council elected by universal secret suffrage for four years, which manages the police, roads, and other local business, and imposes the assessments.

GUATEMALA.

Guatemala formerly formed part of the Confederation of Central America, but the republic was established in 1847. It is governed by a President elected for six years. The legislative power is vested in a National Assembly, consisting of representatives (one for every 20,000 inhabitants) elected by universal suffrage for four years, and a Council of State of 13, part elected by the Assembly and part nominated by the President.

LOCAL GOVERNMENT.—The country is divided into 22 departments, which are subdivided into municipal districts. Each department is administered by an official called jefe politico, who is appointed by the President. The municipal districts are administered by one or more alcaldes each, and by municipal councils, all elected by the people.

HAITI.

The republic of Haiti, originally a French colony, was proclaimed independent in 1804, and is now governed under a constitution drawn up in 1889. The executive power is in the hands of a President, elected for seven years by the Senate and the Chamber of Communes. The Chamber of Communes of 95 members (one for each commune) is elected for three years by direct popular vote; whilst the Senate of 39 members is elected indirectly for six years. Members of both houses are each paid during session $150 a month. The administration is carried on, under the President, by four heads of departments.

HONDURAS.

The republic of Honduras, established in 1839, before the Confederation of Central America broke up, is governed under a charter promulgated in 1894. The chief executive consists of a President, nominated and elected by popular vote every four years, assisted by a Council of State. The legislative power is vested in a Senate and Chamber of Deputies, chosen for four years directly by popular vote. For administrative purposes the republic is divided into 15 departments in charge of governors appointed by the President.

ITALY.

The constitution of the kingdom is based upon that granted by King Charles Albert to the Sardinians March 4, 1848. The executive is vested in the King and exercised through his ministers. The legislative authority is exercised by the King in conjunction with a Senate and a Chamber of Deputies. The Senate, of about 363 members, consists of princes of the royal family who are qualified by age (25 years), and of an unlimited number of members selected by the Ministry and nominated by the King for life. To be eligible one must have rendered eminent services to the country, be 40 years of age or upward, and pay taxes to an annual amount of $600. The Chamber of 508 Deputies is elected by conditional universal suffrage for a period of five years, though the King can dissolve the chamber at any time. Electors must be over 21 years of age and possess one or other of the following qualifications: they must have reached a certain standard in elementary education; or must pay not less than 19.80 lire in direct taxation; or, if farmers, must pay annually at least 500 lire of rent; or, being occupants of lodgings, shops, etc., in towns, pay an annual rent ranging from 150 lire in communes of 2,500 inhabitants to 400 lire in communes of 150,000 inhabitants. Non-commissioned officers and men in the army have no vote while under arms. Members of academies, professors, soldiers who have served under arms for two years, and numerous other classes are qualified to vote by their position. All money bills must be initiated in the Chamber.

Senators and deputies are unpaid, but travel free.

LOCAL GOVERNMENT.—The two principal elective local administrative bodies are the communal councils and the provincial councils. According to the law of May 21, 1908, each commune has a communal council, a municipal council, and a syndic. Both the communal councils and the municipal councils vary according to population, the members of the latter being selected by the former from among themselves. The syndic is the head of the communal administration, and is a Government official; he is elected by the communal council from among its own members, by secret vote. Each province has a provincial council and a provincial commission. The council elects its president and other officials. The provincial commission is elected by the council from its own members. It conducts the business of the province when the latter is not sitting. Both communal and provincial councilors are elected for six years, one half being renewed every three years. The communal council meets twice and the provincial once a year in ordinary session. All communal electors are eligible to the council except those having an official or pecuniary interest in the commune. Electors must be Italian citizens, 21 years of age, and able to read and write, be on the Parliamentary electoral list, or pay a direct annual contribution to the commune, of any nature, or comply with other conditions of a very simple character.

JAPAN.

Prior to 1889, the country was an absolute monarchy, but in that year a new constitution was promulgated. The executive power now vests in the Emperor (*Mikado*) and his Ministry, who are appointed by and are responsible to himself. He further exercises the legislative power with the consent of the Diet. The Privy Council is an advisory body consulted by the Emperor on all important affairs of state. The Diet is composed of the House of Peers and the House of Representatives, and meets yearly. Every law must have the consent of Parliament and it has control of finances and the administration of justice.

The House of Peers numbers about 370, and consists of: (1) princes of the royal family of 25 years of age and over—they become members for life; (2) princes and marquises of 25 years of age and over—also members for life; (3) a certain number, not to exceed one fifth, of three other classes of peers—counts, viscounts, and barons,—these members are elected by their own orders for seven years; (4) persons not peers who have achieved distinction in service of the state or as scholars, for life; (5) persons over 30 years of age who are among the 15 largest taxpayers in each *fu* and *ken*, elected by the 15 and appointed by the Emperor for seven years.

In the House of Representatives there are 379 members, elected for four years. Voters must be at least 25 years of age, must have resided in the district one year, and must pay not less than 10 yen ($5) of direct taxes annually.

Members of both houses are paid 2,000 yen ($1,000) for each session, with traveling allowance.

LOCAL GOVERNMENT.—At the head of the local administration in the provinces are the governors, one in each of the 46 districts (3 *fus* and 43 *kens*). In 1879 city and prefectural assemblies were created, based on the principle of election; their power is confined to fixing the estimates of the local rates, subject to the confirmation of the governors, and finally of the Minister of the Interior. Eligible to the assembly are all male citizens 25 years of age, resident in the district at least three consecutive years, and paying land tax or direct national tax of not less than $5 annually. The franchise is conferred on all male citizens of 25 years residing two years in the district and paying land tax or direct national tax of not less than $1 annually. Each district is subdivided into cities (*ku*), and counties (*gun*), each with its chief magistrate (*cho*), who manages local affairs. The Island of Hokkaido (Yezo) has a governor and a special organization.

To further carry out the principle of decentralization and self-government a system of local administration in *shi* (municipality), *cho* (town), and *son* (village) came into effect April 1, 1889, and is to be applied gradually according to local circumstances and requirements.

KOREA.

Until 1894 China was the suzerain of Korea, but on the conclusion of the war in 1895 the independence of Korea was established. The designs of Russia were checked by the peace treaty between Russia and Japan, 1905, the paramount interest of the latter country in Korea being definitely acknowledged. A treaty between Korea and Japan, November 17, 1905, provided that Japan, through the Department of Foreign Affairs in Tokyo, should control and determine the external affairs of Korea; that a Japanese Resident General should take up his quarters at Seoul, and that Japan should have the right to station Residents at the several open ports or any other places in Korea deemed desirable. The abdication of the Emperor in favor of the Crown Prince, July 19, 1907, led to a new convention, the terms of which were: (1) The administration of Korea was placed under the Japanese Resident General; (2) the enactment of all laws and ordinances and all important affairs of state must receive the sanction of this official; (3) all responsible officials must be duly approved by the Resident General; (4) a distinct line of demarcation was drawn between administrative and judicial affairs; (5) Japanese subjects are eligible for office under the Korean government; (6) foreigners may be employed only with the sanction of the Resident General.

There is a Cabinet composed of 10 ministers, whose acts must be ratified by the Emperor of Japan.

LOCAL GOVERNMENT.—Administratively the country is divided into 13 *to* or provinces, which are subdivided into 339 *kün* or districts. There is a separate government for the capital, while each of the nine treaty ports is under a magistrate.

LIBERIA

Liberia is a negro republic, founded in 1822 by several colonization societies of Europe and America for the settlement of freed slaves. It was declared independent in 1847; was recognized by Great Britain in 1848 and by the United States in 1862. The constitution of the republic is on the model of that of the United States with some trifling exceptions. The executive is vested in a President, Vice-President, and a council of six ministers. The Legislature consists of a Senate and House of Representatives. Electors must be of negro blood and owners of land. The official language of the government is English.

MEXICO.

The country, by the constitution of 1857, and revised in 1904, is divided into 27 states, three territories, and the federal district, all governed as a federative republic by a President, elected by the people for six years. The legislative power is vested in a Congress consisting of a House of Representatives and a Senate.

The representatives are elected for two years by universal suffrage. The qualifications requisite are, to be 25 years of age and a resident in the state. The Senate consists of 56 members, two for each state and two for the federal district, of at least 30 years of age, who are returned in the same manner as the deputies. The members of both houses receive salaries of $3,000 a year.

The administration is carried on, under the direction of the President and a Council, by eight Secretaries of State, heads of the Departments of: (1) Foreign Affairs; (2) Interior; (3) Justice; (4) Public Instruction; (5) Fomento, Colonization, and Industry; (6) Communications and Public Works; (7) Financial and Public Credit; (8) War and Marine.

LOCAL GOVERNMENT.—Ea separate state has its own internal constitution, government, and laws; but interstate customs duties are not permitted. Each has its governor and legislature popularly elected under rules similar to those of the Federation; and the civil and criminal code in force in the Federal district prevails, with few exceptions (Vera Cruz and the state of Mexico), in the different states.

MONACO.

The principality is under the absolute rule of the Prince of Monaco, there being no elective representation. The administration is confided to a Governor General, with a Secretary General and a Secretary of State. There is a consultative State Council of five members appointed by the Prince. Municipal administration is in charge of a maire and two assistants, with a commission of five members, all appointed by the Prince.

MONTENEGRO.

Montenegro is now a hereditary constitutional monarchy with popular representation. The executive vests in the Prince, and the legislative authority in a Council of State (consisting of the Crown Prince, the Metropolitan Bishop, all ministers and councilors appointed by the Prince), and a Skupshtina, consisting of 74 members, 56 elected by the military districts, and six by the chief towns, 12 being *ex officio* members, the religious and official heads of the state. The members are elected for four years. The country is divided into five districts under governors; the districts are subdivided into 56 capitanats, which are again divided into communes.

MOROCCO.

Morocco, the westernmost of the Barbary states, is ruled by a Sultan. The form of government is really an absolute despotism, unrestricted by any laws, civil or religious; but the tribes beyond the mountains scarcely acknowledge his authority, which, over a large part of his dominions, is that of a titular chief rather than a ruler. The Sultan has six ministers who form the executive of his own unfettered will.

By the Anglo-French Agreement, April 8, 1904, Great Britain recognizes that it is the duty of France to preserve order in Morocco, and to provide assistance for all administrative, economic, financial, and military reforms, provided the treaty rights of Great Britain be left intact, and the free passage of the Straits of Gibraltar in nowise threatened by fortifications on the Moorish coast.

NEPAL.

The government of the independent kingdom of Nepál is a military oligarchy. All power at present is vested in the Prime Minister, to whom it was delegated by the reigning Mahárája-Dhiráj. The present Prime Minister holds the rank of major general in the British army.

NETHERLANDS (THE).

The constitution of 1848, revised in 1887, vests the executive power exclusively in the sovereign, and the legislative power conjointly in the sovereign and the States-General, the latter consisting of two chambers.

The Upper, or First, Chamber is composed of 50 members, elected by the Provincial States from among the most highly assessed inhabitants, or from among some high functionaries, mentioned by law. Members of the First Chamber not residing in The Hague, where the Parliament meets, are allowed 10 guilders ($4) a day during the session of the States-General. The Second Chamber of the States-General numbers 100 deputies, who are elected directly.

The Government and the Second Chamber alone may introduce new bills, the functions of the Upper Chamber being restricted to approving or rejecting them, without the power of amendment. Alterations in the constitution can be made only by a bill declaring that there is reason for introducing those alterations, followed by a dissolution of the Chambers and a second confirmation by the new States-General by two thirds of the votes.

There is a State Council—"Raad van State"—of 14 members, appointed by the sovereign, of which the sovereign is president, and which is consulted on all legislative and most executive matters.

LOCAL GOVERNMENT.—The territory of the Netherlands is divided into 11 provinces and 1,123 communes. Each province has its own representative body, "the Provincial States." The members are elected for six years. Except that they must be inhabitants of the province, the electors, as well as the mode of voting, are the same as for the Second Chamber. The Provincial States are entitled to make ordinances and to raise taxes. All provincial ordinances must be approved by the sovereign. The Provincial States exercise a right of control over the municipalities. They also elect the members of the First Chamber of the States-General. A permanent commission composed of six of their members, called the "Deputed States," is charged with the executive power in the province and the daily administration of its affairs. This committee has also to see the common law executed in the province.

The communes form each a corporation subject to the general law. In each commune is a council, elected for six years directly, by the same voters as for the Provincial States, provided they inhabit the commune; one third of the council retiring every two years. All the male Dutch inhabitants 23 years of age are eligible.

The council is presided over by a mayor, appointed by the sovereign for six years. The executive power is vested in a college formed by the mayor and two to six aldermen (*wethouders*) elected by and from the council; this college is also charged with the execution of the common law.

NICARAGUA.

The constitution of 1894 and 1895, amended in 1905, vests the executive in a President, elected for six years, and the legislative in a Congress of one house, containing 36 members, elected by universal suffrage for six years. The President exercises his functions through a council of ministers, consisting of the heads of the departments of Foreign Affairs and Public Instruction; Finance; Interior, Justice and Police; War and Marine; Public Works.

LOCAL GOVERNMENT.—For administrative purposes the republic is divided into 13 departments and two comarcas, each of which is under a political head, who supervises finance, instruction, and other matters, and is also military commandant.

NORWAY.

The dissolution of the union with Sweden was accomplished by the Norwegian Storthing, June 7, 1905, and Norway became an independent monarchy. The Norwegian constitution of 1814, modified several times since, vests the legislative power in the Storthing, which has 123 members elected for three years. Every male citizen of 25, who has resided in the country for five years, is qualified as an elector, except for legal disabilities. For working purposes, the Storthing is divided into the *Odelsting*, composed of three fourths of the members, and the *Lagting*, consisting of the remainder; all new bills originate in the former. The King has the right of veto, but if the same bill passes three Storthings, separately and subsequently elected, his veto is overridden. Members are paid $3.25 a day during the session. The executive rests with the King and a Council of State composed of nine members. In June 9, 1907, the franchise, with a property qualification, was extended to women, thus increasing the electorate by about 300,000.

LOCAL GOVERNMENT.—The country is divided into 20 districts, each governed by a chief executive functionary (*Amtmand*), viz., the towns of Kristiania and Bergen, and 18 *Amts* (counties). There are 41 towns, 22 *Ladesteder* (ports), and 583 rural communes (*Herreder*), mostly parishes or sub-parishes (wards). The *Herred* is governed by representatives and a council (*Formaend*), elected by and from among the representatives. The representatives elect conjointly every third year from among the Formaend a chairman and a deputy chairman. All the chairmen of the rural communes of an Amt form with the Amtmand the *Amtsting* (county diet). The towns and the ports form 61 communes, also governed by a council and representatives. The members of the local governing bodies are elected under the same conditions as the Storthing.

PANAMA.

The new republic of Panama extends about 480 miles from east to west and has an area of about 33,800 square miles—almost the size of the state of Indiana. Its population is estimated at about 400,000. It is chiefly the seacoast that is inhabited, most of the interior being dense jungle and unexplored. The city of Panama has about 30,000 inhabitants, and Colon, formerly known as Aspinwall, is a smaller place with about 14,000. The greatest drawback to the development of the isthmus has been the prevalence of fevers. American engineers, however, declare that with proper sanitary administration it can be made a favorite winter resort.

On November 3, 1903, Panama seceded from the republic of Colombia, and proclaimed its own independence as a separate republic. Almost immediately the United States government recognized the new republic, and concluded with it a treaty on November 18, 1903, guaranteeing its independence and immunity from aggression.

The promptness with which the United States and Europe showed a determination to prevent punitive action by Colombia caused many persons to assume that there had been concerted preparation. The theory has been both strongly supported and strongly contested. At any rate, a record in republic-making has been established, not only in speed but also in bloodlessness.

The big canal gave the necessary incentive, because secession from the Federation meant the paying to Panama of many millions of dollars that would otherwise have gone into the Colombian treasury.

Italy and France have recognized the new republic of Panama, Germany has refused all invitations to interfere, and England is neutral.

In February, 1904, Panama was duly organized as an international state, and a treaty concluded with it by the United States, granting to the latter country the right to construct the Panama canal. Ten years is the time estimated for the completion of the canal.

The new constitution provides for a Chamber of Deputies of 32 members, elected for two years, and for a President elected for four years. There are two Vice-Presidents and a Cabinet of five ministers.

LOCAL GOVERNMENT.—The republic is divided into 7 provinces, each under a governor with other subordinate officials.

PARAGUAY.

The republic is governed, under the constitution of 1870, by a President elected for four years, a Congress consisting of a Senate and a Chamber of Deputies, both elected by universal suffrage, and five ministers of state chosen by the President. The President receives a salary of $9,500, the Vice-President $4,800, the ministers $3,000, and the senators and deputies $1,000 each per year.

LOCAL GOVERNMENT.—The country is divided into 23 counties (*partidos*), governed by chiefs and justices of the peace, assisted by municipal councils.

PERSIA.

The Shah, until 1906, carried on his government through a Cabinet of responsible ministers, though practically his rule was absolute. In 1906, however, a decree was issued convoking a National Assembly. The constitution was dated January 1, 1907. It provides for a National Council (*Mejliss*) of 162 members, to be raised if necessary to 200; members to be elected for two years; the Council to have full control over the organization of the government, the appointment of ministers, finance, and internal administration. The constitution provides for a Senate of 60 members, half appointed by the Shah, and half by the Council. A new constitution, signed by the Shah in October, 1907, limits the sovereign's prerogatives and ecclesiastical authority, grants liberty of conscience, of the person, of education, of the press, of associations, and of speech, and defines the duties of Parliament and the responsibilities of ministers.

LOCAL GOVERNMENT.—The country is divided into 33 provinces under governors general, generally styled *Hâkim*, who are directly responsible to the central government, and can nominate the lieutenant governors of the districts comprised in their own administrative area. The larger governments general are subdivided into provinces. Every town has a mayor or chief magistrate, called *kalântar*, or *darogha*, or *beglerbegî*. Every quarter of a town or parish, and every village, has a chief, who is called *kedkhodâ*. These local officers, who are chiefly employed in the collection of revenue, are occasionally elected by the

citizens. Most of the governors have a *vizîr* or a *pîshkâr*, to whom are confided the details of the government.

PERU.

The constitution of 1856, revised in 1860, is modeled on that of the United States, the legislative power being vested in a House of Representatives (116) elected by the provinces, one member for every 30,000 inhabitants, and a Senate (51) elected by the 18 departments and the province of Callao. One third of the members of both houses retire, as decided by lot, every two years. The executive is in the hands of a President, elected for four years by direct vote.

LOCAL GOVERNMENT.—The republic is divided into departments, subdivided into 98 provinces and 801 districts. Each department is administered by a prefect, and each province by a subprefect. Municipal councilors are elected by direct vote, foreigners being eligible.

PORTUGAL.

The constitution of 1826 (amended in 1852, 1885, and 1895) gives a special moderating power to the King. There are two legislative chambers, the peers and the deputies, collectively called the Cortes. In case of disagreement between these two assemblies, a joint committee decides, or, failing that, the King. The Chamber of Peers consists of 90 life members, in addition to the princes of the blood, the 12 bishops of the continental dioceses and 52 hereditary peers. The Chamber of Deputies is composed of 155 members elected by universal suffrage every four years; seven of these members are elected by the Portuguese colonies. The King has no veto on a law twice passed by both chambers. The determination of the late prime minister, Senhor Franco, to carry out reforms, even to the extent of dissolving an obstructive Parliament (May 11, 1907), culminated in the massacre of King Carlos I. on February 1, 1908. The extravagances and abuses which characterized every department made Portuguese politics a byword in Europe.

LOCAL GOVERNMENT.—For administrative purposes, Portugal is divided into 21 districts (17 continental, 3 in the Azores, 1 in Madeira), corresponding somewhat to the French departments. These are subdivided into communes (*concelhas*) and parishes. Each district has its *junta*, or popularly elected assembly, an executive commission chosen from the junta, and over all a governor nominated by the King. In each commune is an elected municipal council, and an administrator appointed by the King to supervise the central affairs in the commune. Each parish also has its elected assembly or *junta*.

ROUMANIA.

Roumania is an independent kingdom, and the executive is vested in the King with a Cabinet of eight and the Prime Minister. The Legislature consists of a Senate of 120 members, indirectly elected for eight years by two colleges representing the propertied electors, and a Chamber of 183 members elected for four years by three electoral colleges or classes of voters. These three colleges consist of: (1) electors owning property giving an income of not less than $250 a year; (2) taxpayers of $4 annually or those following some profession; (3) all Roumanian subjects of full age, most of whom vote indirectly by choosing delegates who vote with the direct electors of the other colleges. Members of both houses are paid $4 a day during session. The King has a veto on all measures.

LOCAL GOVERNMENT.—For local administration the country is divided into 32 districts, each under a prefect, a receiver of taxes, and a civil tribunal. In Roumania there are 415 arrondissements (*plasi*) and 2,975 communes, both urban and rural. The rural communes consist of 962 "circles," 8,525 villages, and 950 hamlets.

RUSSIA.

The government is an autocracy, the Czar being the supreme ruler and legislator, and the only source of power in the body politic. This condition is still virtually unchanged, although on August 19, 1905, the Czar issued a manifesto announcing the formation of a representative *Duma*, "to take a constant and active part in the elaboration of laws"; and on October 30, 1905, signed a constitution granting to the people the foundations of civic liberty, and establishing a rule that no law should come into operation without the consent of the state Duma. On March 6, 1906, an imperial manifesto, together with ukases, announced the reorganization of the Council of the Empire as a second chamber, with an equal number of elected members and imperial nominees. They are elected for nine years, a third retiring every three years. They must be over 40 and hold a degree. Payment during session, $12.50 a day. The president and vice-president are appointed by the Czar.

The members of the Duma hold office for five years, unless it is dissolved by the Czar. The method of election is indirect, the landlords returning 2,644 electors and the peasants 1,147, and these choose the Duma. The Duma elects its president and vice-president annually. Members are paid $5.25 a day, and traveling expenses. The Council of the Empire and the Duma have equal legislative powers, and can both initiate measures, with the proviso, however, that "the fundamental laws of the Imperial Administration" shall not be touched. All measures must be passed by both bodies, before being submitted for imperial sanction, whilst bills rejected by one of the legislative assemblies cannot be reintroduced without imperial consent.

The Ruling Senate (*Pravitelstvuyuschiy Scnat*), established in 1711, is partly deliberative and partly executive, and promulgates all laws, and is the high court of justice for the empire. The Holy Synod, which consists of the Metropolitan bishops of St. Petersburg, Moscow, and Kiev, and other bishops, superintend religious affairs, the president being the metropolitan of St. Petersburg. The most important board of government is the Council of Ministers (reorganized Nov. 1, 1905), composed of all the ministers and heads of the administration.

LOCAL GOVERNMENT.—The empire is divided into 78 governments, and 815 districts. There are in European Russia (including Poland and Finland) 67 governments, with 635 districts (*uyezd*), 2 *otdyels*, and 1 *okrug*, also considered as separate governments. Some of them are united into general governments, (Finland, Poland, Wilna, Kiev, and Moscow). Asiatic Russia comprises five general governments: Caucasus, Turkestan, Stepnoye, Irkutsh, and Amur, with 10 governments (*guberniya*), 17 territories (*oblasts*), and 3 districts (*okrug*, or *otdyel*), Zakataly, Chernomorsk, and Sakhalin. At the head of each general government is a governor general, the representative of the Emperor, who has supreme control of all affairs, civil or military. In Siberia the governors general are each assisted by a

council. A civil governor assisted by a council of regency is established in each government, and a military governor in 20 frontier provinces. There is also, in each government, a council of control depending directly on the Department of Control. Each government is divided into from 8 to 15 districts. A few districts in Siberia, the Caucasus, Turkestan, and the Transcaspian region rank as independent governments. So also the townships (*gradonachalstvo*) of St. Petersburg, Odessa, Kertch, Sebastopol, and Taganrog; Kronstadt, Vladivostok, and Nikolaevsk are under separate military governors.

In European Russia the government of the parish is to some extent intrusted to the people. For this purpose the whole country is divided into communes which elect an elder (*Starosta*), or executive of a commune. The communes are united into cantons, or Voloste, presided over by an elder (*Starshina*), elected at the cantonal assemblies, composed of delegates of the village communities in proportion of one man to every ten houses. In Poland the Voloste is replaced by the Gmina, consisting of all landholders—nobility included, clergy and police excluded—each having but one vote. The Gmina has, however, less autonomy than the Voloste, being directly under the chief of the district.

SALVADOR.

Salvador became an independent republic in 1839 on the dissolution of the Central American Federation (which included Costa Rica, Guatemala, Honduras, Nicaragua, and Salvador). It is governed by a President and a Congress of 70 deputies, elected respectively for four years and one year, by universal suffrage.

The administration is exercised through a ministry of four members.

LOCAL GOVERNMENT.—Each of the 14 departments is under a governor, appointed by the national executive. The alcaldes and other municipal officers are chosen by popular suffrage.

SAN MARINO.

In this independent republic the form of government has little changed during the last thousand years. Its legislative power is vested in the Grand Council of 60 members (20 nobles, 20 townsmen, 20 peasants), two of whom are appointed every six months to act as Regents (*Capitani reggenti*). The Regents exercise executive power. There is a smaller Council of 12, divided into four congresses: Congresso Economico di Stato, Congresso dei Legali, Congresso degli Studi, and Congresso Militare.

SERVIA.

The independence of Servia, formerly an autonomous province of Turkey, was established by the Treaty of Berlin, 1878. Under the present constitution the executive is vested in the King and his ministers, and the legislative authority jointly in the King, the National Assembly (*Narodna-skupshtina*), and a State Council. The former consists of 160 deputies chosen by universal suffrage for four years; the latter of 16 members, 8 nominated by the King and 8 elected by the Assembly. The deputies receive traveling expenses and $3 per day.

LOCAL GOVERNMENT.—For local purposes the country is divided into 17 departments, and these into 1,407 communes. Counties, districts, and municipalities have each its own administrative assembly.

SIAM.

The executive power is exercised by the King in conjunction with a Council of Ministers, most of whom are his relatives. The Legislative Council consists of 41 members, including the ministers, certain royal nominees, and six princes. In the event of any temporary disability of the crown, the Legislative Council has power to promulgate laws without the royal consent. At other times the royal signature is indispensable. There are 18 provinces, each administered by a commissioner appointed by the King; whilst some of the tributary districts are administered by their own chiefs.

SPAIN.

By the constitution of 1876, Spain is declared a constitutional monarchy, with the executive vested in the King, and the legislative jointly in the Cortes and the King. The Cortes consists of Senate and Congress. The Senate is composed of three classes: those who sit by right, or noble birth, or official position; 100 life members nominated by the crown (these two classes not to exceed 180); and 180 elected by the communal and provincial states, the church, the universities, and the largest taxpayers. The elected senators must be renewed by one half every five years, and by totality every time the Cortes is dissolved.

The Congress contains 406 members, elected for five years by citizens of 25, who have enjoyed full civic rights in any municipality for two years. There is some provision for minority representation, and for the election of 10 deputies who, though not elected for any one district, have received a cumulative vote of more than 10,000 in several districts. The Senate and Congress are equal in authority, and either of them, or the King, can introduce new laws.

LOCAL GOVERNMENT.—Every commune has its Ayuntamiento, consisting of regidores, or concejales, presided over by the alcalde, at whose side stand, in the larger towns, several tenientes alcaldes. The entire municipal government, with power of taxation, is vested in the Ayuntamientos. Half the members are elected every two years, and they appoint the alcalde, the executive functionary, from their own body. In the larger towns he may be appointed by the King. Each province has its own Parliament (*Diputación Provincial*). The constitution of 1876 secures to the Diputaciones Provinciales and the Ayuntamientos the government and administration of the respective provinces and communes. Neither the national executive nor the Cortes has the right to interfere in the local administration, except in the case of the Diputaciones Provinciales and Ayuntamientos endangering permanent interests. In the Basque provinces self-government has been almost abolished since the last civil war.

SWEDEN.

Under the Swedish constitution of 1809, with subsequent amendments, the executive is vested in the King, who also possesses legislative power in matters of political administration. In all other respects such power is exercised jointly by the Diet, which alone may impose taxes. Every new law must have the King's assent. The Diet consists of two chambers, both elected by the people. The First Chamber consists of 150 members. The election of the members takes place by the Landstings, or provincial representations, 25 in number, and the municipal corporations of the towns, not already represented in the Landstings, Stockholm, Göteborg, Malmö, Norrköping, and Gäfle. All members of the First Chamber must be above 35, and must have possessed for at least three years previous to the election, either real property to the taxed value of 50,000 kronor, or $14,885, or an annual income of 3,000 kronor, or $830. They are elected for six years, and obtain no payment for their services. The Second Cham-

ber consists of 230 members, 80 representing urban and 150 rural districts. All natives of Sweden aged 21, possessing real property to the taxed value of 1,000 kronor, or $280, or farming, for not less than five years, landed property to the taxed value of 6,000 kronor, or $1,665, or paying income tax on an annual income of 800 kronor, or $225, are electors; and all natives aged 25, possessing the same qualifications, are eligible for the Second Chamber.

Members are elected for three years, and are paid $335 a session, besides traveling expenses. Members of both houses are elected by ballot.

LOCAL GOVERNMENT.—The provincial administration is intrusted in Stockholm to a governor general, and in each of the 24 governments to a prefect, nominated by the King. Under the prefects are 118 bailiffs (*Kronofogdar*) and 519 sub-officers (*Länsmän*). Each rural parish, and each town, forms a commune or municipality. The communal assembly or municipal council decides on all questions of administration, police and communal economy. Each government has a general council which regulates internal affairs. The members are elected by the towns and provincial districts. The following towns are administered separately by their municipal councils: Stockholm, Göteborg, Malmö, Norrköping, and Gäfle.

SWITZERLAND.

Switzerland is a confederation of 19 entire and 6 half cantons, which have been united for federal purposes since 1848. The constitution of 1874 vests the supreme legislative and executive power in two chambers: (1) a State Council (*Ständerat*) of 44 members, two for each canton and one for each half canton, elected for three years; and (2) a National Council (*Nationalrat*) of 167 delegates of the Swiss people (of whom 29 represent Berne and 22 Zurich), elected also for three years directly by manhood suffrage. The united chambers form the Federal Assembly, to which is intrusted the supreme government. The executive is deputed to a Federal Council of seven members, elected for three years by the Assembly, the president and vice-president of which are elected yearly, and are the first magistrates of the republic. The principles of the *Referendum* and of the *Initiative* are in force. The latter denotes the right of any 30,000 citizens to demand a direct popular vote on any constitutional question.

LOCAL GOVERNMENT.—Each canton and demi-canton has its local government, based on the principle of absolute sovereignty of the people. In a few of the smallest cantons the people exercise direct powers, all male citizens of full age assembling together at stated periods, making laws and appointing administrators. Such assemblies (*Landsgemeinden*) exist in Appenzell, Glarus, Unterwald, and Uri. In the larger cantons there is a body elected by universal suffrage (*der Grosse Rat*), which exercises the functions of the Landsgemeinden. In all the cantonal constitutions, except Freiburg and the cantons having a Landsgemeinde, the *referendum* has a place. This principle is most fully developed in Zurich, where all laws and concordats must be submitted to popular vote. In many cantons the *popular initiative* is also in force. Members of the cantonal councils, as well as most magistrates, are either unpaid or receive a nominal salary. In each canton are districts (*Amtsbezirke*) consisting of a group of communes, each having a prefect (*Regierungstatthalter*) representing the canton. In the larger communes there is an assembly (legislative) and a council (executive) with a president, maire, or syndic. In the smaller communes there is a council only.

TURKEY.

The constitution of 1876, suspended on the outbreak of the war with Russia in 1877, was restored July 24, 1908, as a result of the Young Turk movement. Under the new constitution the Sultan, who is the protector of the Moslem religion, appoints and dismisses his ministers, concludes all treaties, declares war, is the head of the military and naval forces, and can dissolve the Chamber of Deputies, in which case a new election must be held within six months. The press and education are free, and all Ottomans are equal before the law. Parliament consists of the Senate and the Chamber of Deputies and sits annually from November 1st to March 1st. Senators are nominated by the Sultan, and the total number must not exceed one third that of the Chamber. They receive 10,000 piastres a month. The Chamber consists of deputies elected by ballot for four years in the proportion of one deputy to 50,000 male citizens. Deputies must be Ottomans, able to read and write Turkish, and over 30. Public servants are ineligible. Each deputy receives 20,000 piastres a session and traveling expenses. The initiative in legislation lies with the Ministry, but either chamber can demand the introduction of new measures, subject to the approval of the Sultan. On passing both chambers and receiving the sanction of the Sultan, an act becomes law.

LOCAL GOVERNMENT.—Provincial administration is based on the principle of decentralization, and for this purpose the empire is divided into 30 *vilayets*, or governments, and subdivided into *sanjaks*, or provinces, *kazas*, or districts, *nahiés*, or subdistricts, *kariés*, or communities, and municipal councils in the cities.

URUGUAY.

The republic of Uruguay, the smallest of the South American republics, declared its independence, August 25, 1825. By the constitution of 1830 the executive is vested in a President, elected for four years by the two chambers sitting together as a General Assembly. The Legislature consists of a Senate of 19, chosen for six years by an electoral college, one third retiring every two years, and a Chamber of 75 elected for three years. In the intervals between the annual sessions, a permanent committee of two senators and five deputies assumes legislative power and control of general administration.

LOCAL GOVERNMENT.—Each territorial department is ruled by an executive, appointed by the President, and an administrative council chosen by popular election.

VENEZUELA.

The republic, consisting of the federal states and five territories, was formed in 1830 by secession from the republic of Colombia. The President is assisted by and elected (for a period of six years) from a Federal Council of 19 members, appointed by Congress within 15 days of its first meeting. Congress is composed of a Senate of 26 elected by the legislatures of each state, and a House of Representatives elected indirectly. The term of office for both houses is six years. The constituent states have each their own legislature and executive.

LOCAL GOVERNMENT.—The states are divided into districts and these into *municipios*, each district and municipio having a civil chief. Each district has a municipal council of 7 elected in the municipios for three years, and each municipio has a communal junta appointed by the municipal council.

The Federal territories are administered by governors, nominated by the President of the republic. Territories are divided into municipios, each of which has a civil chief appointed by the governor.

UNITED STATES OF AMERICA.

Constitution and Government.—A Congress representing the thirteen original colonies declared their independence of Great Britain July 4, 1776, and thereafter each colony was known as a State.

Text of the Declaration of Independence.

In Congress, July 4, 1776. The unanimous Declaration of the Thirteen United States of America.

When, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the laws of nature and of nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident: That all men are created equal; that they are endowed, by their Creator, with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness. That, to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed; that, whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles, and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate that governments long established should not be changed for light and transient causes; and accordingly all experience hath shown that mankind are more disposed to suffer while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object, evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of these colonies; and such is now the necessity which constrains them to alter their former systems of government. The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these States. To prove this, let facts be submitted to a candid world.

He has refused his assent to laws the most wholesome and necessary for the public good.

He has forbidden his governors to pass laws of immediate and pressing importance, unless suspended in their operation till his assent should be obtained; and when so suspended, he has utterly neglected to attend to them.

He has refused to pass other laws for the accommodation of large districts of people, unless those people would relinquish the right of representation in the legislature—a right inestimable to them, and formidable to tyrants only.

He has called together legislative bodies at places unusual, uncomfortable, and distant from the depository of their public records, for the sole purpose of fatiguing them into compliance with his measures.

He has dissolved representative houses repeatedly, for opposing with manly firmness his invasions on the rights of the people.

He has refused, for a long time after such dissolutions, to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large for their exercise, the State remaining, in the meantime, exposed to all the dangers of invasion from without, and convulsions within.

He has endeavored to prevent the population of these States; for that purpose obstructing the laws for naturalization of foreigners; refusing to pass others to encourage their migration hither, and raising the conditions of new appropriations of lands.

He has obstructed the administration of justice, by refusing his assent to laws for establishing judiciary powers.

He has made judges dependent on his will alone, for the tenure of their offices, and the amount and payment of their salaries.

He has erected a multitude of new offices, and sent hither swarms of officers to harass our people, and eat out their substance.

He has kept among us, in times of peace, standing armies, without the consent of our legislature.

He has affected to render the military independent of and superior to the civil power.

He has combined with others to subject us to a jurisdiction foreign to our constitution, and unacknowledged by our laws; giving his assent to their acts of pretended legislation:

For quartering large bodies of armed troops among us;

For protecting them, by a mock trial, from punishment for any murders which they should commit on the inhabitants of these States;

For cutting off our trade with all parts of the world;

For imposing taxes on us without our consent;

For depriving us, in many cases, of the benefits of trial by jury;

For transporting us beyond seas to be tried for pretended offenses;

For abolishing the free system of English laws in a neighboring province, establishing therein an arbitrary government, and enlarging its boundaries so as to render it at once an example and fit instrument for introducing the same absolute rule into these colonies;

For taking away our charters, abolishing our most valuable laws, and altering fundamentally the forms of our governments;

For suspending our own legislatures and declaring themselves invested with power to legislate for us in all cases whatsoever.

He has abdicated government here, by declaring us out of his protection and waging war against us.

He has plundered our seas, ravaged our coasts, burnt our towns, and destroyed the lives of our people.

He is at this time transporting large armies of foreign mercenaries to complete the works of death, desolation, and tyranny, already begun with circumstances of cruelty and perfidy scarcely paralleled in the most barbarous ages, and totally unworthy the head of a civilized nation.

He has constrained our fellow-citizens, taken captive on the high seas, to bear arms against their country, to become the executioners of their friends and brethren, or to fall themselves by their hands.

He has excited domestic insurrections among us, and has endeavored to bring on the inhabitants of our frontiers the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes, and conditions.

In every stage of these oppressions we have petitioned for redress in the most humble terms; our repeated petitions have been answered only by repeated injury. A prince whose character is thus marked by every act which may define a tyrant is unfit to be the ruler of a free people.

Nor have we been wanting in attention to our British brethren. We have warned them from time to time of attempts by their legislature to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity; and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connections and correspondence. They, too, have been deaf to the voice of justice and of consanguinity. We must, therefore, acquiesce in the necessity which denounces our separation, and hold them, as we hold the rest of mankind, enemies in war, in peace friends.

We, therefore, the Representatives of the United States of America, in General Congress assembled, appealing to the Supreme Judge of the world for the rectitude of our intentions, do, in the name and by authority of the good people of these Colonies, solemnly publish and declare, That these United Colonies are, and of right ought to be, free and independent States; that they are absolved from all allegiance to the British crown, and that all political connection between them and the State of Great Britain is, and ought to be, totally dissolved; and that, as free and independent States, they have full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which independent States may of right do. And, for the support of this declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our lives, our fortunes, and our sacred honor.

JOHN HANCOCK.

NEW HAMPSHIRE.
Josiah Bartlett,
William Whipple,
Matthew Thornton.

MASSACHUSETTS BAY.
Samuel Adams,
John Adams,
Robert Treat Paine,
Elbridge Gerry.

RHODE ISLAND.
Stephen Hopkins,
William Ellery.

CONNECTICUT.
Roger Sherman,
Samuel Huntington,
William Williams,
Oliver Wolcott.

NEW YORK.
William Floyd,
Philip Livingston,
Francis Lewis,
Lewis Morris.

NEW JERSEY.
Richard Stockton,
John Witherspoon,
Francis Hopkinson,
John Hart,
Abraham Clark.

PENNSYLVANIA.
Robert Morris,
Benjamin Rush,
Benjamin Franklin,
John Morton,
George Clymer,
James Smith,
George Taylor,
James Wilson,
George Ross.

DELAWARE.
Caesar Rodney,
George Read,
Thomas M'Kean.

MARYLAND.
Samuel Chase,
William Paca,
Thomas Stone,
Charles Carroll, of Carrollton.

VIRGINIA.
George Wythe,
Richard Henry Lee,
Thomas Jefferson,
Benjamin Harrison,
Thomas Nelson, Jr.,
Francis Lightfoot Lee,
Carter Braxton.

NORTH CAROLINA.
William Hooper,
Joseph Hewes,
John Penn.

SOUTH CAROLINA.
Edward Rutledge,
Thomas Heyward, Jr.,
Thomas Lynch, Jr.,
Arthur Middleton.

GEORGIA.
Button Gwinnett,
Lyman Hall,
George Walton.

IN CONGRESS, JANUARY 18, 1777.

Ordered:
That an authenticated copy of the Declaration of Independence, with the names of the members of Congress subscribing the same, be sent to each of the United States, and that they be desired to have the same put on record.
By order of Congress.
JOHN HANCOCK, *President*.
Attest, CHAS. THOMSON, *Secy*.
A true copy.
JOHN HANCOCK, *Pres'dt*.

Signers of the Declaration of Independence.

NAME.	Order.*	Colony.	Occupation.	Born.	Birthplace.	Died.	Age.†
Adams, John	6	Massachusetts Bay	Lawyer	Oct. 19, 1735	Braintree, Mass.	July 4, 1826	92
Adams, Samuel	2	Massachusetts Bay	Merchant	Sept. 22, 1722	Boston, Mass.	Oct. 3, 1803	81
Bartlett, Josiah	9	New Hampshire	Physician	Nov., 1729	Amesbury, Mass.	May 19, 1795	67
Braxton, Carter	51	Virginia	Planter	Sept. 10, 1736	Newington, Va.	Oct. 10, 1797	62
Carroll, Charles	31	Maryland	Lawyer	Sept. 20, 1737	Annapolis, Md.	Nov. 14, 1832	96
Chase, Samuel	44	Maryland	Lawyer	Apr. 17, 1741	Somerset Co., Md.	June 19, 1811	71
Clark, Abraham	14	New Jersey	Lawyer	Feb. 15, 1726	Elizabethtown, N. J.	Sept., 1794	69
Clymer, George	38	Pennsylvania	Merchant	Jan. 24, 1739	Philadelphia, Pa.	Jan. 23, 1813	75
Ellery, William	22	R. I. and Prov. Plan.	Lawyer	Dec. 22, 1727	Newport, R. I.	Feb. 15, 1820	93
Floyd, William	5	New York	Farmer	Dec. 17, 1734	Setauket, N. Y.	Aug. 1, 1821	87
Franklin, Benjamin	46	Pennsylvania	Printer	Jan. 17, 1706	Boston, Mass.	Apr. 17, 1790	85
Gerry, Elbridge	8	Massachusetts Bay	Merchant	July 17, 1744	Marblehead, Mass.	Nov. 23, 1814	71
Gwinnett, Button	40	Georgia	Merchant	1732	England	May 27, 1777	45
Hancock, John	1	Massachusetts Bay	Merchant	Jan. 12, 1737	Braintree, Mass.	Oct. 8, 1793	57
Hall, Lyman	47	Georgia	Physician	1731	Conn.	1784	53
Harrison, Benj.	54	Virginia	Farmer	1740	Berkeley, Va.	April, 1791	51
Hart, John	13	New Jersey	Farmer	1715	Hopewell, N. J.	1780	65
Hewes, Joseph	35	North Carolina	Lawyer	1730	Kingston, N. J.	Nov. 10, 1779	49
Heyward, Jr., Thos.	56	South Carolina	Lawyer	1746	St. Luke's, S. C.	March, 1809	63
Hooper, Wm.	23	North Carolina	Lawyer	June 17, 1742	Boston, Mass.	Oct., 1790	49
Hopkins, Steph.	12	R. I. and Prov. Plan.	Farmer	Mar. 7, 1707	Scituate, Mass.	July 13, 1785	79
Hopkinson, Francis	29	New Jersey	Lawyer	1737	Philadelphia, Pa.	May 9, 1791	54
Huntington, Sam'l	11	Connecticut	Lawyer	July 3, 1732	Windham, Conn.	Jan. 5, 1796	64
Jefferson, Thos.	32	Virginia	Lawyer	Apr. 13, 1743	Shadwell, Va.	July 4, 1826	83
Lee, Richard Henry	48	Virginia	Soldier	Jan. 20, 1732	Stratford, Va.	June 19, 1794	63
Lee, Francis Lightfoot	55	Virginia	Farmer	Oct. 14, 1734	Stratford, Va.	April, 1797	63
Lewis, Francis	7	New York	Merchant	March, 1713	Llandaff, Wales.	Dec. 30, 1803	91
Livingston, Philip	3	New York	Merchant	Jan. 15, 1716	Albany, N. Y.	June 12, 1778	63
Lynch, Jr., Thos.	43	South Carolina	Lawyer	Aug. 5, 1749	Pr. George's Co., S. C.	1779	30
M'Kean, Thos.	39	Delaware	Lawyer	Mar. 19, 1734	New London, Pa.	June 24, 1817	84
Middleton, Arthur	50	South Carolina	Lawyer	1743	Middleton Pl., S. C.	Jan. 1, 1788	44
Morris, Lewis	15	New York	Farmer	1726	Morrisania, N. Y.	Jan. 22, 1798	72
Morris, Robert	24	Pennsylvania	Merchant	Jan. 20, 1734	Lancashire, Eng.	May 8, 1806	73
Morton, John	16	Pennsylvania	Surveyor	1724	Ridley, Pa.	April, 1777	53
Nelson, Jr., Thos.	49	Virginia	Statesman	Dec. 26, 1738	York, Va.	Jan. 4, 1789	51
Paca, William	28	Maryland	Lawyer	Oct. 31, 1740	Wye Hall, Md.	1799	59
Paine, Robert Treat	4	Massachusetts Bay	Lawyer	1731	Boston, Mass.	May 11, 1814	84
Penn, John	18	North Carolina	Lawyer	May 17, 1741	Caroline Co., Va.	Sept., 1788	48
Read, George	41	Delaware	Lawyer	1734	Cecil Co., Md.	1798	64
Rodney, Cæsar	52	Delaware	General	1730	Dover, Del.	1783	53
Ross, George	37	Pennsylvania	Lawyer	1730	Newcastle, Del.	July, 1779	49
Rush, Benjamin	46	Pennsylvania	Physician	Dec. 24, 1745	Berberry, Pa.	Apr. 19, 1813	68
Rutledge, Edward	34	South Carolina	Lawyer	Nov., 1749	Charleston, S. C.	Jan. 23, 1800	51
Sherman, Roger	19	Connecticut	Shoemaker	Apr. 19, 1721	Newton, Mass.	July 23, 1793	73
Smith, James	36	Pennsylvania	Lawyer	1710	Ireland.	July 11, 1806	96
Stockton, Richard	10	New Jersey	Lawyer	Oct. 1, 1730	Princeton, N. J.	Feb. 28, 1781	51
Stone, Thomas	30	Maryland	Lawyer	1742	Pointoin Manor, Md.	Oct. 5, 1787	45
Taylor, Geo.	33	Pennsylvania	Physician	1716	Ireland.	Feb. 23, 1781	65
Thornton, Matthew	17	New Hampshire	Physician	1714	Ireland.	June 24, 1803	89
Walton, George	53	Georgia	Lawyer	1740	Frederick Co., Va.	Feb. 2, 1804	64
Whipple, William	20	New Hampshire	Sailor	1730	Kittery, Me.	Nov. 28, 1785	55
Williams, William	26	Connecticut	Statesman	Apr. 8, 1731	Lebanon, Conn.	Aug. 2, 1811	81
Wilson, James	42	Pennsylvania	Lawyer	1742	St. Andrews, Scot.	Aug. 28, 1798	56
Witherspoon, John	21	New Jersey	Minister	Feb. 5, 1722	Yester, Scot.	Nov. 15, 1794	73
Wolcott, Oliver	25	Connecticut	Physician	Nov. 26, 1726	Windsor, Conn.	Dec. 1, 1797	72
Wythe, George	45	Virginia	Lawyer	1726	Elizabeth Co., Va.	June 8, 1806	80

*Order in which they signed. †Age at death.

As a result of the war with Great Britain, the latter acknowledged the independence of the United States November 30, 1782, and September 3, 1783, a definitive treaty of peace was concluded at Paris. The government of the United States continued under the Congress provided by the Articles of Confederation until March 4, 1789, when a constitution, which had been adopted by representatives of the different States September 17, 1787, went into effect. March 4, 1789, then, is the date of the inception of the present constitutional government of the American Union. The original, without amendments, contains only 4,000 words.

Constitution of the United States of America.

(Went into operation first Wednesday in March, 1789.)

PREAMBLE.—We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.

ARTICLE I.

SECTION I. All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

SECTION II. The House of Representatives shall be composed of members chosen every second year by the people of the several States; and the electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislature.

No person shall be a Representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

Representatives and direct taxes shall be apportioned among the several States which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of Representatives shall not exceed one for every thirty thousand, but each State shall have at least one Representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to choose three; Massachusetts, eight; Rhode Island and Providence Plantations, one; Connecticut, five; New York, six; New Jersey, four; Pennsylvania, eight; Delaware, one; Maryland, six; Virginia, ten; North Carolina, five; South Carolina, five, and Georgia, three.

When vacancies happen in the representation from any State, the executive authority thereof shall issue writs of election to fill such vacancies.

The House of Representatives shall choose their speaker and other officers; and shall have the sole power of impeachment.

SECTION III. The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof for six years; and each Senator shall have one vote.

Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the Senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one third may be chosen every second year; and if vacancies happen by resignation, or otherwise, during the recess of the Legislature of any State, the executive thereof may make temporary appointments until the next meeting of the Legislature, which shall then fill such vacancies.

No person shall be a Senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State for which he shall be chosen.

The Vice-President of the United States shall be President of the Senate, but shall have no vote unless they be equally divided.

The Senate shall choose their other officers, and also a President pro tempore, in the absence of the Vice-President, or when he shall exercise the office of President of the United States.

The Senate shall have the sole power to try all impeachments. When sitting for that purpose, they shall be on oath or affirmation. When the President of the United States is tried, the Chief Justice shall preside; and no person shall be convicted without the concurrence of two thirds of the members present.

Judgment in cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

SECTION IV. The times, places, and manner of holding elections for Senators and Representatives shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by law make or alter such regulations, except as to the places of choosing Senators.

The Congress shall assemble at least once in every year; and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

SECTION V. Each House shall be the judge of the election, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner and under such penalties as each House may provide.

Each House may determine the rules of its proceedings, punish its members for disorderly behavior, and, with the concurrence of two thirds, expel a member.

Each House shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy; and the yeas and nays of the members of either House on any question shall, at the desire of one fifth of those present, be entered on the journal.

Neither House, during the session of Congress, shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two houses shall be sitting.

SECTION VI. The Senators and Representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall, in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the sessions of their respective Houses, and in going to and returning from the same; and for any speech or debate in either House, they shall not be questioned in any other place.

No Senator or Representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States which shall have been created, or the emoluments whereof shall have been increased during such time; and no person holding any office under the United States shall be a member of either House during his continuance in office.

SECTION VII. All bills for raising revenue shall originate in the House of Representatives, but the Senate may propose or concur with amendments, as on other bills.

Every bill which shall have passed the House of Representatives and the Senate shall, before it become a law, be presented to the President of the United States; if he approve, he shall sign it, but if not, he shall return it, with his objections, to that House in which it shall have originated, who shall enter the objections at large on their journal, and proceed to reconsider it. If after such reconsideration two thirds of that House shall agree to pass the bill, it shall be sent, together with the objections, to the other House, by which it shall likewise be reconsidered; and if approved by two thirds of that House it shall become a law. But in all such cases the votes of both Houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each House respectively. If any bill shall not be returned by the President within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law in like manner as if he had signed it, unless the Congress by their adjournment, prevent its return; in which case it shall not be a law.

Every order, resolution, or vote to which the concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment) shall be presented to the President of the United States; and before the same shall take effect shall be approved by him, or being disapproved by him, shall be repassed by two thirds of the Senate and House of Representatives, according to the rules and limitations prescribed in the case of a bill.

SECTION VIII. The Congress shall have power:

To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.

To borrow money on the credit of the United States.

To regulate commerce with foreign nations, and among the several States, and with the Indian tribes.

To establish an uniform rule of naturalization and uniform laws on the subject of bankruptcies throughout the United States.

To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures.

To provide for the punishment of counterfeiting the securities and current coin of the United States.

To establish post offices and post roads.

To promote the progress of science and useful arts by securing for limited times to authors and inventors

the exclusive right to their respective writings and discoveries.

To constitute tribunals inferior to the Supreme Court.

To define and punish piracies and felonies committed on the high seas, and offenses against the law of nations.

To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water.

To raise and support armies, but no appropriation of money to that use shall be for a longer term than two years.

To provide and maintain a navy.

To make rules for the government and regulation of the land and naval forces.

To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions.

To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the States respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress.

To exercise exclusive legislation in all cases whatsoever over such district (not exceeding ten miles square) as may, by cession of particular States and the acceptance of Congress, become the seat of the Government of the United States, and to exercise like authority over all places purchased by the consent of the Legislature of the State in which the same shall be, for the erection of forts, magazines, arsenals, dockyards, and other needful buildings; and

To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the Government of the United States, or in any department or officer thereof.

SECTION IX. The migration or importation of such persons as any of the States now existing shall think proper to admit shall not be prohibited by the Congress prior to the year one thousand eight hundred and eight, but a tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

The privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

No bill of attainder or ex post facto law shall be passed.

No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

No tax or duty shall be laid on articles exported from any State.

No preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another, nor shall vessels bound to or from one State be obliged to enter, clear, or pay duties in another.

No money shall be drawn from the Treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

No title of nobility shall be granted by the United States. And no person holding any office of profit or trust under them shall, without the consent of the Congress, accept of any present, emolument, office, or title of any kind whatever from any king, prince, or foreign state.

SECTION X. No State shall enter into any treaty, alliance, or confederation, grant letters of marque and reprisal, coin money, emit bills of credit, make anything but gold and silver coin a tender in payment of debts, pass any bill of attainder, ex post facto law, or law impairing the obligation of contracts, or grant any title of nobility.

No State shall, without the consent of the Congress, lay any impost or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws, and the net produce of all duties and imposts, laid by any State on imports or exports, shall be for the use of the Treasury of the United States; and all such laws shall be subject to the revision and control of the Congress.

No State shall, without the consent of Congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another State, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II.

SECTION I. The Executive power shall be vested in a President of the United States of America. He shall hold his office during the term of four years, and, together with the Vice-President, chosen for the same term, be elected as follows:

Each State shall appoint, in such manner as the Legislature thereof may direct, a number of electors, equal to the whole number of Senators and Representatives to which the State may be entitled in the Congress; but no Senator or Representative or person holding an office of trust or profit under the United States shall be appointed an elector.

[The electors shall meet in their respective States and vote by ballot for two persons, of whom one at least shall not be an inhabitant of the same State with themselves. And they shall make a list of all the persons voted for, and of the number of votes for each, which list they shall sign and certify and transmit, sealed, to the seat of the government of the United States, directed to the President of the Senate. The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes shall be the President, if such number be a majority of the whole number of electors appointed, and if there be more than one who have such majority, and have an equal number of votes, then the House of Representatives shall immediately choose by ballot one of them for President; and if no person have a majority, then from the five highest on the list the said House shall in like manner choose the President. But in choosing the President, the vote shall be taken by States, the representation from each State having one vote. A quorum, for this purpose, shall consist of a member or members from two thirds of the States, and a majority of all the States shall be necessary to a choice. In every case, after the choice of the President, the person having the greatest number of votes of the electors shall be the Vice-President. But if there should remain two or more who have equal votes, the Senate shall choose from them by ballot the Vice-President.][1]

The Congress may determine the time of choosing the electors and the day on which they shall give their votes, which day shall be the same throughout the United States.

No person except a natural born citizen, or a citizen of the United States at the time of the adoption of this Constitution, shall be eligible to the office of President; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years and been fourteen years a resident within the United States.

In case of the removal of the President from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the Vice-President, and the Congress may by law provide for the case of removal, death, resignation, or inability, both of the President and Vice-President, declaring what officer shall then act as President, and such officer shall act accordingly until the disability be removed or a President shall be elected.

The President shall, at stated times, receive for his services a compensation, which shall neither be increased nor diminished during the period for which he shall have been elected, and he shall not receive within that period any other emolument from the United States, or any of them.

Before he enter on the execution of his office he shall take the following oath or affirmation:—

"I do solemnly swear (or affirm) that I will faithfully execute the office of President of the United States, and will, to the best of my ability, preserve, protect, and defend the Constitution of the United States."

SECTION II. The President shall be Commander-in-Chief of the Army and Navy of the United States, and of the militia of the several States when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offenses against the United States except in cases of impeachment.

He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two thirds of the Senators present concur; and he shall nominate, and by and with the advice and consent of the Senate shall appoint ambassadors, other public ministers and consuls, judges of the Supreme Court, and all other officers of the United States whose appointments are not herein otherwise provided for, and which shall be established by law; but the Congress may by law vest the appointment of such inferior officers as they think proper in the President alone, in the courts of law, or in the heads of departments.

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[1] Superseded by Article XII., Amendments.

The President shall have power to fill up all vacancies that may happen during the recess of the Senate by granting commissions which shall expire at the end of their next session.

SECTION III. He shall from time to time give to the Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may, on extraordinary occasions, convene both Houses, or either of them, and in case of disagreement between them with respect to the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed, and shall commission all the officers of the United States.

SECTION IV. The President, Vice-President, and all civil officers of the United States shall be removed from office on impeachment for and conviction of treason, bribery, or other high crimes and misdemeanors.

ARTICLE III.

SECTION I. The judicial power of the United States shall be vested in one Supreme Court, and in such inferior courts as the Congress may from time to time ordain and establish. The judges, both of the Supreme and inferior courts, shall hold their offices during good behavior, and shall at stated times receive for their services a compensation which shall not be diminished during their continuance in office.

SECTION II. The judicial power shall extend to all cases in law and equity arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers, and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more States, between a State and citizens of another State, between citizens of different States, between citizens of the same State claiming lands under grants of different States, and between a State, or the citizens thereof, and foreign States, citizens, or subjects.

In all cases affecting ambassadors, other public ministers, and consuls, and those in which a State shall be party, the Supreme Court shall have original jurisdiction. In all the other cases before mentioned the Supreme Court shall have appellate jurisdiction both as to law and fact, with such exceptions and under such regulations as the Congress shall make.

The trial of all crimes, except in cases of impeachment, shall be by jury, and such trial shall be held in the State where the said crimes shall have been committed; but when not committed within any State the trial shall be at such place or places as the Congress may by law have directed.

SECTION III. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court.

The Congress shall have power to declare the punishment of treason, but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

ARTICLE IV.

SECTION I. Full faith and credit shall be given in each State to the public acts, records, and judicial proceedings of every other State. And the Congress may by general laws prescribe the manner in which such acts, records, and proceedings shall be proved, and the effect thereof.

SECTION II. The citizens of each State shall be entitled to all privileges and immunities of citizens in the several States.

A person charged in any State with treason, felony, or other crime, who shall flee from justice, and be found in another State, shall, on demand of the Executive authority of the State from which he fled, be delivered up, to be removed to the State having jurisdiction of the crime.

No person held to service or labor in one State, under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due.

SECTION III. New States may be admitted by the Congress into this Union; but no new State shall be formed or erected within the jurisdiction of any other State, nor any State be formed by the junction of two or more States, or parts of States, without the consent of the Legislatures of the States concerned, as well as of the Congress.

The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular State.

SECTION IV. The United States shall guarantee to every State in this Union a republican form of government, and shall protect each of them against invasion, and, on application of the Legislature, or of the Executive (when the Legislature cannot be convened), against domestic violence.

ARTICLE V.

The Congress, whenever two thirds of both Houses shall deem it necessary, shall propose amendments to this Constitution, or, on the application of the Legislatures of two thirds of the several States, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes, as part of this Constitution, when ratified by the Legislatures of three fourths of the several States, or by conventions in three fourths thereof, as the one or the other mode of ratification may be proposed by the Congress; provided that no amendment which may be made prior to the year one thousand eight hundred and eight shall in any manner affect the first and fourth clauses in the Ninth Section of the First Article; and that no State, without its consent, shall be deprived of its equal suffrage in the Senate.

ARTICLE VI.

All debts contracted and engagements entered into before the adoption of this Constitution shall be as valid against the United States under this Constitution as under the Confederation.

This Constitution and the laws of the United States which shall be made in pursuance thereof and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land, and the judges in every State shall be bound thereby, anything in the Constitution or laws of any State to the contrary notwithstanding.

The Senators and Representatives before mentioned, and the members of the several State Legislatures, and all executive and judicial officers, both of the United States and of the several States, shall be bound by oath or affirmation to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

The ratification of the Conventions of nine States shall be sufficient for the establishment of this Constitution between the States so ratifying the same.

Ratification of the Constitution by the Thirteen Original States.

	States.	Ratified the Constitution.	Vote.
1	Delaware	December 7....1787	Unanimous
2	Pennsylvania	December 12...1787	46 to 23
3	New Jersey	December 18...1787	Unanimous
4	Georgia	January 2.....1788	Unanimous
5	Connecticut	January 9.....1788	128 to 40
6	Massachusetts	February 6....1788	187 to 168
7	Maryland	April 28.....1788	63 to 12
8	South Carolina	May 23.....1788	149 to 73
9	New Hampshire	June 21.....1788	57 to 46
10	Virginia	June 26.....1788	89 to 79
11	New York	July 26.....1788	30 to 28
12	North Carolina	November 21..1789	193 to 75
13	Rhode Island	May 29.....1790	34 to 32

Amendments to the Constitution.

Ten amendments were added to the original Constitution Dec. 15, 1791; the eleventh amendment, Jan. 8, 1798; the twelfth amendment, Sept. 25, 1804; the thirteenth amendment, Dec. 18, 1865; the fourteenth amendment, July 28, 1868; and the fifteenth amendment, March 30, 1870. Amendments proposed by the Congress must be adopted by three fourths of the States, acting through their legislatures.

ARTICLE I.

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise there-

of; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

ARTICLE II.

A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV.

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V.

No person shall be held to answer for a capital or otherwise infamous crime unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI.

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

ARTICLE VII.

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law.

ARTICLE VIII.

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.

The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

ARTICLE XI.

The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another State, or by citizens or subjects of any foreign State.

ARTICLE XII.

The electors shall meet in their respective States, and vote by ballot for President and Vice-President, one of whom at least shall not be an inhabitant of the same State with themselves; they shall name in their ballots the person voted for as President, and in distinct ballots the person voted for as Vice-President; and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each, which lists they shall sign and certify, and transmit, sealed, to the seat of the Government of the United States, directed to the President of the Senate; the President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted; the person having the greatest number of votes for President shall be the President, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But in choosing the President, the votes shall be taken by States, the representation from each State having one vote; a quorum for this purpose shall consist of a member or members from two thirds of the States, and a majority of all the States shall be necessary to a choice. And if the House of Representatives shall not choose a President, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President. The person having the greatest number of votes as Vice-President shall be the Vice-President, if such number be a majority of the whole number of electors appointed; and if no person have a majority, then from the two highest numbers on the list the Senate shall choose the Vice-President; a quorum for the purpose shall consist of two thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

ARTICLE XIII.

SECTION 1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

SECTION 2. Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV.

SECTION 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

SECTION 2. Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the executive and judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male inhabitants of such State, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

SECTION 3. No person shall be a Senator or Representative in Congress, or elector of President and Vice-President, or hold any office, civil or military, under the United States, or under any State, who, having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State Legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may, by a vote of two thirds of each House, remove such disability.

SECTION 4. The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

SECTION 5. The Congress shall have power to enforce by appropriate legislation the provisions of this article.

ARTICLE XV.

SECTION 1. The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

SECTION 2. The Congress shall have power to enforce this article by appropriate legislation.

CUBA.

After three years administration by U. S. War Department, the Constitution of Cuba was adopted by Constitutional Convention Feb. 21, 1901. It differs very slightly from that of United States. The President must be a native or naturalized Cuban, serving ten years in wars for independence, and is elected directly for four years, disqualified from more than two consecutive terms. A Senate, of four members from each province, retires one half each four years; a House of Representatives, one for each 25,000 inhabitants, retires one half each two years. The franchise belongs to Cuban male citizens over 21 years (not ineligible by crime, etc.); to Spaniards resident since April 11, 1899; and to all foreigners resident since Jan. 1, 1899. Five years' residence is required for naturalization of foreigners arriving on the island after January 1, 1899. Congress meets annually. The municipal officers are elected directly by popular vote.

LOCAL GOVERNMENT. For administrative purposes the republic is divided into six provinces; the Governors and Assemblies are elected directly every three years. The municipalities are administered by mayors and assemblies elected directly by popular vote.

States Admitted to the Union.

	States.	Admitted.[1]
1	Vermont	1791, March 4.
2	Kentucky	1792, June 1.
3	Tennessee	1796, June 1.
4	Ohio	1803, February 19.
5	Louisiana	1812, April 30.
6	Indiana	1816, December 11.
7	Mississippi	1817, December 10.
8	Illinois	1818, December 3.
9	Alabama	1819, December 14.
10	Maine	1820, March 15.
11	Missouri	1821, August 10.
12	Arkansas	1836, June 15.
13	Michigan	1837, January 26.
14	Florida	1845, March 3.
15	Texas	1845, December 29.
16	Iowa	1846, December 28.
17	Wisconsin	1848, May 29.
18	California	1850, September 9.
19	Minnesota	1858, May 11.
20	Oregon	1859, February 14.
21	Kansas	1861, January 29.
22	West Virginia	1863, June 19.
23	Nevada	1864, October 31.
24	Nebraska	1867, March 1.
25	Colorado	1876, August 1.
26	North Dakota	1889, November 2.
27	South Dakota	1889, November 2.
28	Montana	1889, November 8.
29	Washington	1889, November 11.
30	Idaho	1890, July 3.
31	Wyoming	1890, July 11.
32	Utah	1896, January 4.
33	Oklahoma	1907, November 16.

[1]Date when admission took effect is given from U. S. Census reports. In many instances the act of admission by Congress was passed on a previous date.

The Territories.

Territories.	Organized.
New Mexico	September 9, 1850
Arizona	February 24, 1863
District of Columbia	July 16, 1790; March 3, 1791
District of Alaska	July 27, 1868
Hawaii	June 14, 1900

New Possessions.	Acquired.
Guam	April 11, 1899.
Philippine Islands	April 11, 1899.
Porto Rico	April 11, 1899.
Tutuila Group	March 8, 1900.
Samoa	March 8, 1900.
Panama Canal Zone	February 26, 1904.

State and Territorial Statistics.

States and Territories.[1]	Gross Area in Square Miles.[2]	Extreme Breadth, Miles.[3]	Extreme Length, Miles.	Capitals.
Alabama	51,998	200	330	Montgomery.
Alaska Ter.	590,884	800	1,100	Sitka.
Arizona Ter.	113,956	335	390	Phœnix.
Arkansas	53,335	275	240	Little Rock.
California	158,297	375	770	Sacramento.
Colorado	103,948	390	270	Denver.
Connecticut	4,965	90	75	Hartford.
Delaware	2,370	35	110	Dover.
Dist. of Col.	70	9	10	Washington.
Florida	58,666	400	460	Tallahassee.
Georgia	59,265	250	315	Atlanta.
Idaho	84,313	305	490	Boise.
Illinois	56,665	205	380	Springfield.
Indiana	36,354	160	265	Indianapolis.
Iowa	56,147	300	210	Des Moines.
Kansas	82,158	400	200	Topeka.
Kentucky	40,598	350	175	Frankfort.
Louisiana	48,506	280	275	Baton Rouge.
Maine	33,040	205	235	Augusta.
Maryland	12,327	200	120	Annapolis.
Massachusetts	8,266	190	110	Boston.
Michigan	57,980	310	400	Lansing.
Minnesota	84,682	350	400	St. Paul.
Mississippi	46,865	180	340	Jackson.
Missouri	69,420	300	280	Jefferson City.
Montana	146,572	580	315	Helena.
Nebraska	77,520	415	205	Lincoln.
Nevada	110,690	315	485	Carson City.
New Hamp.	9,341	90	185	Concord.
New Jersey	8,224	70	160	Trenton.
N. Mexico Ter.	122,634	350	390	Santa Fé.
New York	49,204	320	310	Albany.
North Carolina	52,426	520	200	Raleigh.
North Dakota	70,837	360	210	Bismarck.
Ohio	41,040	230	205	Columbus.
Oklahoma	70,057	575	210	Guthrie.
Oregon	96,699	375	290	Salem.
Pennsylvania	45,126	300	180	Harrisburg.
Rhode Island	1,248	35	50	Providence.
South Carolina	30,989	235	215	Columbia.
South Dakota	77,615	380	245	Pierre.
Tennessee	42,022	430	120	Nashville.
Texas	265,896	760	620	Austin.
Utah	84,990	275	345	Salt Lake City.
Vermont	9,564	90	155	Montpelier.
Virginia	42,627	425	205	Richmond.
Washington	69,127	340	230	Olympia.
West Virginia	24,170	200	225	Charleston.
Wisconsin	56,066	290	300	Madison.
Wyoming	97,914	365	275	Cheyenne.
New Poss'ions.	125,671	....	....	
Total U. S.	3,743,344	2,720[4]	1,600[4]	

[1]Areas of the new possessions: Philippines, 115,026 square miles; Porto Rico, 3,435; Hawaii, 6,449; Tutuila and islets, 77; Guam, 210; Panama Canal strip, 474. [2]Gross area includes water as well as land surface. These areas are those published by the United States Census Office in 1900. [3]Breadth is from east to west. Length is from north to south. [4]Breadth from Quoddy Head, in Maine, to Cape Flattery, in Washington; length from the 49th parallel to Brownsville, on the Rio Grande. This is exclusive of Alaska.

By the Constitution, the government of the United States is conducted by three distinct departments, the executive, the legislative, and the judicial.

Executive.—The executive power is centered in a President, Vice-President, and nine chief officers or heads of departments called secretaries, who are collectively known by the popular term of the Cabinet.

President.—The head of the government holds office during a term of four years. Candidates for this office are nominated by the respective parties at what are known as national conventions. In the conduct of party affairs the chief instrument is the standing party committee composed of one member from each state. These are elected every year by the delegation of their states at the national convention. The first

year in which political parties had regular conventions, nominated candidates, and framed platforms was in 1840, and this system has been conducted uninterruptedly since. The Republican Convention at Chicago in 1860 was the first conducted in a large building in the presence of spectators. The membership of a national convention is composed usually of two delegates for each congressional district, four at large for each state, and six from each territory, making a total of about 1,000. To insure attendance of representatives a large number of alternates are appointed. A temporary chairman appointed by the national committee opens the convention. A permanent chairman is then elected, a committee on credentials is appointed, and the convention is organized ready to receive the report of the committee. Sometimes the platform is drawn up before the nominations are made. Friends of the aspirants for nomination present the name after a laudatory speech, and the selection is made by votes of the delegates. The candidate is notified of his nomination by a committee, before whom he makes a speech of acceptance, though this sometimes takes the form of a letter.

Campaign.—Political parties are thoroughly organized and are conducted upon sound business principles. This work is conducted by the party committees and their chairmen. The chairman of a political party is a man with large influence, which he exerts to the utmost in his efforts to bring out the vote and to influence the voters, and these efforts may take the form of simple persuasion, newspaper articles, intimidation, and even bribery in some cases.

Electors.—In 1845 Congress prescribed that presidential elections should take place on the Tuesday after the first Monday in November. At this election the voters do not elect a President, but choose a certain number of persons from each state who have the power of electing a President. These are known as electors, and together they form the Electoral College. In no case in the 27 elections since 1796 has a single elector voted differently from the way he was expected to vote.

Electoral College.—The respective state representatives to this body meet in each particular state on the second Monday in January following their election, cast their ballots for President and Vice-President, and send certified copies of the returns to Washington. These votes are counted by Congress, which meets for that purpose on the second Wednesday in February. Should there be no majority of the electoral votes for any one candidate, the Constitution directs that the House of Representatives shall elect a President from the three highest names on the list, each state having one vote; and the manner in which that vote shall be cast for a state in cases of a difference of opinion among the representatives from that state is decided by the majority of votes of the representatives. This provision has been resorted to only twice in the history of the country: namely, in 1801, when Jefferson and Burr had 73 votes each for President, and Jefferson was chosen by the House of Representatives; and in 1824, when there was no majority, the three highest being Adams, Jackson, and Crawford, and John Quincy Adams was chosen.

Presidential Succession.—A vacancy resulting from the death or inability of the President is supplied by the Vice-President. There are five instances of such succession: namely, April 4, 1841, Tyler became President by the death of Harrison; July 9, 1850, Fillmore became President by the death of Taylor; April 15, 1865, Johnson became President upon the assassination of Lincoln; September 19, 1881, Arthur became President upon the assassination of Garfield; and September 14, 1901, Roosevelt became President upon the assassination of McKinley. In 1792 Congress attempted to provide in case of the death or inability of both President and Vice-President by enacting that the President *pro tempore* of the Senate should discharge the duties of President, and after him the Speaker of the House, but that a new election should follow in two months. On January 19, 1886, Congress provided that in such cases the duties of President shall be discharged by a Secretary of a Department, ranking in order: Secretary of State, Secretary of the Treasury, Secretary of War, Attorney General, Postmaster General, Secretary of the Navy, and Secretary of the Interior. But no provision is made for a new election, the temporary incumbent holding the office of President until the end of the original term.

Term of Office.—The President is elected for four years, and his term begins at 12 o'clock noon on the 4th of March. Since 1841 four Presidents have held double terms; Lincoln, Grant, Cleveland, and McKinley. Every President until 1841 was a candidate for reëlection, and of these Washington, Jefferson, Madison, Monroe, and Jackson were elected, but John Adams, John Quincy Adams, and Van Buren were defeated. Between the years 1840 and 1860 no President was renominated. Cleveland was renominated and defeated in 1888, nominated and elected in 1892. Harrison was renominated in 1892 and was defeated. No President has held office for a third term, though Washington might have held it, and an effort was made to renominate Grant in 1880.

Eligibility.—Of all the officers in the United States government the President and Vice-President alone must be native-born citizens. A candidate for either of these offices must be 35 years of age and have lived 14 years in the country.

Duties of the President.—These are regulated by the Constitution and may be briefly stated as follows: Commander-in-chief of the army and navy, to which he appoints commissions and assigns officers; in time of war he is military chief. He names foreign ministers and consuls, judges of the Supreme Court, and other important federal officers, subject to the consent of the Senate. He may remove from public office without such consent. He directs foreign relations, submits treaties, can pardon any offense except cases of impeachment, can use the militia or naval forces to maintain the law, can veto bills, and may call the attention of Congress by messages to necessary legislation. In 1790 the President's salary was fixed at $25,000 a year; in 1871 raised to $50,000; in 1909 to $75,000, without traveling expenses. Congress provides for the care and repair of the White House, makes allowance for lights, stable, hothouse, fuel, and steward's salary, and extends to the President

the use of a government vessel for his trips at sea.

In the intervals between the sessions, the President may appoint temporary officeholders subject to the approval of Congress upon its reassembling. While the President is more powerful in Congress than any other individual, a majority in one or both Houses may resist his efforts to secure good legislation. Congress was opposed to Madison in 1809; the administration of John Quincy Adams suffered; Jackson struggled with Congress from 1831 to 1835, and the Whigs openly opposed Tyler in Congress.

Departments.—There are nine heads of Departments, or secretaries, who form the Cabinet, and these officers are appointed by the President and the appointment is confirmed by the Senate. The Departments of Foreign Affairs, Treasury, and War date from the Confederation. The offices of Secretary of State and Attorney General were created by an Act of 1789, though the Department of Justice was not organized until 1870. The Navy Department was separated from the War Department in 1798. The Postmaster General existed under the Confederation but he was not recognized as equal to the other secretaries until Jackson's administration. The Department of the Interior was erected in 1849. The Bureau of Agriculture became a department with a secretary in 1889, and the Department of Commerce was organized in 1903. Each secretary receives an annual salary of $12,000, and holds office during the pleasure of the President.

Secretary of State.—This officer has control of foreign negotiations, American consuls, holds interviews and corresponds with the accredited representatives of foreign powers to the United States.

Secretary of the Treasury.—This officer controls the National finances, has charge of the public accounts, directs the plans for public buildings, for coining and printing money, and submits estimates of revenue and disbursements of the government to Congress every year.

Secretary of War.—He is the head of the army, under the President, and controls the several offices relating to the army. Within his department are the control of the United States military academy at West Point, of the National cemeteries, and of river and harbor improvements, and his consent must be obtained before any bridge may be built over any navigable river anywhere in the United States.

Department of Justice.—The Attorney General is the legal adviser to the President and to the heads of the other departments in questions of law relating to their work, prosecutes for the federal government and acts as its special counsel.

Postmaster General.—This officer directs and manages the postal business of the United States. In the discharge of his varied duties he appoints officers and employees of the department (except the four assistant postmasters general, who are appointed by the President); makes postal treaties with foreign governments; and manages the foreign and domestic mail service. He is responsible for the appointment of over 90,000 persons, including all postmasters whose remuneration does not exceed $1,000 a year.

Secretary of the Navy.—In this department is conducted the construction of ships, the manning, equipping, and arming of the vessels of war, which is done in the navy yards and at the naval arsenal at Washington; it also controls the naval academy at Annapolis.

Secretary of the Interior.—Among the many duties of this officer is supervision over patents, pensions, public lands and surveys, Indians, education, railroads, public parks, and some of the public institutions within the District of Columbia.

Secretary of Agriculture.—This officer controls the agricultural experiment stations, the quarantine stations, the weather bureau, forestry, and the bureau of animal industry.

Secretary of Commerce and Labor.—This officer controls the census, immigration, steamboat inspection, lighthouses, coast survey, foreign and domestic commerce, shipping, fisheries, statistics, and investigation into corporations and trusts.

There are several independent services not controlled by any of these secretaries, and these include the government printing office, for which the printer is appointed by the President; the National Museum; Bureau of Ethnology; Smithsonian Institution; the Fish Commission; the Interstate Commerce Commission, created in 1887; and the Civil Service Commission, created in 1883, which examines candidates and provides for the appointment of about 120,000 government employees.

Number of Civil Service Employees.—The total number of members of the House and Senate, with all of the officials in both Houses, is about 1,600. The judges, clerks, marshals, deputies, and other court officials number about 2,250. The federal executive officials and employees number in all about 236,000.

Judiciary.—The American judiciary system was an evolution from the English courts in the early colonies. After the Revolution the judges were appointed by Congress. The history of the development of courts and of their organization is treated under the head of "Law" elsewhere. There are 9 supreme court justices, 27 circuit judges, 70 district judges, 5 judges of the United States Courts of Claims, and 5 judges of the United States Court of Private Land Claims. Each judge of the United States is appointed by the President, subject to approval by the Senate. Justices of the Supreme Court receive $12,500 a year; circuit judges, $7,000; and district judges, $6,000. Judges leave the bench by death, resignation, retiring on allowance of full salary after 70 years of age, by the discontinuance of the office, or by impeachment. The federal courts exercise a very great power over states, by the right to declare state acts unconstitutional and, consequently, void. By the federal constitution the power is conferred upon federal courts to disallow such state laws as conflict with the constitution or with laws and treaties made constitutionally by the United States government. Instances in which the federal courts have passed unfavorably upon acts of Congress have been very few indeed, especially outside of the difficulties arising out of reconstruction after the Civil War. Although the constitution does not demand it, none but lawyers have ever been appointed to the position of judge of a federal court.

LEGISLATIVE BODIES.

	Senate.	House of Representatives.
1. Number	Two from each state.	Three hundred and ninety-one members, appointed according to population—one to every 201,860 inhabitants.
2. How Elected	By vote of the State Legislatures.	By votes in the several Congressional Districts.
3. Term	For six years, but so arranged by states that one third of the entire Senate is elected every two years.	For two years, which is the life of a Congress, and is divided into two sessions. At the expiration of the term the members for a new House are chosen.
4. Qualifications of Candidates	A citizenship of the United States for at least nine years; a resident of the state; and at least 30 years of age.	A citizen of the United States for at least seven years; a resident of the state; and at least 25 years of age.
5. Salary	Annual of $7,500.	Annual of $7,500.
6. Presiding Officer	The Vice-President of the United States is *ex officio* President of the Senate.	The Speaker, elected by the House at the beginning of its first session; salary, $12,000 a year.
7. Powers	1. Elects a President of the Senate, *pro tempore*, to act in the absence of the Vice-President. 2. Passes upon nominations for office made by the President. 3. Meets on the second Wednesday in February after presidential election, with the House, to count the electoral vote, and, if an election results the President, *pro tempore*, of the Senate declares the election of the successful candidates for President and Vice-President. If no election results, the Senate elects the Vice-President. 4. Tries, as in a court, all persons who have been impeached. 5. Ratifies, amends, or rejects all proposed treaties between the United States and foreign countries.	1. Elects a Speaker of the House and other officers. 2. Originates all bills for raising revenues. 3. Meets on the second Wednesday in February after presidential election, with the Senate, to count the electoral votes; and, if no election results, the House votes by states, one vote for each state, to fill the office of President, the candidates being the three who received the greatest number of electoral votes. 4. Conducts, before the Senate, all impeachment prosecutions.

Apportionment of Representatives.—The number of representatives which a state shall have in Congress is apportioned according to its population, and the number is adjusted before the meeting of the first Congress after the latest census. From 1789 to 1865 in estimating population 100,000 slaves were considered equivalent to 60,000 free men, but, as no slave voted, the white people of the South had greater representation than did the white people of the North. The Thirteenth Amendment in 1865 adjusted this matter. The number of representatives in the House has been increased after each census except that of 1840, when the number sank from 240 to 232. By the census of 1900 the number of members in the House of Representatives was increased from 356 to 386.* In adjusting population the difficulty arises over the fractions that result from dividing the population of the state by the number decided upon as the ratio number, the latest estimate being 201,860. As an example, a state with 875,000 inhabitants gets five representatives, one with 1,060,000 has still only five members, but one with 1,070,000 has six members. The first step in the assignment of representatives to states is to give to every state, large or small, one representative. In the smaller states this is at the very start irregular, for Nevada with only a fraction of the population of Delaware has the same representation of one member of Congress. From this the total number of the new House is decided upon, and from it the adjustment of representation in each state. The distribution of the representatives is shown in the following table:—

*Increased by the admission of Oklahoma to 391.

Alabama	9	Nevada	1
Arkansas	7	New Hampshire	2
California	8	New Jersey	10
Colorado	3	New York	37
Connecticut	5	North Carolina	10
Delaware	1	North Dakota	2
Florida	3	Ohio	21
Georgia	11	Oklahoma	5
Idaho	1	Oregon	2
Illinois	25	Pennsylvania	32
Indiana	13	Rhode Island	2
Iowa	11	South Carolina	7
Kansas	8	South Dakota	2
Kentucky	11	Tennessee	10
Louisiana	7	Texas	16
Maine	4	Utah	1
Maryland	6	Vermont	2
Massachusetts	14	Virginia	10
Michigan	12	Washington	3
Minnesota	9	West Virginia	5
Mississippi	8	Wisconsin	11
Missouri	16	Wyoming	1
Montana	1		
Nebraska	6	Total	391

This basis of representation remains in force until 1912, when a new house will assemble as the first after the census of 1910. The variation of the apportionment at the several censuses in the history of the country has been as follows:—

Under.	Census.		Apportionment.		Whole Nu'ber of Representatives.
	Year.	Populat'n.	Year.	Ratio.	
Constitution	....	.....	1789	30,000	65
First Census	1790	3,929,214	1793	33,000	105
Second Census	1800	5,308,483	1803	33,000	141
Third Census	1810	7,239,881	1813	35,000	181
Fourth Census	1820	9,633,822	1823	40,000	213
Fifth Census	1830	12,866,020	1833	47,700	240
Sixth Census	1840	17,069,453	1843	70,680	223
Seventh Census	1850	23,191,876	1853	93,423	234
Eighth Census	1860	31,443,321	1863	127,381	241
Ninth Census	1870	38,558,371	1873	131,425	292
Tenth Census	1880	50,155,783	1883	151,911	325
Eleventh Census	1890	62,622,250	1893	173,901	356
Twelfth Census	1900	76,303,387	1903	201,860	386

Meetings of Congress.—Every Congress must hold at least two sessions. These are annual, but the President may call an extra session for the consideration of any matters of importance, and Congress itself may provide for one. The life of a Congress lasts from twelve o'clock on March 4 immediately following the election of representatives, until twelve o'clock noon on March 4 of the next odd year, when Congress is said to "die." The longest session on record was in 1890, when the adjournment took place on October 1, after 240 days of session. The time of meeting has been on the first Monday in December since 1789. From that date until 1791 Congress met in New York. From 1791 until 1800 in Philadelphia, since 1800 at the National Capitol in Washington.

Salaries.—Between the years 1789 and 1815 the salary of senators and representatives was six dollars a day; from 1817 until 1855, eight dollars; the Act of March 19, 1816, made the salary $1,500 a year, but was violently opposed by the people and was repealed. In 1855 the compensation was made $3,000 a year, and raised in 1865 to $5,000. On the last day of the session in 1873 the salary was made $7,500; this act was repealed early in the next session and the salary was placed at $5,000 a year. But in 1906 the salary was again raised to $7,500 a year. Congress pays a total of $2,500,000 a year in salaries and mileage. Mileage is a grant made to senators and representatives to cover their traveling expenses from and to their homes. Between the years 1789 and 1815 each member was granted six dollars for every 20 miles of travel; from 1817 to 1865, eight dollars for every 20 miles; and since 1865 it has been 20 cents a mile. At one time a member from Oregon was obliged to travel 5,000 miles to Washington, and for this he drew $2,000.

Speaker.—The presiding officer of the House of Representatives is elected by his party, and the selection is practically made before Congress meets. It is now an easy matter, but in 1839 Speaker Hunter was elected after a week of voting; in 1849 Howell Cobb was elected after 59 ballots had been cast, and he was chosen by plurality. Nathaniel P. Banks was elected in 1855 after a struggle of two months, as was the case in 1859 when Pennington was chosen. The influence of the Speaker in the House is very great; he appoints committees by power conferred upon him in 1790; he decides which member is entitled to the floor during debates, and by refusing to recognize members he may retard or prevent legislation, and this power is still further increased by his right to state questions, to put them, and to decide points of order.

Committees.—These are appointed by the Speaker as soon as possible after his election, and it is his privilege to distribute the 600 committee places among the 391 members. Committees in the Senate are supposed to be appointed by ballot. All committees meet in committee rooms, of which there are a great number in the Capitol, and such committee room is usually the headquarters upon all occasions for the chairman of that committee. Much of the work of legislation is done in the daily meetings of the committees, and it is not unusual for as many as 1,000 bills to be referred to one committee in a session. The meetings are usually private, though open at nearly all times to any especially interested. With the tremendous growth of business and the enormous amount of work to be done, committee work has become a necessity in order to consider sufficiently the several bills which are presented to the House, and a great deal of a representative's hardest work is done in the committee room. Reports upon bills that have been under consideration are made to the House, and final action is guided almost wholly by that report.

Sessions of Congress.—Both Houses usually meet at noon and the average duration of a session is from four to five hours. Sunday sessions, evening sessions, and all night sessions are not unknown. The sessions of the Senate during its first two years were private; in 1793 the public was admitted; and in 1802 a stenographic reporter was allowed. When a private session of the Senate is now required, the Senate resolves to go into executive session, during which time no spectators are allowed and the journals and records of such meeting are kept private. Secret sessions in the House are practically unknown, though in 1807 that on the Burr question, and in 1811 that on the Act for taking possession of West Florida, were secret. Newspaper reports of debates began in 1800; the *Congressional Globe* was privately started in 1833,

in which debates were published verbatim and so continued until 1873, when its place was taken by the *Congressional Record* conducted by Congress, in which reports of speeches are published daily, but members have the privilege of editing and changing their remarks after utterance, and in hurried sessions a member asks for and receives leave to print speeches which have never been delivered.

State Government.—The government of states, like that of the federal government, is threefold: legislative, executive, and judicial.

State Legislature.—This goes by the name of the General Court in New Hampshire and Massachusetts; of the Legislative Assembly in North Dakota, Oregon, and Montana; of the Legislature in many states; and of the General Assembly in an equal number. When a Legislature consists of two houses it is known as a bicameral form of government; when of only one, unicameral. Government in Georgia was unicameral from 1777 until 1789; in Pennsylvania from 1776 until 1790; and in Vermont until 1836. In all of the other states there were two houses and the upper house is always known as the Senate. In nearly all of the states the lower house is called the House of Representatives, except in West Virginia, Virginia, and Maryland, where it is known as the House of Delegates; in New York, Wisconsin, Nevada, and California, the Assembly; and in New Jersey, the General Assembly. Until 1868 the lower house in North Carolina was the House of Commons.

State Executives.—This comprises the Governor, Lieutenant Governor, and, in some cases, heads of departments.

Governor.—The Governor is responsible for the faithful execution of the law; informs the Legislature by message of affairs in the state; may call the Legislature in special session; nominates and appoints under confirmation of the Senate certain of the state officers; fills vacancies which occur during sessions; grants pardons or commutes sentences; has a limited power of veto; may call out the militia to his aid; and is a commander of the militia, with a military staff.

State Officers.—In each state the secretary of state keeps the state records and the great seal; the treasurer has charge of the state funds; an auditor or comptroller in some states audits the accounts; an attorney general looks after the state business at court and is counsel to the state; and the state superintendent of education has charge of all matters relating to public instruction. By their direct responsibility to the people these officials differ from the President's Cabinet in their relation to the executive.

Lieutenant Governor.—In many states this officer is elected to fill a possible vacancy in the Governorship, and to act as President of the Senate. Arkansas, Florida, Georgia, Maryland, New Hampshire, Maine, Tennessee, Utah, Wyoming, New Jersey, West Virginia, and Oregon have no Lieutenant Governor. In most of these the President of the Senate, elected by the Senate, fills any vacancy in the Governorship. But Oregon, Utah, and Wyoming provide that the Secretary of State shall be Governor; Maryland permits the Legislature to elect a successor if in session, otherwise, the President of the Senate takes the office.

District of Columbia.—Chosen in 1790 by act of Congress as the seat of government; Maryland and Virginia gave up claim to this territory. From 1790 until 1800 the seat of government was at Philadelphia. The limits of the District as now existing with its 70 square miles were defined in 1846 and lie wholly on the left bank of the Potomac River. In 1878, because of the heavy indebtedness of the government on a territorial basis, the present system of government by three commissioners was adopted. The people have no vote and no voice in the management of affairs, which is under the control of Congress.

Local Government.—There exist in the United States four forms of local government: (1) The Town System; (2) the County System; (3) the Mixed System; and (4) Municipal Government.

Town System.—This form was based upon the English idea which the early colonists brought with them. The charter is given by the state legislature. The town elects its own officers; imposes and collects its taxes; coöperates with the county and state in the collection of their taxes within its limits.

At the annual meetings reports of the departments for the past year are rendered; taxes are voted; and town officers are chosen. The officers are selectmen varying in number from three to nine; the school committee; the town clerk; town treasurer; assessors; overseers of the poor; surveyors of highways; fence-viewers, etc.

County System.—This system originated in Virginia and was carried to the West by emigrants from that state. The state legislature grants the charter; there is no assembly corresponding to the town meeting, but county officers administer the affairs; the governing body is the County Board or the County Court. Under it are the collector, assessor, superintendent of schools, sheriff, etc.

In some states the subdivisions of the county are called precincts; in others, townships; in Delaware, hundreds; in Georgia, militia districts; in Louisiana, wards; in Mississippi, beats; in Maryland, election districts; and in Tennessee, civil districts.

Mixed System.—In many states there is a combination of the town and the county systems, and the ratio of the one element to the other is of varying degrees. In New York there is more of the town than of the county; in Pennsylvania, more of the county than of the town. In both of these states the county as well as the town is a body corporate and politic. The mixed system and the county system are the only forms found in the West.

Municipal Government.—None of the forms of state government can possibly meet all of the demands of city administration. This is placed beyond the control of the state though the form is modeled to a greater or less degree upon state methods. The chief characteristic of municipal control is the strong centralizing of power. The charter of the city, given by the state legislature, is really the constitution of the city, limits its privileges and defines its duties. The city legislature often consists of a bicameral form of the board of aldermen and the common

council; but New York, Chicago, San Francisco, and a great number of small cities have only one chamber. This body passes city ordinances, levies taxes, and makes appropriations. The executive is the mayor, who stands to the city in much the same position as does the governor to the state. The several administrative departments of the city are under the direction of officials or salaried officers, sometimes by committees from the council. In some cities the mayor presides at the city council; but in larger cities a special judge, called the city or police judge.

The functions of a municipality embrace (1) ways and means of communication and transportation, as well as the supply of light and water; (2) disposal of wastes; (3) protection of life, health, and property; (4) education; (5) recreation; (6) municipal housing; (7) charities and correction.

(1) The providing of ways and means of communication and transportation is the first function of a municipality. In dealing with street traffic it rests with the municipal authorities either to provide street railways or to arrange for such by private enterprise. In Great Britain and her colonies many of the street railways are owned by the municipality, but in the United States private enterprise is the rule. When waterways are encountered, the municipality has to arrange for the construction of bridges, as well as, on occasion, docks, wharves, and harbors. Ferries, too, must be provided. The construction of harbors is usually a function of the national government, though municipal docks are common. The supply of water for household and industrial purposes, as well as for fire protection and street and sewer flushing, is one of the most important municipal services. Water and lighting supplies are usually municipal functions. Municipal markets and slaughter houses are often provided, or else a strict supervision is kept over private markets and food supplies.

(2) *Wastes.*—The provision of an adequate sewerage system, the disposal of garbage and rubbish, and the cleansing of streets are essentially municipal functions. Cemeteries, too, come within the province of the municipality.

(3) *Protection of Life, Health, and Property* comprises the work of the police, the courts, the board of health, the fire department, the provision of public baths, wash-houses, and latrines, as well as the building inspection service.

(4) *Education.*—This includes the work of elementary education, besides manual and technical training, night schools, vacation schools, museums, and libraries. In exercising these functions the municipality is acting as the agent of the state, and is subject to central control.

(5) *Recreation.*—This embraces the provision and maintenance of playgrounds, parks, gymnasiums, swimming baths, besides suitable halls for concerts and lectures.

(6) *Municipal Housing* is almost unknown in the United States but is a characteristic feature of municipal activity in Great Britain and even in India. Houses are built at municipal expense to provide sanitary dwellings for the poorest wage-earners.

(7) *Charities and Correction.*—These include organized poor relief and the maintenance of asylums, reformatories, and occasionally hospitals.

MUNICIPAL REFORM.

Each locality is confronted with its own problem of municipal reform, and too often partisan politics is allowed to run counter to the common weal. The remedy lies with the citizens and taxpayers, who frequently are too indifferent to insist on sound and honest government. A distinct reform was effected in Scotland in 1833, and in England and Wales in 1835, as the result of agitation against corrupt local government. These reform acts were supplemented until in 1888 an act was passed providing that cities and towns of over 50,000 inhabitants should be administrative counties. One of the most important reforms in many American states has been the adoption of constitutional amendments, from 1850 to 1880, prohibiting special acts of the legislature applying to a single municipality. Other agencies of municipal reform are the good government clubs, which are federated into the National Municipal League. One of the best known efforts to reform the abuses in city government is that termed the Federal Plan, which was put into effect in Philadelphia in 1887. All legislative power is vested in the council and all executive power in the mayor and the heads of certain departments nominated by the mayor with the consent of the council. The mayor has also the right of veto. The main advantage of this plan is that power and responsibility are centered in a few individuals.

Municipal Ownership.—From earliest times certain cities of importance have owned lands, constructed harbors, docks, and aqueducts, and made these a source of revenue. But in the nineteenth century municipal-owned water works, gas works, and the like became the rule almost throughout the civilized world. Authorities are at variance regarding the proper scope of municipal ownership; but in the main they are agreed on the following points: (1) it may include all services of a sanitary nature, such as sewerage and water supply; (2) it should restrict its activities to industries of a public character, and not enter into undue competition with private enterprise. But local conditions alone can determine the advisability of public or private ownership, and the relative efficiency and economy are the deciding factors. It is generally conceded that municipal ownership should be run on sound business principles, for in the event of reckless or mismanaged undertakings resulting in financial loss, the deficit would have to be met from the general tax rate.

Municipal ownership of sewerage is almost universal, and no country is better provided in this respect than the United States. Water works are the commonest form of revenue-producing services, while gas works, though frequently owned by the municipality in Europe, are rarely under such ownership in America. Street railways have been developed since 1850, but outside of Great Britain municipal ownership is rare. Electric lighting plants are frequently owned by the municipality in the United States and Great Britain, though very rarely on the continent of Europe. The telephone service is national rather than municipal, and in the United States is controlled by private companies, but in Great Britain the trunk lines are owned by the government postal authorities.

GOVERNORS GENERAL OF CANADA.

No.	Name.	Birthplace.	Birth.	Education.	Politics.	Residence.	Term.	D'th.
1	Viscount Monck, G.C.M.G.....	Tipperary, Ire...	1819	Trinity College, Dublin	Liberal.....	Ireland ..	July 1, 1867-Nov. 13, 1868	1894
2	Lord Lisgar, G.C.M.G.....	Bombay, India..	1807	Eton, Corpus Christi, Oxford	Tory	England.	Feb. 2, 1869-June 22, 1872	1876
3	Earl of Dufferin, K.P., K.C.B., G.C.M.G.	Florence, Italy..	1826	Eton, Christ Church, Oxford	Liberal.....	Ireland ..	June 25, 1872-Oct. 18, 1878	1902
4	Marquis of Lorne, K.T., G.C.M.G.	London, Eng....	1845	Eton, St. Andrews, Trinity, Cambridge	Liberal.....	England.	Nov. 25, 1878-Oct. 23, 1883	
5	Marquis of Lansdowne, G.C.M.G.	Scotland	1845	Eton, Balliol, Oxford	Liberal.....	England.	Oct. 23, 1883-June 11, 1888	
6	Lord Stanley of Preston, G.C.B.	London, Eng....	1841	Eton.....	Conservative	England.	June 11, 1888-Sept. 18, 1893	
7	Earl of Aberdeen, K.T., G.C.M.G.	Edinburgh, Scot.	1841	St. Andrews University, Oxford	Liberal.....	Scotland	Sept. 18, 1893-Nov. 12, 1898	
8	Earl of Minto, G.C.M.G.....	London, Eng....	1846	Edinburgh Univ'ty. Trinity, Cambridge	Liberal-Unionist	India	Nov. 12, 1898-Dec. 10, 1904	
9	Earl Grey, G.C.M.G	England.....	1851		Conservative	Ottawa, Can.	Dec. 10, 1904-	

DOMINION CABINET OFFICERS.

PREMIERS.

Ministry.	Name.	Birthplace.	Birth.	Education.	Politics.	Province.	Date of Appointment	D'th.
1	Macdonald, Sir John A....	Glasgow, Scot,..	1815	Kingston, Law.....	Conservative	N. Scotia	July 1, 1867-N	1891
2	Mackenzie, Alexander.....	Dunkeld, Scot...	1822	Left school at 14.....	Liberal.....	Ontario ..	Nov. 7, 1873..	1892
3	Macdonald, Sir John A....	Glasgow, Scot...	1815	Kingston Grammar, Law	Conservative	N. Scotia	Oct. 17, 1878..	1891
4	Abbott, Sir J. J. C.....	St. Andrews, Que.	1821	McGill University, Montreal, Law	Conservative	Quebec ..	June 16, 1891.	1893
5	Thompson, Sir J. S. D.....	Halifax, N. S....	1844	Common schools, Law	Conservative	N. Scotia	Dec. 5, 1892...	1894
6	Bowell, Sir Mackenzie.....	London, Eng.....	1823	Common schools	Liberal.....	Ontario ..	Dec. 21, 1894..	
7	Tupper, Sir Charles.....	Amherst, N. S....	1821	Common schools, Medicine	Conservative	Manitoba	Jan. 15, 1896..	
8	Laurier, Sir Wilfrid.....	St. Lin, Que.....	1841	L'Assomption, McGill	Liberal.....	Quebec ..	July 11, 1896..	

SECRETARIES OF STATE.

Ministry.	Name.	Province.	Date of Appointment.	Ministry.	Name.	Province.	Date of Appointment.
1	Langevin, Sir Hector L.	Quebec	July, 1867	4	Patterson, J. C.....	Ontario	Jan., 1892
1	Aikins, J. C.....	Ontario	Dec., 1869	5	Costigan, John.....	Quebec	Dec., 1892
2	Christie, David.....	.....	Nov., 1873	6	Dickey, A. R.....	N. Scotia....	Dec., 1894
2	Scott, Richard W.....	Ontario	Jan., 1874	6	Montague, W. H.....	Ontario	Mar., 1895
3	Aikins, J. C.....	Ontario	Oct., 1878	6, 7	Tupper, Sir Charles.....	N. Scotia....	Jan., 1896
3	O'Connor, John.....	.....	Nov., 1880	8	Scott, Richard W.....	Ontario	July, 1896
3	Mousseau, Joseph A.....	.....	May, 1881	8	Murphy, Charles.....	.....	Oct., 1908
3, 4	Chapleau, J. A.....	Quebec	July, 1882				

MINISTERS OF FINANCE.

1	Galt, Sir A. T.....	Quebec	July, 1867	3	McLelan, A. W.....	.....	Dec., 1885
1	Rose, Sir John.....	Ontario	Nov., 1867	3	Tupper, Sir Charles.....	N. Scotia....	Jan., 1887
1	Hincks, Sir Francis.....	Ontario	Oct., 1869	3, 4, 5,	Foster, George Eulas.....	N. Brunswick	May, 1888
1	Tilley, Sir Samuel Leonard.	N. Brunswick	Feb., 1873	6, 7			
2	Cartwright, Sir Richard.....	Ontario	Nov., 1873	8	Fielding, William S.....	N. Scotia....	July, 1896
3	Tilley, Sir Samuel Leonard.	N. Brunswick	Oct., 1878				

MINISTERS OF JUSTICE.

1	Macdonald, Sir J. A.	Nova Scotia	July, 1867	3, 4, 5	Thompson, Sir J. S. D.	Nova Scotia	Sept. 1885
2	Dorion, A. Aimé	Quebec.....	Nov., 1873	6	Tupper, Sir Charles H.	B. Columbia.	Dec., 1894
2	Fournier, Télesphore	Quebec.....	July, 1874	6, 7	Dickey, A. R.	N. Scotia....	Jan., 1896
2	Blake, Edward	Ontario	May, 1875	8	Mowat, Sir Oliver	Ontario	July, 1896
2	Laflamme, Rodolphe	Ontario	June, 1877	8	Mills, David.....	Ontario	Nov., 1897
3	McDonald, James	Nova Scotia	Oct., 1878	8	Fitzpatrick, Charles.....	Quebec	Feb., 1902
3	Campbell, Sir Alexander ...	Ontario.....	May, 1881	8	Aylesworth, Allen B.....	Ontario	June, 1906

MINISTERS OF MARINE AND FISHERIES.

1	Mitchell, Peter	N. Brunsw'k	July, 1867	6, 7	Costigan, John	Quebec	Dec., 1894
2	Smith, Albert J.....	.....	Nov., 1873	8	Davies, Sir Louis Henry	P. E. Island..	July, 1896
3	Pope, J. C.....	Ontario	Oct., 1878	8	Sutherland, James.....	Ontario	Jan., 1902
3	McLelan, A. W.....	.....	July, 1882	8	Préfontaine, J. R. F.....	Quebec	Nov., 1902
3	Foster, George Eulas.....	N. Brunsw'k	Dec., 1885	8	Brodeur, Louis P.....	Quebec	Feb , 1906
3, 4, 5	Tupper, Sir Charles H.....	B. Columbia.	May, 1888				

Dominion Cabinet Officers.—*Continued.*

MINISTERS OF RAILWAYS AND CANALS.

Ministry.	Name.	Province.	Date of Appointment.	Ministry.	Name.	Province.	Date of Appointment.
3	Tupper, Sir Charles	Nova Scotia.	May, 1879	8	Blair, Andrew G.	N. Brunsw'k	July, 1896
3	Pope, John Henry		Sept. 1885	8	Emmerson, Henry R.	N. Brunsw'k	Jan., 1904
3	Maçdonald, Sir John A.	Nova Scotia.	Nov.,1889	8	Graham, George P.		Sept. 1907
4,5,6,7	Haggart, John G.	Ontario	Jan., 1892				

MINISTERS OF MILITIA AND DEFENSE.

1	Cartier, Sir George E.	Quebec.	July, 1867	3, 4	Caron, Sir A. P.	Ontario	Nov., 1880
1	McDonald, Hugh	Manitoba	July, 1873	4	Bowell, Mackenzie	Ontario	Jan., 1892
2	Ross, William	Nova Scotia.	Nov.,1873	5, 6	Patterson, J. C.	Ontario	Dec., 1892
2	Vail, William B.	Nova Scotia.	Sept. 1874	6	Dickey, A. R.	Nova Scotia.	Mar., 1895
2	Jones, A G.	Nova Scotia.	Jan., 1878	6	Desjardins, A.	Quebec	Jan., 1896
3	Masson, L. F. R.	Quebec.	Oct., 1878	7	Tisdale, David	Ontario	May, 1896
3	Campbell, Sir Alexander.	Ontario	Jan., 1880	8	Borden, Sir Frederick W.	Nova Scotia.	July, 1896

MINISTERS OF AGRICULTURE.

1	Chapais, J. C.	Quebec	July, 1867	3	Pope, John Henry		Oct., 1878
1	Dunkin, Christopher		Nov.,1869	3, 4	Carling, John	Ontario	Sept. 1885
1	Pope, John Henry		Oct., 1871	5, 6	Angers, A. R.	Quebec	Dec., 1892
2	St. Just, L. Letellier de		Nov.,1873	6, 7	Montague, W. H.	Ontario	Jan., 1896
2	Pelletier, C. A. P.	Quebec	Jan., 1877	8	Fisher, Sydney A.	Ontario	July, 1896

POSTMASTERS GENERAL.

1	Campbell, Sir Alexander	Ontario	July, 1867	3	Carling, John	Ontario	May, 1882
1	O'Connor, John		July, 1873	3	Campbell, Sir Alexander	Ontario	Sept. 1885
2	Macdonald, Donald A.		Nov.,1873	3	McLelan, A. W.		Jan., 1887
2	Fournier, Télesphore	Quebec	May, 1875	3, 4	Haggart, J. G.	Ontario	Aug.,1888
2	Huntington, Lucius S.		Oct., 1875	4, 5, 6	Caron, Sir A. P.	Ontario	Jan., 1892
3	Langevin, Sir Hector L.	Quebec	Oct., 1878	7	Taillon, L. O.	Quebec	May, 1896
3	Campbell, Sir Alexander.	Ontario	May, 1879	8	Mulock, Sir William	Ontario	July, 1896
3	O'Connor, John		Jan., 1880	8	Aylesworth, A. B.	Ontario	Oct., 1905
3	Campbell, Sir Alexander.	Ontario	Nov.,1880	8	Lemieux, Rodolphe	Quebec	June,1906
3	O'Connor, John		May, 1881				

MINISTERS OF PUBLIC WORKS.

1	Macdougall, William	Ontario	July, 1867	4, 5, 6	Ouimet, Joseph A.	Quebec	Jan., 1892
1	Langevin, Sir Hector L.	Quebec	Dec,, 1869	7	Desjardins, A.	Quebec	May, 1896
2	Mackenzie, Alexander.	Ontario	Nov.,1873	8	Tarte, J. Israel.	Ontario	July, 1896
3	Tupper, Sir Charles	Nova Scotia.	Oct., 1878	8	Sutherland, James.	Ontario	Nov.,1902
3, 4	Langevin, Sir Hector L.	Quebec	May, 1879	8	Hyman, Charles S.	Ontario	May, 1905
4	Smith, Frank	Ontario	Aug., 1891	8	Pugsley, William.	N. Brunsw'k	Sept. 1907

MINISTERS OF THE INTERIOR.

1	Campbell, Sir Alexander.	Ontario	July, 1873	3, 4	Dewdney, Edgar	B. Columbia.	Aug., 1888
2	Laird, David	P. E. Island	Nov.,1873	4, 5, 6	Daly, Thomas M.	Manitoba	Oct., 1892
2	Mills, David	Ontario	Oct., 1876	7	Macdonald, Hugh John	Manitoba	May, 1896
3	Macdonald, Sir John A.	Nova Scotia.	Oct., 1878	8	Sifton, Clifford	Ontario	Nov.,1896
3	Macpherson, Sir D. L.	Ontario	Oct., 1883	8	Oliver, Frank	Ontario	Apr., 1905
3	White, Thomas		Aug., 1885				

MINISTERS OF CUSTOMS.

1	Tilley, Sir Samuel Leonard	N. Brunsw'k	July, 1867	3, 4	Bowell, Mackenzie	Ontario	Oct., 1878
1	Tupper, Sir Charles	N. Scotia	Feb., 1873	4	Chapleau, Joseph A.	Quebec	Jan., 1892
2	Burpee, Isaac		Nov.,1873	8	Paterson, William.	Ontario	June,1897

CONTROLLERS OF CUSTOMS.

5	Wallace, N. Clarke *	Ontario	Dec., 1892	5	Bowell, Mackenzie	Ontario	Dec., 1892
6, 7	Wood, J. F.	Ontario	Dec., 1895	6, 7	Ives, W. B.	Quebec	Dec., 1894
8	Paterson, William *	Ontario	July, 1896	8	Cartwright, Sir R. J.	Ontario	July, 1896

MINISTERS OF TRADE AND COMMERCE.

MINISTERS OF INLAND REVENUE.

1	Howland, William Pearce	Ontario	July, 1867	2	Laurier, Wilfrid	Quebec	Oct., 1877
1	Morris, A.	Ontario	Nov.,1869	3	Baby, L. F. G.	Quebec	Oct., 1878
1	Tupper, Sir Charles	Nova Scotia.	July, 1872	3	Aikins, J. C.	Ontario	Nov.,1880
1	O'Connor, John		Mar.,1873	3, 4	Costigan, John	Ontario	May, 1882
1	Gibbs, T. N.		July, 1873	8	Lotbinière, Sir H. G. Joly de	Quebec	June,1897
2	Fournier, Télesphore	Quebec	Nov.,1873	8	Bernier, M. E.	Quebec	June,1900
2	Geoffrion, Felix	Quebec	June,1874	8	Brodeur, Louis P.	Quebec	Jan., 1904
2	Laflamme, Rodolphe	Ontario	Nov.,1876	8	Templeman, William	B. Columbia.	Feb., 1906
2	Cauchon, Joseph	Manitoba	June,1877				

* Not in Cabinet.

Dominion Cabinet Officers.—*Continued.*

CONTROLLERS OF INLAND REVENUE.

Ministry.	Name.	Province.	Date of Appointment.	Ministry.	Name.	Province.	Date of Appointment.
5	Wood, John F.*	Ontario	Dec., 1892	8	Lotbinière, Sir H.G. Joly de*	Quebec	July, 1896
6, 7	Prior, E. G.	Ontario	Dec., 1895				

PRESIDENTS OF COUNCIL.

1	Blair, A. J. F.	N. Brunsw'k	July, 1867	3	Masson, L. F. R.	Quebec	Jan., 1880
1	Howe, Joseph	Nova Scotia	Jan., 1869	3	Mousseau, Joseph A.		Nov., 1880
1	Kenny, Edward		Nov., 1869	3	McLelan, A. W.		May, 1881
1	Tupper, Sir Charles	Nova Scotia	June, 1870	3	Macdonald, Sir John A.	Nova Scotia.	Oct., 1883
1	O'Connor, John		July, 1872	3	Colby, C. C.	Quebec	Nov., 1889
1	McDonald, Hugh	Manitoba	June, 1873	4	Abbott, Sir J. J. C.	Quebec	June, 1891
2	Huntington, L. S.		Jan., 1874	5	Ives, W. B.	Quebec	Dec., 1892
	Cauchon, Joseph	Manitoba	Dec., 1875	6	Bowell, Sir Mackenzie	Ontario	Dec., 1894
	Blake, Edward	Ontario	June, 1877	7	Angers, A. R.	Quebec	May, 1896
3	O'Connor, John		Oct., 1878	8	Laurier, Sir Wilfrid	Quebec	July, 1896

RECEIVERS GENERAL.

1	Kenny, Edward		July, 1867	5, 6	Curran, John J.*	Quebec	Dec., 1892
1	Chapais, J. C.	Quebec	Nov., 1869	7	Tupper, Sir Charles H.*	B. Columbia.	May, 1896
1	Robitaille, Theodore		Jan., 1873	8	Fitzpatrick, Charles*	Quebec	July, 1896
2	Coffin, Thomas		Nov., 1873	8	Carroll, Henry*	Quebec	Feb., 1902
3	Campbell, Sir Alexander	Ontario	Nov., 1878	8	Lemieux, Rodolphe*	Quebec	Jan., 1904
				8	Bureau, Jacques*		Feb., 1907

SOLICITORS GENERAL.

MINISTERS WITHOUT PORTFOLIO.

1	Aikins, J.C	Ontario	Nov., 1869	6	Montague, W. H.	Ontario	Dec., 1894
2	Blake, Edward	Ontario	Nov., 1873	6, 7	Ferguson, D.	P. E. Island	Dec., 1894
2	Scott, R. W.	Ontario	Nov., 1873	7	Ross, J. J.	Quebec	May, 1896
3	Wilmot, R.D.	N. Brunsw'k	Nov., 1878	8	Dobell, R. R.	Quebec	July, 1896
3	Macpherson, Sir D. L.	Ontario	Feb., 1880	8	Geoffrion, C. A.	Quebec	July, 1896
3	Smith, Frank	Ontario	July, 1882	8	Sutherland, James	Ontario	Sept. 1899
3	Abbott, J. J. C.	Quebec	May, 1887	8	Templeman, William	B. Columbia.	Feb., 1902
4,5,6,7	Smith, Sir Frank	Ontario	Jan., 1882	8	Hyman, Charles S.	Ontario	Feb., 1904
5	Carling, Sir John	Ontario	Dec., 1892				

LIEUTENANT GOVERNORS OF PROVINCES.

	Gibson, John M.	Ontario	Sept. 1908		Dunsmuir, James	B. Columbia.	May, 1906
	Pelletier, Sir C. A. P.	Quebec	Sept. 1908		Mackinnon, D. A.	P. E. Island.	Oct., 1904
	Fraser, Duncan C.	Nova Scotia.	Mar., 1906		Bulyea, George H. V.	Alberta	Sept. 1905
	Tweedie, L. J.	N. Brunsw'k	Mar., 1907		Forget, A. E.	Saskatche'n.	Sept. 1905
	McMillan, Sir D. H.	Manitoba	Oct., 1900		Forget, A. E.	Territories	Mar., 1904

* Not in Cabinet.

Qualifications for Voting in Canada.

Province.	Requirements as to Citizenship.	Previous Residence.		Persons Excluded from Suffrage.
		Province.	District.	
Alberta	Manhood suffrage; Canadians or British subjects properly registered.			Insane, or disqualified by law.
British Columbia	Manhood suffrage; Canadians or British subjects properly registered.	6 mos.	1 mo.	Insane; disqualified by law; Indians, Chinese, Japanese.
Manitoba	Manhood suffrage; Canadians or British subjects properly registered; Indians receiving an annuity or treaty money; foreign subjects able to read "Manitoba Act."	12 mos.	3 mos.	Insane, or disqualified by law.
New Brunswick	Manhood suffrage; Canadians or British subjects properly registered; property valuation, $100-$400; ministers, school teachers, professors.		12 mos.	Insane, or disqualified by law.
Nova Scotia	Canadians or British subjects properly registered; property valuation, $150-$300; fishermen, property $250 valuation.			Insane, or disqualified by law.
Ontario	Manhood suffrage; Canadians or British subjects properly registered; enfranchised Indians; unenfranchised Indians with property.	9 mos.	At time of election.	Insane, or disqualified by law; Indians on reservations or in tribes.
Prince Edward Island	Manhood suffrage; Canadians or British subjects properly registered; real estate valuation and occupancy.		12 mos.	Insane, or disqualified by law.
Quebec	Canadians or British subjects properly registered; real estate owners or occupants; fishermen ($150), ministers with five months' residence.			Insane, or disqualified by law.
Saskatchewan	Manhood suffrage; Canadians or British subjects.			Insane, or disqualified by law.
Territories	British subjects		12 mos.	

THE BRITISH ARMY AND NAVY IN 1909-1910.

The army estimates submitted to the British Parliament, February 28, 1909, show a total expenditure of $137,175,000, or a decrease of $120,000 from the preceding year. The total expenditure on the army from 1900-1901 to 1909-1910 was $2,325,200,525; of which $818,112,500 constituted the extra charges entailed (1900-1903) by the Boer War. Although the estimated cost in 1909-1910 varies little from that of 1908-1909 there are considerable increases and decreases in amounts needed for effective services. The number of men has decreased 1,698 in the regular army, but there is an increase of 97 officers, and 199 men of other ranks, due to the increased requirements of the Territorial Force for its permanent staff. The Territorial Force called for an increase of $1,510,000 in 1909-1910, which is balanced by a decrease of $2,225,000 in army pay of the regular force. The total decrease in army pay is stated as $4,475,000, but in former estimates the kit allowance ($2,250,000 in 1908-1909) was included in army pay, while in 1909-1910 the kit allowance was provided for under supplies and clothing.

The number of effectives of all ranks shows a total of 603,517, not including the 76,590 on the Indian Establishment. Recruiting for the regular army has been brisk, and there had been no difficulty in offsetting the depletion of the ranks caused by the efflux of the three years' men of the Army Reserve; in fact, enlistments were 2,250 more than in the previous year. This was believed to be due to the state of the labor market, to some extent, but also to the fact that the army was growing in favor as an occupation. Three fourths of the recruits failed to reach the educational standard of a ten-year-old child in the Board Schools. The soldier is now educated along lines useful to him after leaving the service.

It was demonstrated that to mobilize six divisions and a cavalry division, with lines of communication, etc., would require 69,253 horses with only 15,542 visible. For the mobilization of the Territorial Force 86,000 horses would be required, or a total of 156,000 horses for full mobilization. A great problem, with the Colonies and the United States the only countries to draw from for horses in quantity. Thus there is a deficiency of 116,000 horses. Every organized army in Europe is practically facing the same difficulty. No country in Europe is producing horses to fill the individual need. To meet the issue the civilian horses will be organized. It is estimated there are 2,000,000 horses in Great Britain, and after due allowances, it is thought there are at least 500,000 fit for army purposes—sufficient to mobilize the army three or four times. A thorough census is being made by county associations and police; the horses seen will be classified by expert local committees, which will work in conjunction with the remount officials.

The Territorial Force was established for 11,000 officers and 302,200 non-commissioned officers and men, April 1, 1908, all volunteers being for four years' service. It was estimated that 149,000 or 79 per cent. were ex-yeomen or ex-volunteers; this force taking the place of the old Volunteer movement. In July, 1909, the total strength of the Territorial Force was 9,505 officers, not including 729 officers of the "Unattached" list of the Officers' Training Corps and 732 officers of General Hospitals and Sanitary Companies, available on mobilization; non-commissioned officers and men numbered 260,676, the Force being widened by the formation of a Special Reserve, July, 1909.

The Boy Scouts, named "Lord Roberts' Boys," were reviewed 11,000 strong by General Baden-Powell, September 4, 1909. This body is a further development of the Territorial Force idea of Lord Roberts. They get two weeks' camp training at Bisley, or other places. Aptitude entitles Scouts to take part in the army maneuvers, and the body has been recognized as a definite but unofficial branch of the service, a training ground for the Territorial Force.

The King's Colonials Yeomanry is a regiment mainly recruited from men belonging to over-sea dominions, and now temporary residents in Great Britain. It is the first unit of the second line to undertake an Imperial obligation. Its members assume liability to service abroad with the regiment in any part of the world, should the Territorial Force be mobilized. In this connection various colonies have formed corps of Territorial regiments contracted voluntarily to serve the Empire in time of need, under the sanction of the individual home government.

The full estimates for the army by the Secretary for War were 680,107 effectives of all ranks, with a peace strength of 255,000 and 1,700,000 available for duty but unorganized on a war footing.

The British navy has for many years dominated any two powers in Europe as regards number of ships and armament. During the past two years this dominance has been threatened by the tremendous increase in the German fleet. The great increases also to be found in the fleet of the United States are not viewed with the same alarm, it being recognized that the mission of the United States is peace, and that outside territory is not desired. This is not so with Germany. Consequently the British navy in 1910 to a great extent is under revision. Unusually large additions are planned, and the colonies have assumed an entirely new attitude in regard to naval defenses. New Zealand has preferred to adhere to the old policy of contributing money to build ships, but Canada and Australia have decided to lay the foundation of fleets to be built and owned, officered and manned, by themselves individually. To render this new program possible the Colonial Naval Defense Act of 1865 was amended, providing that volunteers, seamen, and others, shall be bound, to serve as ordered in any vessel provided by the government of the colony, or in the Royal Navy on emergency.

When the navy estimates for 1909-1910 were introduced into the House of Commons by Mr. McKenna, First Lord of the Admiralty (March 12, 1909), the Liberal party was committed to a policy of retrenchment and it was necessary for Mr. McKenna to explain clearly the condition of the British navy, as against the great increases made and the increase outlined in the fleet of Germany. In 1911 the total strength of Dreadnoughts would be 12, with 4 Invincibles, this being 16 modern ships as against 13 for which Germany had made provision, not including 4 others provided for in 1910-1911, to be completed by 1912, when Germany would have 17 Dreadnoughts and Invincibles. Therefore, instead of retrenchment, the government must face and indorse an increase of 4 British ships to bring the British total to 20, as against the German 17 ships, in the autumn of 1912.

This issue precipitated what has been termed the "German scare"; the country was convulsed almost to hysteria; the proverbial English stolidity was shaken as it had not been since the Great Armada. The final result was the acceleration of the building of 4 Dreadnoughts which it had been intended to lay down in April, 1910, these being in addition to the 4 provided for in March, 1909, of which 2 were laid down in July, and 2 in November, 1909.

The naval program also called for 6 protected cruisers, 20 destroyers, and a number of submarines, to cover the cost of all which a vote of $2,500,000 was asked. There was also asked power to arrange in the financial year 1909-1910 for the ordering, collecting, and supply of guns, gun-mountings, armor, machinery, and material for shipbuilding, thus making possible the laying down of 4 or more ships, April 1, 1910, to be completed by March, 1912.

The question of dirigible airships for naval purposes had been under consideration, and plans made to build one in experiment.

The total amount asked for the navy in 1909-1910 was $175,713,500, or $14,116,000 in excess for the year 1908-1909. Of this increase it was estimated that $6,371,075 was due to the increased cost of shipbuilding. The total number of officers, men, boys, coast guards, and marines voted was 128,000.

There are also to be changes marked by the development of the Home Fleet, which would absorb the Channel Fleet.

The nucleus crew vessels are organized as two additional divisions of the Home Fleet, the third and fourth, under a vice admiral.

The armored cruisers of the Indomitable-Indefatigable group (reckoned in the Dreadnought class) make an official speed of 27 to 29 knots. They are all heavily armed, fast fighting vessels, having a length between perpendiculars of 530 feet, and over all of 562 feet. The beam is 78 feet 6 inches, and the mean load draught 26 feet. The maximum fuel capacity is 2,000 tons, and the full load draught about 29 feet. All these vessels are driven by turbines, and the estimated horse power is 41,000.

The "White Paper" prepared for March 31, 1909, gives a return of the ships built and building of the British navy; all vessels not more than twenty years old are included, and the list is: battle ships 53; armored cruisers 38; protected cruisers of the first class 18, of the second class 38, of the third class 16; scouts 8; torpedo vessels 18; torpedo destroyers 146; torpedo boats 80; submarines 45; there being in addition 3 depot ships for torpedo boat destroyers and 2 for submarines.

Estimated Increase of Population of the United States, Based on State Census and Census Office Estimates for 1906.

STATE OR TERRITORY.	Population, 1900.	ESTIMATED POPULATION	NUMBER OF PERSONS PER SQUARE MILE.		AREA IN SQUARE MILES.		
		1906	1906	1900	Total.	Land.	Water.
United States	76,212,168	84,216,483	.....	.....	3,743,344	.....	.....
Continental United States	75,994,575	83,941,510	28	26	3,026,789	2,974,159	52,630
Alabama	1,828,697	2,017,877	39	36	51,998	51,279	719
Arizona	122,931	143,745	1	1	113,956	113,840	116
Arkansas	1,311,564	1,421,574	27	25	53,335	52,525	810
California	1,485,053	1,648,049	11	10	158,297	156,092	2,205
Colorado	539,700	615,570	6	5	103,948	103,658	290
Connecticut	908,420	1,005,716	209	188	4,965	4,820	145
Delaware	184,735	194,479	99	94	2,370	1,965	405
District of Columbia	278,718	307,716	5,129	4,645	70	60	10
Florida	528,542	629,341	11	10	58,666	54,861	3,805
Georgia	2,216,331	2,443,719	42	38	59,265	58,725	540
Idaho	161,772	205,704	2	2	84,313	83,779	534
Illinois	4,821,550	5,418,670	97	86	56,665	56,002	663
Indian Territory	392,060	519,188	17	13	31,209	30,790	419
Indiana	2,516,462	2,710,898	76	70	36,354	35,885	469
Iowa	2,231,853	2,205,690	40	40	56,147	55,586	561
Kansas	1,470,495	1,612,471	20	18	82,158	81,774	384
Kentucky	2,147,174	2,320,298	58	54	40,598	40,181	417
Louisiana	1,381,625	1,539,449	34	30	48,506	45,409	3,097
Maine	694,466	714,494	24	23	33,040	29,895	3,145
Maryland	1,188,044	1,275,434	128	121	12,327	9,941	2,386
Massachusetts	2,805,346	3,043,346	379	349	8,266	8,039	227
Michigan	2,420,982	2,584,533	45	42	57,980	57,480	500
Minnesota	1,751,394	2,025,615	25	22	84,682	80,858	3,824
Mississippi	1,551,270	1,708,272	37	34	46,865	46,362	503
Missouri	3,106,665	3,363,153	49	45	69,420	68,727	693
Montana	243,329	303,575	2	2	146,572	145,776	796
Nebraska	1,066,300	1,068,484	14	14	77,520	76,808	712
Nevada	42,335	42,335			110,690	109,821	869
New Hampshire	411,588	432,624	48	46	9,341	9,031	310
New Jersey	1,883,669	2,196,237	292	250	8,224	7,514	710
New Mexico	195,310	216,328	2	2	122,634	122,503	131
New York	7,268,894	8,226,990	173	153	49,204	47,654	1,550
North Carolina	1,893,810	2,059,326	42	39	52,426	48,740	3,686
North Dakota	319,146	463,784	7	5	70,837	70,183	654
Ohio	4,157,545	4,448,677	109	102	41,040	40,740	300
Oklahoma	398,331	590,247	15	10	38,848	38,624	224
Oregon	413,536	474,738	5	4	96,699	95,607	1,092
Pennsylvania	6,302,115	6,928,515	155	140	45,126	44,832	294
Rhode Island	428,556	490,387	460	407	1,248	1,067	181
South Carolina	1,340,316	1,453,818	48	44	30,989	30,495	494
South Dakota	401,670	465,908	6	5	77,615	76,868	747
Tennessee	2,020,616	2,172,476	52	48	42,022	41,687	335
Texas	3,048,710	3,536,618	13	12	265,896	262,398	3,498
Utah	276,749	316,331	4	3	84,990	82,184	2,806
Vermont	343,641	350,373	38	38	9,564	9,124	440
Virginia	1,854,184	1,973,104	49	46	42,627	40,262	2,365
Washington	518,103	614,625	9	8	69,127	66,836	2,291
West Virginia	958,800	1,076,406	45	39	24,170	24,022	148
Wisconsin	2,069,042	2,260,930	41	38	56,066	55,256	810
Wyoming	92,531	103,673	1	1	97,914	97,594	320
Alaska	63,592	82,516	.....	.....	590,884	.....	.....
New possessions	.....	.....	.....	.....	125,671	.....	.....

Cities of the United States, above 25,000.

NAME.	Census 1900.	Estimated 1906.	Land area in acres June 1, 1906.	NAME.	Census 1900.	Estimated 1906.	Land area in acres June 1, 1906.
New York City				Boston, Mass	560,892	602,278	24,613.0
Manhattan borough	1,850,093	2,153,495	14,038.0	Baltimore, Md	508,957	553,669	19,290.2
Bronx borough	200,507	285,809	26,017.0	Cleveland, Ohio	381,768	460,327	25,378.5
Brooklyn borough	1,166,582	1,392,811	49,680.1	Buffalo, N. Y	352,219	381,819	26,884.0
Queens borough	152,999	206,806	82,883.0	San Francisco, Cal	342,782	364,677	29,760.0
Richmond borough	67,021	74,122	36,600.0	Cincinnati, Ohio	325,902	345,230	27,182.9
Total for Greater New York	3,437,202	4,113,043	209,218.1	Pittsburg, Pa	321,616	375,082	18,826.2
Chicago, Ill	1,698,575	2,049,185	114,932.3	New Orleans, La	287,104	314,146	125,600.0
Philadelphia, Pa	1,293,697	1,411,735	81,828.0	Detroit, Mich	285,704	353,535	22,976.0
St. Louis, Mo	575,238	649,320	39,276.3	Milwaukee, Wis	285,315	317,903	14,081.2
				Washington, D. C	278,718	307,716	38,406.4

Cities of the United States, above 25,000—*Continued.*

NAME.	Census 1900.	Estimated 1906.	Land area in acres June 1, 1906.
Newark, N. J.	246,070	289,634	10,679.0
Jersey City, N. J.	206,433	237,952	9,163.0
Louisville, Ky.	204,731	226,129	13,093.5
Minneapolis, Minn.	202,718	273,825	31,621.6
Providence, R. I.	175,597	203,243	11,355.1
Indianapolis, Ind.	169,164	219,154	19,165.4
Kansas City, Mo.	163,752	182,376	16,743.0
St. Paul, Minn.	163,065	203,815	33,388.0
Rochester, N. Y.	162,608	185,703	11,992.8
Denver, Colo.	133,859	151,920	37,348.0
Toledo, Ohio	131,822	159,980	16,450.0
Allegheny, Pa.	129,896	145,240	4,726.0
Columbus, Ohio	125,560	145,414	10,176.0
Worcester, Mass.	118,421	130,078	23,683.0
Syracuse, N. Y.	108,374	118,880	10,639.0
New Haven, Conn.	108,027	121,227	11,460.0
Paterson, N. J.	105,171	112,801	5,157.0
Fall River, Mass.	104,863	105,942	21,722.0
St. Joseph, Mo.	102,979	118,004	6,240.0
Omaha, Neb.	102,555	124,167	15,380.0
Los Angeles, Cal.	102,479	(No est.)	27,399.1
Memphis, Tenn.	102,320	125,018	9,771.9
Scranton, Pa.	102,026	118,692	12,361.7
Lowell, Mass.	94,969	95,173	8,308.0
Albany, N. Y.	94,151	98,537	6,913.7
Cambridge, Mass.	91,886	98,554	4,014.3
Portland, Oregon	90,426	109,884	23,836.0
Atlanta, Ga.	89,872	104,984	7,680.0
Grand Rapids, Mich.	87,565	99,794	10,703.0
Dayton, Ohio	85,333	100,799	6,846.0
Richmond, Va.	85,050	87,246	3,123.0
Nashville, Tenn.	80,865	84,703	6,124.0
Seattle, Wash.	80,671	104,169	20,412.0
Hartford, Conn.	79,850	95,822	10,992.0
Reading, Pa.	78,961	91,141	3,965.0
Wilmington, Del.	76,508	85,140	4,026.0
Camden, N. J.	75,935	84,849	4,475.0
Troy, N. Y.	75,057	76,513	5,021.4
Trenton, N. J.	73,307	86,355	4,068.3
Bridgeport, Conn.	70,996	84,274	6,257.4
Lynn, Mass.	68,513	78,748	6,942.5
Oakland, Cal.	66,960	73,812	8,749.6
Lawrence, Mass.	62,559	71,548	4,185.0
New Bedford, Mass.	62,442	76,746	12,173.0
Des Moines, Iowa	62,139	78,323	34,549.2
Springfield, Mass.	62,059	75,836	23,963.7
Somerville, Mass.	61,643	70,798	2,600.0
Hoboken, N. J.	59,364	66,689	825.0
Evansville, Ind.	59,007	63,957	3,810.0
Manchester, N. H.	56,987	64,703	21,065.0
Utica, N. Y.	56,383	65,099	5,932.0
Peoria, Ill.	56,100	66,365	5,471.0
Charleston, S. C.	55,807	56,317	2,406.4
Savannah, Ga.	54,244	68,596	4,042.0
Salt Lake City, Utah	53,531	61,202	29,243.0
San Antonio, Tex.	53,321	62,711	22,905.0
Duluth, Minn.	52,969	67,337	40,556.0
Erie, Pa.	52,733	59,993	4,413.7
Elizabeth, N. J.	52,130	62,185	5,850.0
Wilkesbarre, Pa.	51,721	60,121	3,116.8
Kansas City, Kansas	51,418	77,912	6,460.0
Waterbury, Conn.	51,139	61,903	17,980.8
Harrisburg, Pa.	50,167	55,735	2,871.0
Portland, Me.	50,145	55,167	13,790.7
Yonkers, N. Y.	47,931	64,110	12,700.0
Norfolk, Va.	46,624	66,931	3,568.0
Holyoke, Mass.	45,712	50,778	9,848.7
Fort Wayne, Ind.	45,115	50,947	3,841.7
Youngstown, Ohio	44,885	52,710	6,262.0
Houston, Tex.	44,633	58,132	10,036.0
Covington, Ky.	42,938	46,436	1,496.0
Akron, Ohio	42,728	50,738	7,380.8
Dallas, Tex.	42,638	52,793	9,500.0
Saginaw, Mich.	42,345	48,742	8,710.0
Lancaster, Pa.	41,459	47,129	2,630.0
Lincoln, Neb.	40,169	48,232	4,682.9
Brockton, Mass.	40,063	49,340	13,770.5
Binghamton, N. Y.	39,647	43,785	6,400.0
Augusta, Ga.	39,441	43,125	2,846.0
Pawtucket, R. I.	39,231	44,211	5,494.0
Altoona, Pa.	38,973	47,910	2,083.7
Wheeling, W. Va.	38,878	41,494	1,345.0
Mobile, Ala.	38,469	42,903	3,635.0
Birmingham, Ala.	38,415	45,869	4,173.0
Little Rock, Ark.	38,307	39,959	6,048.0
Springfield, Ohio	38,253	42,069	5,660.0
Galveston, Tex.	37,789	34,355	4,989.2
Tacoma, Wash.	37,714	55,392	19,439.0
Haverhill, Mass.	37,175	37,961	20,400.0
Spokane, Wash.	36,848	47,006	12,660.0
Terre Haute, Ind.	36,673	52,805	5,280.0
Dubuque, Iowa	36,297	43,070	7,290.0
Quincy, Ill.	36,252	39,108	3,715.1
South Bend, Ind.	35,999	44,605	3,978.3
Salem, Mass.	35,956	37,961	4,600.0
Johnstown, Pa.	35,936	43,250	2,741.3
Elmira, N. Y.	35,672	35,734	4,546.0
Allentown, Pa.	35,416	41,595	2,193.1
Davenport, Iowa	35,254	40,706	5,052.0
McKeesport, Pa.	34,227	43,438	1,907.0
Springfield, Ill.	34,159	38,933	4,524.8
Chelsea, Mass.	34,072	37,932	1,441.0
Chester, Pa.	33,988	38,002	2,862.0
York, Pa.	33,708	39,168	2,220.0
Malden, Mass.	33,664	38,912	3,062.0
Topeka, Kan.	33,608	41,886	4,229.7
Newton, Mass.	33,587	37,475	11,110.0
Sioux City, Iowa	33,111	42,520	28,020.0
Bayonne, N. J.	32,722	44,170	2,530.0
Knoxville, Tenn.	32,637	36,051	2,590.0
Schenectady, N. Y.	31,682	61,919	4,966.4
Fitchburg, Mass.	31,531	33,319	17,528.0
Superior City, Wis.	31,091	37,643	23,400.0
Rockford, Ill.	31,051	36,051	5,510.0
Taunton, Mass.	31,036	30,953	28,320.0
Canton, Ohio	30,667	38,440	5,760.0
Butte, Montana	30,470	43,624	1,610.0
Montgomery, Ala.	30,346	40,808	4,318.7
Auburn, N. Y.	30,345	32,963	5,440.0
Chattanooga, Tenn.	30,154	34,297	3,304.0
East St. Louis, Ill.	29,655	40,958	5,170.0
Joliet, Ill.	29,353	32,185	2,472.0
Sacramento, Cal.	29,282	31,022	2,871.5
Racine, Wis.	29,102	32,928	2,860.0
La Crosse, Wis.	28,895	29,115	5,330.9
Williamsport, Pa.	28,757	29,735	4,610.0
Jacksonville, Fla.	28,429	36,675	4,864.0
New Castle, Pa.	28,339	36,847	4,353.0
Newport, Ky.	28,301	30,329	729.6
Oshkosh, Wis.	28,284	31,033	5,040.0
Woonsocket, R. I.	28,204	32,994	5,532.0
Pueblo, Colo.	28,157	30,824	7,997.3
Atlantic City, N. J.	27,838	39,544	2,775.0
Passaic, N. J.	27,777	39,799	2,070.4
Bay City, Mich.	27,628	40,587	5,877.9
Fort Worth, Tex.	26,688	27,096	4,266.9
Lexington, Ky.	26,369	29,249	2,012.0
Gloucester, Mass.	26,121	25,989	18,007.0
Joplin, Missouri	26,023	35,671	6,520.0
South Omaha, Neb.	26,001	36,765	3,760.0
New Britain, Conn.	25,998	33,722	8,375.0
Council Bluffs, Iowa	25,802	25,117	11,498.0
Cedar Rapids, Iowa	25,656	29,380	7,905.0
Easton, Pa.	25,238	28,317	2,105.2
Jackson, Mich.	25,180	25,360	5,700.0
Newburg, N. Y.	24,943	26,593	2,254.0
Wichita, Kan.	24,671	35,541	21,376.0
Kingston, N. Y.	24,535	25,585	4,400.0
Kalamazoo, Mich.	24,404	32,472	5,031.0
Everett, Mass.	24,336	30,066	1,893.0
Meriden, Conn.	24,296	25,880	2,402.0
Aurora, Ill.	24,147	26,823	4,025.0
Orange, N. J.	24,141	26,493	1,400.0
Poughkeepsie, N. Y.	24,029	25,369	1,782.0
Hamilton, Ohio	23,914	27,670	1,692.0
Quincy, Mass.	23,899	28,911	10,736.0
Nashua, N. H.	23,898	26,652	19,654.0
Waltham, Mass.	23,481	26,842	8,089.6
Bloomington, Ill.	23,286	25,506	2,823.3
Macon, Ga.	23,272	32,692	3,005.0
Burlington, Iowa	23,201	25,741	6,425.3
West Hoboken, N. J.	23,094	30,280	546.0
Jamestown, N. Y.	22,892	26,628	5,334.4
Newport, R. I.	22,441	25,559	3,958.0
Elgin, Ill.	22,433	25,199	4,331.1
Austin, Tex.	22,258	25,290	8,340.0
Pittsfield, Mass.	21,766	25,648	25,527.0
Lima, Ohio	21,723	27,702	3,852.0
Watertown, N. Y.	21,696	25,992	5,258.5
East Orange, N. J.	21,506	25,909	2,522.0
Warwick, R. I.	21,316	25,464	24,584.0
Mt. Vernon, N. Y.	21,228	25,670	2,817.0
Colorado Springs, Col.	21,085	29,338	5,132.2
Muncie, Ind.	20,942	27,293	2,419.2
Anderson, Ind.	20,178	25,842	2,852.0
Newport News, Va.	19,635	28,749	1,242.5
Niagara Falls, N. Y.	19,457	27,827	5,958.0
Madison, Wis.	19,164	25,128	2,683.4
Perth Amboy, N. J.	17,699	27,534	3,200.0

Name of State. Date of Admission. Area and Population.	First Settlement. By whom. Date.	How Acquired.	Origin and Meaning of Name.	Motto and Meaning. Emblem. State Flower.
Alabama (1819). 51,998 sq. miles. 2,017,877 pop.	Fort St. Louis by French in 1702.	Part of Mississippi territory.	Indian, meaning here we rest.	Here we rest. Golden-rod.
Alaska (1868) (ter.). 590,884 sq. miles. 82,516 pop.	Three Saints by Russians in 1784.	Purchased from Russia in 1867.	*Al-ay-es-ka*, meaning the great country.	
Arizona (ter.) (1863). 113,956 sq. miles. 143,745 pop.	Tucson by Spaniards about 1580.	Part of Mexican Cession and Gadsden Purchase.	Indian, meaning sand hills.	*Sitat deus:* Founded by God. Sequoia Cactus.
Arkansas (1836). 53,335 sq. miles. 1,421,574 pop.	Arkansas Post by French in 1685.	Part of Louisiana territory.	From a tribe of Indians. French and Indian word, meaning bow of smoky waters.	Mercy, justice. *Regnat populi:* The people rule. Apple Blossom.
California (1850). 158,297 sq. miles. 1,648,049 pop.	San Diego by Spanish in 1769.	Part of Mexican Cession.	Spanish, meaning hot furnace.	*Eureka:* I have found it. California Poppy.
Colorado (1876). 103,948 sq. miles. 615,570 pop.	Near Denver by Americans in 1858.	Part of Louisiana Purchase and Mexican Cession.	Spanish, meaning colored red.	*Nil sine numine:* Nothing without Providence. Columbine.
Connecticut (1788). 4,965 sq. miles. 1,005,716 pop.	Windsor by the English in 1635.	Part of New England; one of the 13 original States.	Indian, meaning long river.	*Qui transtulit sustinet:* He who transplanted still sustains. Mountain Laurel.
Delaware (1787). 2,370 sq. miles. 194,479 pop.	Near Wilmington by the Swedes in 1638.	One of the 13 original States.	Named in honor of Lord Delaware.	Liberty and Independence. Peach Blossom.
District of Col. (1791). 70 sq. miles. 307,716 pop.	Rome by English in 1663.	Territory ceded to government by Maryland and Virginia.		*Justitia omnibus:* Justice to all.
Florida (1845). 58,666 sq. miles. 629,341 pop.	St. Augustine by Spanish in 1565.	Purchased from Spain in 1821.	Spanish, meaning blooming.	In God is our trust.
Georgia (1788). 59,265 sq. miles. 2,443,719 pop.	Savannah by English in 1733.	One of the 13 original States.	Named in honor of George II.	Obverse: Wisdom, Justice, Moderation. Reverse: Agriculture and Commerce. Cherokee Rose.
Hawaii (ter.) (1900). 6,449 sq. miles. 192,407 pop.	Spanish sailors, 1527.	By annexation,		
Idaho (1890). 84,313 sq. miles. 205,704 pop.	Cœur d'Alene by Americans in 1842.	Part of Oregon territory.	Indian, meaning gem of the mountains.	*Salve:* Hail. Syringa.
Illinois (1818). 56,147 sq. miles. 5,418,670 pop.	Kaskaskia by French about 1720.	Part of Northwest territory.	Indian, meaning the men.	National Union, State Sovereignty. Rose.
Indiana (1816). 36,354 sq. miles. 2,710,898 pop.	Fort Vincennes by French about 1730.	Part of Northwest territory.	Means Indians' ground.	No motto. Corn.
Iowa (1846). 56,125 sq. miles. 2,231,853 pop.	Fort Madison by Americans in 1832.	Part of Louisiana Purchase.	Indian, meaning beautiful land.	Our liberties we prize and our rights we will maintain. Wild Rose.
Kansas (1861). 82,158 sq. miles. 1,612,471 pop.	Fort Leavenworth by Americans about 1827.	Part of Louisiana Purchase.	Indian, meaning smoky water.	*Ad astra per aspera:* To the stars through difficulties. Sunflower.
Kentucky (1792). 40,598 sq. miles. 2,320,298 pop.	Harrodsburg by Americans in 1774.	Part of Virginia.	Indian, meaning dark and bloody ground.	United we stand, divided we fall. Golden-rod.
Louisiana (1812). 48,506 sq. miles. 1,539,449 pop.	Iberville by French in 1699.	Part of Louisiana Purchase.	Named in honor of Louis XIV.	Union, justice, and confidence. Magnolia.
Maine (1820). 33,040 sq. miles. 714,494 pop.	Pemaquid by English in 1625.	Part of Massachusetts; one of the 13 original States.	Called the Mayne land in a charter from Charles I., 1639.	*Dirigo*, I direct. Pine Cone.
Maryland (1788). 12,327 sq. miles. 1,275,434 pop.	St. Mary's by the English in 1634.	One of the 13 original States.	Named in honor of Queen Henrietta Maria.	*Fatti maschii, parole femine:* Manly deeds, womanly words. Blackeyed Susan.
Massachusetts (1788). 8,266 sq. miles. 3,043,346 pop.	Plymouth by English in 1620.	Massachusetts Bay Colony; oneof the 13 original States.	Indian, meaning the land of great hills.	*Ense petit placidam sub libertate quietem:* With the sword she seeks quiet peace under liberty. No State flower.
Michigan (1837). 57,980 sq. miles. 2,584,533 pop.	Sault Sainte Marie by French in 1668.	Part of Northwest territory.	Indian, meaning great lake.	*Si quaeris peninsulam amaenam, circumspice:* If you seek a beautiful peninsula, behold it here. Apple Blossom.
Minnesota (1858). 84,682 sq. miles. 2,025,615 pop.	At mouth of St. Croix and Minnesota rivers by Americans in 1805.	Part of Louisiana Purchase and Northwest territory.	Indian, meaning sky-tinted water.	*L'etoile du nord:* The Star of the North. Moccasin.
Mississippi (1817). 46,865 sq. miles. 1,708,272 pop.	Biloxi by French in 1699.	Part of Louisiana and Georgia.	Indian, meaning great river, or father of waters.	None. Magnolia.
Missouri (1821). 69,420 sq. miles. 3,363,153 pop.	Sainte Genevieve by French about 1735.	Part of Louisiana Purchase.	Indian, meaning muddy.	*Salus populi suprema lex esto* [The welfare of the people is the supreme law]. United we stand, divided we fall. Golden-rod.

Popular Name of State and People.	Altitudes: Highest — Lowest — Mean. Where.	Height.	Capital and Population.	Persons to Sq. Mile.	Products.
Cotton State.	Cheaha Mt. Venetia.	2,407 ft. 7 ft. 500 ft.	Montgomery, 30,346.	35.5	Maize, oats, wheat, cotton, sugar, iron, lumber, manufactures.
	Mt. McKinley. Umga Islet.	20,464 ft. 0 ft.	Sitka, 1,396.	0.1	Seals, salmon, gold, copper, silver, lumber, tin.
	San Francisco Mt. Yuma.	12,794 ft. 100 ft. 4,100 ft.	Phœnix, 5,544.	1.1	Copper, gold, silver, alfalfa, fruits, live stock.
Bear State. Toothpicks.	Magazine Mt. Camden.	2,800 ft. 71 ft. 650 ft.	Little Rock, 38,307.	24.7	Cotton, lumber, maize, wheat, fruits, wool, coal, tobacco.
Golden State. Gold hunters.	Mt. Whitney. Death Valley.	14,502 ft. — 276 ft. 2,900 ft.	Sacramento, 29,282.	9.5	Gold, silver, copper, lead, petroleum, borax, lumber, fruits, wine, olives.
Centennial State. Rovers.	Mt. Massive. Holmesville.	14,424 ft. 3,291 ft. 6,800 ft.	Denver, 133,359.	5.2	Gold, silver, coal, copper, vegetables, fruits, live stock, wheat, beet sugar.
Land of steady habits. Nutmeg State. Wooden Nutmegs.	Bear Mt., Salisbury. New Haven.	2,355 ft. 6 ft. 500 ft.	Hartford, 79,850.	187.5	Manufactures: woolen, cotton, notions; tobacco, iron, granite.
Blue Hen State. Blue Hen's Chickens.	Brandywine. Delaware City.	440 ft. 4 ft. 60 ft.	Dover, 3,329.	94.3	Maize, wheat, tomatoes, fruits; manufactures: leather, iron, steel, machinery.
	Tenley. Navy Yard.	421 ft. 4 ft. 150 ft.	Washington, 278,718.	4,645.3	Locally flour.
Peninsula State. Flower State. Fly-up-the-Creeks.	Mt. Pleasant. Cleveland.	301 ft. 3 ft. 100 ft.	Tallahassee, 2,981.	9.7	Pineapples, oranges, tobacco, rice, cotton, lumber, turpentine, resin, fish.
Cracker State. Empire State of the South. Buzzards.	Brasstown Bald. Brunswick.	4,768 ft. 14 ft. 600 ft.	Atlanta, 89,872.	37.6	Cotton, maize, rice, tobacco, oysters, marble, clay; manufactures: cotton, lumber, fertilizers.
	Mt. Mauna Kea.	13,805 ft.	Honolulu. 39,305.	3.0	Sugar, fruits, rice, coffee, hides.
Gem of the Mountains.	Hyndman Peak. Lewiston.	12,078 ft. 738 ft. 5,000 ft.	Boise City, 5,957.	1.9	Gold, silver, copper, lead, lumber, flour, wheat, live stock.
Sucker State. Prairie State. Suckers.	Mt. Charles. Brooklyn.	1,257 ft. 279 ft. 600 ft.	Springfield, 34,159.	86.1	Maize, wheat, oats, potatoes, hay, live stock, wool, meat, machinery, tools.
Hoosier State. Hoosiers.	Carlos. Evansville.	1,208 ft. 316 ft. 700 ft.	Indianapolis, 169,164.	70.1	Maize, wheat, tobacco, vegetables, fruits, wool, coal, clay, flour, machinery, cement.
Hawkeye. Hawkeyes.	Waneta. Burlington.	1,800 ft. 477 ft. 1,100 ft.	Des Moines, 62,139.	40.2	Maize, wheat, potatoes, hay, live stock, butter, coal, lumber.
Sunflower State. Jayhawkers.	West Boundary. Kings.	4,135 ft. 727 ft. 2,000 ft.	Topeka, 33,608.	18.0	Maize, wheat, hay, live stock, fruits, coal, salt.
Blue Grass. Dark and Bloody Ground. Corncrackers.	Big Black Mt. Columbus.	4,100 ft. 257 ft. 750 ft.	Frankfort, 9,487.	53.7	Tobacco, hemp, wheat, cotton, live stock, lumber, coal.
Creole State. Pelican State.	Claiborne. Port Hickory.	400 ft. — 8 ft. 100 ft.	Baton Rouge, 11,269.	30.4	Cotton, maize, rice, sugar, lumber, oysters salt.
Pine Tree State. Foxes.	Mt. Katahdin. Eastport.	5,200 ft. 5 ft. 600 ft.	Augusta, 11,683.	23.2	Hay, grains, dairying, potatoes, wool, granite, ice, lumber, manufactures, apples.
Old Line State. Crawthumpers.	Great Backbone Mt. Annapolis.	3,400 ft. 2 ft. 350 ft.	Annapolis, 8,525.	120.5	Wheat, hay, maize, vegetables, fruits, fish, coal, wool, canned fruits, and vegetables,
Bay State. Beaneaters.	Greylock. Boston.	3,535 ft. — 5 ft. 500 ft.	Boston, 560,892.	348.9	Manufactures: woolen, cotton, boots, shoes; fish, tobacco.
Wolverine State. Wolverines.	Porcupine Mt. Rockwood.	2,023 ft. 573 ft. 900 ft.	Lansing, 16,485.	42.2	Maize, wheat, oats, fruits, vegetables, iron, copper, clay, lumber, machinery.
North Star. Gopher. Gophers.	Mesabi Range. Winona.	2,400 ft. 606 ft. 1,200 ft.	St. Paul, 163,065.	22.1	Maize, wheat, oats, barley, flaxseed, wool, live stock, flour, iron, lumber.
Bayou State.	Holly Springs. Claiborne.	602 ft. 4 ft. 300 ft.	Jackson, 7,816.	33.5	Cotton, maize, rice, tobacco, oysters, shrimps.
"Empire State of the West." None.	Cedar Gap. Maywood.	1,800 ft. 229 ft. 800 ft.	Jefferson City, 9,664.	45.2	Maize, wheat, oats, cotton, swine, honey, zinc, lead, tobacco.

Name of State. Date of Admission. Area and Population.	First Settlement. By whom. Date.	How Acquired.	Origin and Meaning of Name.	Motto and Meaning. Emblem. State Flower.
Montana (1889). 146,572 sq. miles. 303,575 pop.	Yellowstone River by Americans in 1809.	Part of Louisiana.	Named from the Spanish, meaning mountain land.	*Oro y plata:* Gold and silver. Bitter-root.
Nebraska (1867). 77,520 sq. miles. 1,068,484 pop.	Bellevue by Manuel Lisa in 1805.	Part of Louisiana Purchase.	Indian, meaning shallow water.	Equality before the law. Golden-rod.
Nevada (1864). 110,690 sq. miles. 42,335 pop.	Genoa by Americans in 1849.	Part of Mexican Cession.	Spanish, meaning snow-clad.	All for our country.
New Hampshire (1788). 9,341 sq. miles. 432,624 pop.	Little Harbor by English in 1623.	Part of Massachusetts, one of the 13 original States.	Named from Hampshire, England.	No motto. No State flower.
New Jersey (1787). 8,224 sq. miles. 2,196,237 pop.	Elizabethtown by English in 1664.	Part of New Netherlands, one of the 13 original States.	Named in honor of the governor of Jersey Island.	Liberty and Independence. Sugar Maple (tree)
New Mexico(ter.)(1850). 122,634 sq. miles. 216,328 pop.	Santa Fe by Spaniards about 1537.	Part of Mexican Cession.	Spanish, named from Mexico, meaning the place of Aztec, God of War.	*Crescit eundo:* It increases by going.
New York (1788). 49,204 sq. miles. 8,226,990 pop.	New York by the Dutch about 1613.	One of the 13 original States.	Named in honor of the duke of York.	*Excelsior:* Higher, more elevated. Rose.
North Carolina (1789). 52,426 sq. miles. 2,059,326 pop.	On the Albemarle Sound by English in 1653.	One of the 13 original States.	Named in honor of Charles II.	No motto. No State flower.
North Dakota (1889). 70,837 sq. miles. 463,784 pop.	Pembina by English in 1810.	Part of Louisiana Purchase.	Indian, meaning allied.	Liberty and union, one and inseparable, now and forever. Wild Rose.
Ohio (1803). 41,040 sq. miles. 4,448,677 pop.	Marietta by Americans in 1788.	Part of Northwest territory.	Indian, meaning beautiful river.	*Imperium in imperio:* A government within a government; or, An empire within an empire. Scarlet Carnation.
Oklahoma (1907). 70,057 sq miles. 590,247 pop.	Guthrie by Americans in 1890.	Part of Louisiana Purchase.	Indian, meaning beautiful land. Signifies in Cherokee, home of the red man.	No motto. Crimson Rambler. (Mistletoe.)
Oregon (1859). 96,699 sq. miles. 474,738 pop.	Astoria by Americans in 1810.	Part of Oregon territory.	Indian, signifying river of the west. Spanish, meaning wild marjoram.	*Alis volat propriis:* She flies with her own wings. The Union. Golden-rod.
Pennsylvania (1787). 45,126 sq. miles 6,928,515 pop.	New Gottenburg by the Swedes in 1643.	Granted to Penn by Charles II., one of the 13 original States.	Latin, meaning Penn's woods, in honor of Wm. Penn.	Obverse: none. Reverse: Both can't survive. (The State coat of arms carries the motto, Virtue, Liberty and Independence.) Golden-rod.
Rhode Island (1790). 1,248 sq. miles. 490,347 pop.	Providence Plantations by English in 1636.	Providence and Rhode Island Plantations.	Rhodes, an island in the Ægean Sea.	Hope. Violet.
South Carolina (1788). 30,989 sq. miles. 1,453,818 pop.	On the Ashley River by English in 1670.	One of the 13 original States.	Named in honor of Charles II.	*Animis opibusque parati:* Prepared in mind and resources; ready to give life and property.
South Dakota (1889). 77,615 sq. miles. 465,908 pop.	Southeast part by Americans in 1859.	Part of Dakota territory.	Indian, meaning allied.	Under God the people rule. Anemone.
Tennessee (1796). 42,022 sq. miles. 2,172,476 pop.	Fort Loudon by English in 1756.	Part of North Carolina.	Indian, meaning river with the great bend.	Agriculture, commerce. No State flower.
Texas (1845). 265,896 sq. miles. 3,536,618 pop.	Taleta by Spanish in 1682.	By conquest from the Spaniards.	Named from tribe of Indians.	No motto. Blue Bonnet.
Utah (1896). 84,990 sq. miles. 316,331 pop.	Salt Lake City by Americans in 1847.	Part of Mexican Cession.	Named from a tribe of Indians.	Sego Lily.
Vermont (1791). 9,564 sq. miles. 350,373 pop.	Fort Saint Anne by French in 1665.	New Hampshire Grants.	French, meaning green mountain.	Freedom and Unity. Red Clover.
Virginia (1788). 42,627 sq. miles. 1,973,104 pop.	Jamestown by the English in 1607.	One of the 13 original States.	Named in honor of Elizabeth, the Virgin Queen.	Obverse: *Sic semper tyrannis.* Reverse: *Perseverando.* Ever so to tyrants. Perseverance.
Washington (1889). 69,127 sq. miles. 614,625 pop.	Columbia River by English in 1811.	Part of Oregon territory.	Named in honor of George Washington.	*Al-Ki:* Bye-bye. Rhododendron.
W. Virginia (1863) 24,170 sq. miles 1,076,406 pop.	Upshur Co. by Americans in 1764.	Part of Virginia.	Named from Virginia.	Obverse: *Montani semper liberi:* Mountaineers are always free. Rhododendron.
Wisconsin (1848). 56,066 sq. miles. 2,260,930 pop.	Green Bay by French in 1745.	Part of Northwest territory.	Indian, meaning wild rushing channel.	Forward. No State flower.
Wyoming (1890). 97,914 sq. miles. 103,673 pop.	Fort Laramie by Americans in 1834.	Part of Louisiana Purchase and Mexican Cession.	Indian, meaning large plain.	*Cedant arma togæ:* Let arms yield to the gown.

Popular Name of State and People.	Altitudes: Highest — Lowest — Mean. Where.	Height.	Capital and Population.	ersons to Sq. Mile.	Products.
Mountain. Stub Toe State.	Granite Peak. Yakt.	12,600 ft. 1,845 ft. 3,400 ft.	Helena, 10,770.	1.7	Wheat, wool, live stock, fruit, oats, lumber, copper, lead, silver.
Blackwater State. Antelopes.	Lawton. Brownville.	5,945 ft. 875 ft. 2,600 ft.	Lincoln, 40,169.	13.9	Maize, wheat, oats, live stock, chicory, sugar beets, fruits.
Sage-brush State. Silver State. Sage Hens.	Wheeler Peak. Saratoga Springs.	13,058 ft. 264 ft. 5,500 ft.	Carson City, 2,100.	0.4	Gold, silver, copper, zinc, wool, live stock.
Granite State. Granite Boys.	Mt. Washington. Hampton Falls.	6,279 ft. 9 ft. 1,000 ft.	Concord, 19,632.	45.7	Hay, maize, potatoes, oats, apples, granite, manufactures.
Jersey Blue State. Jersey Blues.	High Point. Crystal Lake.	1,800 ft. 2 ft. 250 ft.	Trenton, 73,307.	250.3	Market gardening, fruits, fisheries; manufactures: textiles, machinery, iron, steel.
	Truchas Peak. Baldy Peak.	13,275 ft. 2,661 ft. 5,700 ft.	Santa Fe, 5,603.	1.6	Cereals, fruits, vegetables, live stock, lumber, copper, coal, turquoises.
Empire State. Knickerbockers.	Mt. Marcy. Albany.	5,344 ft. 5 ft. 900 ft.	Albany, 94,151.	152.6	Market gardening, fruits, maize, wheat, dairying; manufactures: clothing, textiles.
Old North. Turpentine. Tar Heels.	Mt. Mitchell. Edenton Bay.	6,711 ft. 0 ft. 700 ft.	Raleigh, 13,643.	39.0	Cotton, maize, tobacco, wheat, shad, oysters, lumber.
Sioux. Tuckoes.	Summit. Bowesmont.	3,500 ft. 798 ft. 1,900 ft.	Bismarck, 3,319.	4.5	Wheat, oats, barley, flaxseed, live stock.
Buckeye. Buckeyes.	Bellefontaine. Palestine.	1,540 ft. 437 ft. 850 ft.	Columbus, 125,560.	102.0	Maize, wheat, oats, tobacco, live stock, wool, dairying, coal, iron, petroleum, salt; manufactures: iron, steel, machinery, flour.
	West end Beaver Co. Appalachia.	5,000 ft. 411 ft. 1,300 ft.	Guthrie, 10,006.	11.3	Maize, wheat, oats, cotton, flax, live stock, petroleum.
Beaver State. Sunset State. Web Feet.	Mt. Hood. North Sands.	11,225 ft. 5 ft. 3,300 ft.	Salem, 4,258.	4.4	Lumber, live stock, wheat, hay, fruits, hops, wool, salmon, gold, silver.
Keystone State. Pennanites.	Blue Knob. Philadelphia.	3,136 ft. 9 ft. 1,100 ft.	Harrisburg, 50,167.	140.1	Manufactures: steel, machinery, textiles; coal, petroleum, natural gas, iron, grains, wool.
Little Rhody. Gunflints.	Durfee Hill. Newport Depot.	805 ft. 6 ft. 200 ft.	Providence, 175,597.	407.0	Manufactures: worsted, cotton, jewelry, machinery, rubber.
Palmetto. Weasels.	Rich Mt. Port Royal.	3,569 ft. 5 ft. 350 ft.	Columbia, 21,108.	44.4	Cotton, tobacco, rice, oysters, turpentine, maize, lumber.
Coyote State. Swinge Cat State.	Harney Peak. Big Stone Lake.	7,216 ft. 962 ft. 2,200 ft.	Pierre, 2,306.	5.2	Maize, wheat, oats, flax, potatoes, live stock, wool, gold, silver, tin.
Volunteer State. Big Bend State. Butternuts.	Mt. Guyot. Memphis.	6,636 ft. 182 ft. 900 ft.	Nashville, 80,865.	48.4	Maize, wheat, cotton, tobacco, live stock, coal, iron, marble.
Lone Star State.	El Capitan. Galveston.	8,690 ft. 4 ft. 1,700 ft.	Austin, 22,258.	11.6	Cotton, maize, oats, wheat, rice, sugar, live stock, wool, fruits, lumber, oysters, coal.
	Gilbert Peak. Washington.	13,687 ft. 2,800 ft. 6,100 ft.	Salt Lake City, 53,531.	3.4	Gold, silver, copper, lead, coal, vegetables, fruits, wheat, oats, live stock, wool.
Green Mountain State. GreenMountain Boys.	Mt. Mansfield. Lake Champlain.	4,364 ft. 95 ft. 1,000 ft.	Montpelier, 6,266.	37.6	Hay, cereals, potatoes, lumber, marble, dairying, maple sugar, syrup, manufactures.
Old Dominion. Beagles.	Rogers Mt. Hampton.	5,719 ft. 3 ft. 950 ft.	Richmond, 85,050.	46.2	Maize, wheat, oats, tobacco, cotton, oysters, coal, iron.
Evergreen State. Chinook State.	Mt. Rainier. Tulalip.	14,363 ft. — 4 ft. 1,700 ft.	Olympia, 3,863.	7.7	Lumber, coal, wheat, oats, fruits, salmon, live stock.
The Panhandle. Panhandlers.	Spruce Mt. Harper's Ferry.	4,860 ft. 277 ft. 1,590 ft.	Charleston, 11,099.	38.9	Maize, wheat, fruits, cattle, sheep, lumber, coal, petroleum, natural gas.
Badger State. Badgers.	Rib Hill. (Michigan Lake.)	1,940 ft. 581 ft. 1,050 ft.	Madison, 19,164.	38.0	Maize, oats, barley, wheat, hay, potatoes, fruits, dairying, iron, lumber.
	Fremont Peak. Old Riverdale.	13,747 ft. 3,196 ft. 6,700 ft.	Cheyenne, 14,087.	0.9	Wool, timber, coal, copper, petroleum.

QUALIFICATIONS FOR VOTING IN EACH STATE OF THE UNION.

States and Territories.	Requirements as to Citizenship.	Previous Residence Required.				Persons Excluded from Suffrage.
		In State.	In County.	In Town.	In Precinct.	
Alabama*.....	Citizen of United States or alien who has declared intention. (*e*)	2 yrs.	1 year	3 mos.	3 mos.	Convicted of treason or other felonies, idiots, or insane.
Alaska*.....						
Arizona Ter.*...	Citizen of United States or alien who has declared intention by nativity or naturalization. (*a*) (*g*) (*j*)	1 year	30 ds.	.....	30 ds.	Idiots, insane, felons, under guardianship.
Arkansas*.....	Citizen of United States or alien who has declared intention.	1 year	6 mos.	30 ds.	30 ds.	Idiots, insane, convicted of felony, failure to pay poll-tax, U. S. soldiers, or marines.
California*.....	Citizen by nativity, naturalization (90 days prior to election), or treaty of Queretaro.	1 year	90 ds.	.....	30 ds.	Chinese, idiots, insane, embezzlers of public moneys, convicted of infamous crime.†
Colorado*.....	Citizen, native or naturalized, male or female, who is duly registered.	1 year	90 ds.	.....	10 ds.	While confined in public prison, under guardianship, *non compos mentis*, insane.
Connecticut*....	Citizen of United States who can read English language.	1 year	.....	6 mos.	.....	Convicted of heinous crime, unless pardoned.
Delaware*.....	Citizen of the United States.....	1 year	3 mos.	.....	30 ds.	Insane, paupers, or persons convicted of felony, unpardoned.
Dis. of Columbia.	See footnote on page 289.					
Florida*.....	Citizen of the United States.....	1 year	6 mos.	.....	.....	Idiots, duelists, convicted of felony, or any infamous crime.
Georgia.....	Citizen of the United States who has paid all his taxes since 1877.	1 year	6 mos.	.....	.....	Convicted of felony, bribery, or larceny, unless pardoned; idiots, and insane,
Hawaii.....						
Idaho*.....	Citizen of the United States, male or female.	6 mos.	30 ds.	.....	.....	Idiots, insane, convicted of felony, bigamists, polygamists, under guardianship. (*m*)
Illinois*.....	Citizen of the United States. (*a*)	1 year	90 ds.	30 ds.	30 ds.	Convicted of felony or bribery in elections, unless restored to citizenship. (*j*)
Indiana*.....	Citizen, or alien who has declared intention and resided one year in United States.	6 mos.	.....	60 ds.	30 ds.	United States soldiers, sailors, and marines, and persons convicted of infamous crime. (*l*)
Iowa*.....	Citizen of the United States.....	6 mos.	60 ds.	.....	.....	Idiots, insane, convicted of infamous crime, U. S. soldiers. (*j*)
Kansas*.....	Citizen of United States or alien who has declared intention (*a*)	6 mos.	30 ds.	30 ds.	10 ds.	Convicted of treason or felony, insane, under guardianship. (*i*)
Kentucky*.....	Citizen of the United States. (*a*)	1 year	6 mos.	60 ds.	60 ds.	Convicted of treason, felony, or bribery in an election, idiots, and insane. (*j*) (*h*)
Louisiana*.....	Citizen of the United States. Those able to read or write, or who own $300 worth of property assessed in their name, or whose father or grandfather was entitled to vote on Jan. 1, 1867.	2 yrs.	1 year	.....	6 mos.	Idiots, insane, felons under indictment, inmates of prison or charitable institution, except soldiers' home.
Maine*.....	Citizen of the United States.....	3 mos.	3 mos.	3 mos.	3 mos.	Paupers and Indians not taxed, under guardianship.†
Maryland*.....	Citizen of the United States.....	1 year	6 mos.	6 mos.	1 day	Felons not pardoned, lunatics, *non compos mentis*, bribery.
Massachusetts*..	Citizen who can read and write. (*a*)	1 year	6 mos.	6 mos.	6 mos.	Paupers and persons under guardianship.
Michigan*.....	Citizen of the United States. (*a*)	6 mos.	20 ds.	20 ds.	20 ds.	Indians with tribal relations, duelists and accessories.
Minnesota*.....	Citizen of United States who has been such for three months preceding election. (*a*)	6 mos.	30 ds.	30 ds.	30 ds.	Convicted of treason or felony, unpardoned; under guardianship, insane, Indians lacking customs of civilization.
Mississippi*.....	Citizen of the United States who can read or understand the Constitution.	2 yrs.	1 year	1 year	1 year	Insane, idiots, Indians not taxed, felons, persons who have not paid taxes, bigamists.
Missouri*.....	Citizen of the United States or alien who has declared intention not less than one year or more than five before election.	1 year	60 ds.	60 ds.	20 ds.	Persons in poorhouses or asylums at public expense, those in prison, or convicted of infamous crimes. (*n*)
Montana*.....	Citizen of the United States. (*a*)...	1 year	30 ds.	.....	.....	Felons not pardoned, idiots, insane, U. S. soldiers, seamen, and marines, Indians.
Nebraska*.....	Citizen of United States, or alien who has declared intention 30 days before election. (*a*)	6 mos.	40 ds.	30 ds.	10 ds.	Convicted of treason or felony, unless restored to civil rights, persons *non compos mentis*. (*j*)
Nevada*.....	Citizen of the United States.....	6 mos.	30 ds	30 ds.	30 ds.	Idiots, insane, unpardoned convicts, Indians, Chinese.
NewHampshire*	Citizen of the United States. (*a*)...	6 mos.	6 mos.	6 mos.	6 mos.	Paupers. (*p*)

VOTING STATISTICS AND STATE LEGISLATURE.

Voting Population						Governors.		Legislatures.		Salaries of Members.	Terms. Yrs.	
Total.	Native Born.	Foreign Born.	Whites.	Negroes†.	Illiterates.	Salaries.	L'gth Term Yrs.	Term.	Limit of Session.	Annual or Per Diem, while in Session.	Senators.	Representatives.
413,862	405,598	8,264	232,294	181,471	139,649	$5,000	4	Quad.	50 days	$4 per diem	4	4
37,956	26,489	11,467	25,953	111	10,735	5,000	4					
44,081	30,306	13,775	34,911	1,084	11,215	3,000	4	Bien.	60 days	$4 "		
313,836	305,464	8,372	226,597	87,157	62,615	3,000	2	Bien.	60 days	$6 "	4	2
544,087	318,817	225,270	489,545	3,711	33,508	6,000	4	Bien.	90 days	$8 "	4	2
185,708	133,935	51,773	181,616	3,215	7,689	5,000	2	Bien.	90 days	$7 "	4	2
280,340	173,248	107,092	275,126	4,576	18,984	4,000	2	Bien.	None	$300 annum	2	2
54,018	47,202	6,816	45,592	8,374	7,538	4,000	4	Bien.	60 days	$5 per diem	4	2
83,823	73,722	10,101	60,318	23,072	7,052							
139,601	127,865	11,736	77,962	61,417	30,849	5,000	4	Bien.	60 days	$6 "	4	2
500,752	493,740	7,012	277,496	223,073	158,247	5,000	2	Ann.	50 days	$4 "	2	2
79,607	13,064	66,543	19,576	93	27,363	5,000	4	Bien.	90 days	$400 annum	4	2
53,932	38,185	15,747	50,328	130	2,936	5,000	2	Bien.	60 days	$5 per diem	2	2
1,401,456	932,574	468,882	1,370,209	29,762	67,481	12,000	4	Bien.	None	$1,000 an'm	4	2
720,206	646,889	73,317	701,761	18,186	40,016	8,000	4	Bien.	60 days	$6 per diem	4	2
635,298	477,273	158,025	630,665	4,441	17,061	5,000	2	Bien.	None	$550 session	4	2
413,786	346,761	67,025	398,552	14,695	14,214	5,000	2	Bien.	50 days	$150 annum	4	2
543,996	518,772	25,224	469,206	74,728	102,528	6,500	4	Bien.	60 days	$5 per diem	4	2
325,943	299,772	26,171	177,878	147,348	122,638	5,000	4	Bien.	60 days	$5 "	4	4
217,663	178,931	38,732	216,856	445	13,952	3,000	2	Bien.	None	$300 annum	2	2
321,903	279,216	42,687	260,979	60,406	40,352	4,500	4	Bien.	90 days	$5 per diem	4	2
843,465	495,734	347,731	830,049	10,456	53,694	8,000	1	Ann.	None	$750 annum	1	1
719,478	457,353	262,125	712,245	5,193	39,230	5,000	2	Bien.	None	$800 "	2	2
506,794	245,768	261,026	502,384	2,168	20,785	7,000	2	Bien.	90 days	$500 "	4	2
349,177	344,151	5,026	150,530	197,936	118,057	4,500	4	Bien.	None	$400 session	4	4
856,684	743,659	113,025	809,797	46,418	60,327	5,000	4	Bien.	90 days	$5 per diem	4	2
101,931	58,237	43,694	94,873	711	6,209	5,000	4	Bien.	60 days	$6 per diem	4	2
301,091	209,961	91,130	297,817	2,298	7,388	2,500	2	Bien.	60 days	$5 "	2	2
17,710	10,523	7,187	14,652	70	2,271	4,000	4	Bien.	60 days	$10 "	4	2
130,987	96,099	34,888	130,648	230	10,295	3,000	2	Bien.	None	$200 annum	2	2

States and Territories.	Requirements as to Citizenship.	Previous Residence Required.				Persons Excluded from Suffrage.
		In State.	In County.	In Town.	In Precinct.	
New Jersey*	Citizen of the United States.....	1 year	5 mos.	.....	.....	Idiots, paupers, insane, convicted of crime, unless pardoned or restored by law. (*j*)
New Mexico Ter.	Citizen of the United States.....	6 mos.	3 mos.	30 ds.	30 ds.	Felon unless pardoned, U. S. soldier, sailor, or camp follower, Indians.
New York*.....	Citizen who shall have been a citizen for 90 days prior to election. A woman qualified may vote at village elections or town meetings to raise money, if she owns property in village or town. Elector of town not entitled to vote to raise money unless he or his wife own property in town.	1 yr.(*q*)	4 mos.	(*e*)	(*e*)	Offenders against elective franchise rights, guilty of bribery, betting on elections, and persons convicted of bribery or infamous crime and not restored to citizenship by the Executive. Convicts in house of refuge or reformatory not disqualified.
North Carolina..	Citizen of the United States.....	2 yrs.	6 mos.	.....	4 mos.	Convicted of felony or infamous crime, idiots, lunatics.(*i*)
North Dakota*..	Citizen of the United States and civilized Indian. (*a*)	1 year	6 mos.	.....	90 ds.	Under guardianship, persons *non compos mentis*, or convicted of felony and treason, unless restored to civil rights.†
Ohio*.....	Citizen of the United States. (*a*)...	1 year	30 ds.	20 ds.	20 ds.	Idiots, insane, felons, persons in U. S. military and naval service on duty in Ohio.
Oklahoma*.....	Citizen of the United States (*a*)...	1 year	6 mos.	None	30 ds.	Felons, idiots, insane, paupers. (*i*)
Oregon.....	Citizen of U. S., or alien who has declared intention more than 1 year prior to election. (*a*)	6 mos.	None (*r*)	None	None	Idiots, insane, convicted of felony, Chinese.
Pennsylvania*...	Citizen of U. S. at least one month, and if 22 years old or more must have paid tax within two years.	1 year	.....	.....	2 mos.	Convicted of perjury and fraud as election officers, or bribery of voters.
Porto Rico						
Rhode Island*...	Citizen of the United States.....	2 yrs.	.....	6 mos.	.....	Paupers, lunatics. (*c*)
South Carolina..	Citizen of the United States. (*d*)...	2 yrs.	1 year	4 mos.	4 mos.	Felons, bribery unless pardoned, insane, paupers.
South Dakota*..	Citizen of the United States, or alien who has declared intention. Indian who has severed tribal relations. (*a*)	6 mos. (*f*)	30 ds.	10 ds.	10 ds.	Under guardianship, insane, convicted of treason or felony unless pardoned, U. S. soldiers, seamen, and marines.
Tennessee*.....	Citizen of the U. S. who has paid poll-tax of preceding year.....	1 year	6 mos.	.....	.....	Convicted of bribery or other infamous offense.
Texas*.....	Citizen of the U. S., or alien who has declared intention six months prior to election.	1 year	6 mos.	6 mos.	(*b*)	Idiots, lunatics, paupers, felons unless pardoned or restored, United States soldiers, marines, and seamen. (*i*)
Utah*.....	Citizen of the United States, male or female.	1 year	4 mos.	.....	60 ds.	Idiots, insane, convicted of treason or crime against elective franchise unless pardoned. (*j*)
Vermont*.....	Citizen of the United States.....	1 year	3 mos.	3 mos.	3 mos.	Those who have not obtained the approbation of the local board of civil authority.
Virginia*.....	See note at foot of page 289.....	2 yrs.	1 year	1 year	30 ds.	Idiots, lunatics, paupers. (*n*) (*j*)
Washington*....	Citizen of the United States and all residents of the Territory prior to Statehood. (*a*)	1 year	90 ds.	30 ds.	30 ds.	Idiots, lunatics, convicted of infamous crimes, Indians not taxed.
West Virginia*..	Citizen of the State.....	1 year	60 ds.	6 mos.	(*b*)	Paupers, idiots, lunatics, convicted of treason, felony, or bribery at elections.
Wisconsin*.....	Citizen of United States, or alien who has declared intention, and civilized Indians. (*a*)	1 year	10 ds.	10 ds.	10 ds.	Under guardianship, insane, convicted of crime or treason, betting on elections.†
Wyoming*.....	Citizen of the United States, male or female.	1 year	60 ds.	10 ds.	10 ds.	Idiots, insane, felons, unable to read state constitution in the English language.

* Australian ballot law or a modification of it in force. † Or a person unable to read the Constitution in English and to write his name. (*a*) Women may vote in school elections. (*b*) Actual residence required in the precinct or district. (*c*) Poll-taxes must be paid to date by February 1 preceding election. (*d*) Who has paid, six months before election, any poll-taxes then due, and can read and write any section of the state constitution, or can show that he owns property in the state assessed at $300 or more, and has paid, the previous year, all taxes due thereon. (*e*) Thirty days in election district. (*f*) One year's residence in the United States prior to election required. (*g*) Mexicans desiring citizenship under treaties of 1848 and 1854. (*h*) Widows and spinsters owning property or having ward of school age may vote in school elections. (*i*) Public embezzlers, persons guilty of bribery or dishonorably discharged soldiers from United States service, unless reinstated. (*j*) No soldier, sailor, or marine a resident because stationed in the state. (*k*) Soldiers (except in soldiers' homes), sailors, and marines, in United States service. (*l*) During term fixed by court. (*m*) Inmates of houses of ill-fame. (*n*) Convicted of bribery, public embezzlement, treason, forgery, perjury, felony, petty larceny, or duelists and abettors. (*o*) Persons *non compos mentis*, under guardianship, or sentenced to state prison for one year or more, until restored by General Assembly. (*p*) Persons excused from paying taxes at their own request, and those unable to read the state constitution, or write. (*q*) Inhabitance, not residence.

Voting Population.						Governors.		Legislatures.		Salaries of Members, Annual or Per Diem, while in Session.	Terms. Yrs.	
Total.	Native Born.	Foreign Born.	Whites.	Negroes†.	Illiterates.	Salaries.	L'gth Term Yrs.	Term.	Limit of Session.		Senators.	Representatives.
555,608	357,447	198,161	532,750	21,474	38,305	10,000	3	Ann.	None	$500 annum	3	1
55,007	47,482	7,585	50,804	775	15,583	3,000	4	Bien.	60 days	$4 per diem	2	2
2,184,965	1,346,829	838,136	2,145,057	31,425	130,004	10,000	2	Ann.	None	$1,500 an'm	2	1
417,578	415,048	2,530	289,263	127,114	122,658	4,000	4	Bien.	60 days	$4 per diem	2	2
95,217	39,344	55,873	93,237	115	5,187	3,000	2	Bien.	60 days	$5 "	4	2
1,212,223	985,969	226,254	1,180,599	31,235	58,698	10,000	2	Bien.	None	$1,000 an'm	2	2
206,552	194,889	11,663	179,408	13,433	21,961	4,500	4	Bien.	60 days	$6 per diem	4	2
144,446	101,923	42,523	131,261	560	6,978	5,000	4	Bien.	40 days	$3 "	4	2
1,817,239	1,330,099	487,140	1,703,482	51,668	139,982	10,000	4	Bien.	None	$1,500 ses'n	4	2
						8,000	4	Ann.	60 days	$5 per diem		
127,144	72,820	54,324	124,001	2,765	11,675	3,000	1	Ann.	None	$5 "	1	1
283,325	280,221	3,104	130,375	152,860	99,516	3,000	2	Ann.	40 days	$200 annum	4	2
112,681	67,079	45,602	107,353	184	5,628	3,000	2	Bien.	60 days	$5 per diem	2	2
487,380	477,739	9,641	375,046	112,236	105,851	4,000	2	Bien.	75 days	$4 "	2	2
737,768	650,599	87,169	599,961	136,875	113,783	4,000	2	Bien.	None	$5 "	4	2
67,172	41,939	25,233	65,205	358	2,470	4,000	4	Bien.	60 days	$4 "	4	2
108,356	87,465	20,891	108,027	289	8,544	1,500	2	Bien.	None	$3 "	2	2
447,815	436,389	11,426	301,379	146,122	113,353	5,000	4	Bien.	60 days	$500 session	4	2
195,572	126,190	69,382	183,999	1,230	6,635	6,000	4	Bien.	60 days	$5 per diem	4	4
247,970	235,036	12,934	233,129	14,786	32,066	5,000	4	Bien.	45 days	$4 "	4	2
570,715	313,188	257,527	567,213	1,006	31,136	5,000	2	Bien.	None	$500 annum	4	2
37,898	26,563	11,335	36,262	481	1,636	2,500	4	Bien.	40 days	$5 per diem	4	2
21,329,819	16,227,285	5,102,534	19,036,143	2,065,989	2,327,540							

(*r*) Resident of county to vote for county officers. (*s*) All persons unable to read and write, and whose ancestor was not entitled to vote prior to Jan. 1, 1867. (*t*) Indians must have no tribal relations.

Residents of the District of Columbia never had the right to vote therein for national officers, or on other matters of national concern, after it became the seat of the general government. But from 1802 to June 20, 1874, the citizens of Washington, and from January 1, 1790, to said date, the citizens of Georgetown, were entitled to vote on municipal subjects and for certain municipal officers; the citizens of the portion of the District outside of Washington and Georgetown were entitled to the same privilege from April 20, 1871, to June 20, 1874, but that suffrage was abolished in the District of Columbia and was rescinded June 20, 1874, by the act of Congress of that date.

In Virginia.—Voting qualifications. All persons who six months before the election have paid their state poll-taxes for the three preceding years. Also any person who served in time of war in the army or navy of the United States, of the Confederate states, or of any state of the United States or of the Confederate states.

FACTS REGARDING

Order.	Presidents. Life Dates.	PARENTS' NAMES.	Education. Early Vocation. Religious Faith.	Wife's Name. Date of Marriage. Number of Children.
1	WASHINGTON, GEORGE. Born February 22, 1732, near Bridges Creek, Westmoreland County, Va. Died December 14, 1799, at Mt. Vernon, Va., of pneumonia, aged 67. Buried at Mt. Vernon, Va.	Eldest son of second family of Augustine Washington, a planter, of English descent. Mary Ball, second wife of Augustine Washington.	Limited education at school until 16. Surveyor, 1748; major, 1751; planter, 1758. Episcopalian.	Martha (Dandridge) Custis (1732-1802) widow with two children, in 1759, John and Martha Parke Custis. Washington had no children.
2	ADAMS, JOHN. Born October 30, 1735, at Braintree, now Quincy, Norfolk County, Mass. Died July 4, 1826, at Quincy, Mass., of debility, aged 90. Buried at Quincy, Mass.	Son of John Adams, a farmer, and descendant of Henry Adams, a Puritan emigrant of 1640 from England. Susanna Boylston.	Graduated from Harvard, 1755. Taught school for a short time; studied law, and admitted to the bar, 1758. Entered politics. Congregationalist.	Abigail Smith (1744-1818), daughter of Rev. William Smith, in 1764. Had three sons, of whom President John Quincy Adams was one, and two daughters.
3	JEFFERSON, THOMAS. Born April 13, 1743, at Shadwell, Albemarle County, Va. Died July 4, 1826, at Monticello, Va., of chronic diarrhœa, aged 83. Buried at Monticello, Albemarle county, Va.	Son of Peter Jefferson, a planter of Welsh descent, and of Jane Randolph, a sister of William Randolph of Tuckahoe.	Graduated from William and Mary, 1762. Read law under George Wythe of Virginia, and admitted to the bar, 1767. Entered politics. Liberal.	Martha (Wayles) Skelton (1748-1782), widow of Bathurst Skelton, in 1772. Had one son and five daughters.
4	MADISON, JAMES. Born March 16, 1751, at Port Conway, King George County, Va. Died June 28, 1836, at Montpelier, Va., of debility, aged 85. Buried at Montpelier, Hanover county, Va.	Son of James Madison, a planter of English descent, and of Nelly Conway.	Graduated from Princeton, 1771. Studied law. Became a statesman. Episcopalian.	Dolly (Payne) Todd (1772-1849), widow, in 1794. No children.
5	MONROE, JAMES. Born April 28, 1758, at Head of Monroe's Creek, Westmoreland County, Va. Died July 4, 1831, at New York City, of debility, aged 73. Buried at Hollywood Cemetery, Richmond, Va.	Son of Spence Monroe, a planter of Scotch descent, and of Eliza Jones.	Left William and Mary College to enter the army, 1776; abandoned the law for a public life. Episcopalian.	Eliza Kortwright (1768-1830), in 1786. Had two daughters.
6	ADAMS, JOHN QUINCY. Born July 11, 1767, at Quincy, Norfolk County, Mass. Died February 23, 1848, at Washington, D. C., of paralysis, aged 80. Buried at Quincy, Mass.	Son of the second President of the United States, John Adams, of English descent, and of Abigail Smith, a daughter of Rev. Wm. Smith.	Graduated from Harvard, 1787. Studied law with Theophilus Parsons, and was admitted to the bar, 1790. Congregationalist.	Louisa Catherine Johnson (1775-1852), in 1797. Had three sons, of whom the statesman and diplomat, Charles Francis Adams (1807-1886), was one, and one daughter.
7	JACKSON, ANDREW. Born March 15, 1767, near Cureton's Pond, Union County, North Carolina. Died June 8, 1845, at Hermitage, Tenn., of consumption, aged 78. Buried at Hermitage, near Nashville, Tenn.	Son of Andrew Jackson, a farmer of Scotch-Irish ancestry, and of Elizabeth Hutchinson.	Worked at saddler's trade, then, 1784, began the practice of law and was admitted to the bar. Appointed public prosecutor, in Tennessee, 1788. Presbyterian.	Rachel Donelson Robards (1767-1828), daughter of John Donelson, and divorced wife of Captain Robards, in 1791. No children.

THE PRESIDENTS.

Political Faith. Age at Election. Political Opponents. Electoral Vote.	Events During Term of Office.	After Life.
Federalist. Fifty-seven. *Election of 1789.* Washington, 69; John Adams, 34; John Jay, 9; R. H. Harrison, 6; John Rutledge, 6; John Hancock, 4; George Clinton, 3; Samuel Huntingdon, 2; John Milton, 2; James Armstrong, 1; Benj. Lincoln, 1; Edw. Telfair, 1. Washington was inaugurated in 1789. *Election of 1792.* Washington, 132; John Adams, 77; George Clinton, 50; Thomas Jefferson, 4; Aaron Burr, 1. Washington was inaugurated in 1793. Held office 7 years, 10 months, 4 days in all.	Admission of Vermont, Kentucky, and Tennessee, 1791-1796; Assumption of state debts, 1790; Chartering of bank, 1791; Erection of national mint, 1792; Whisky insurrection, 1794; Trouble with Indians, 1794; Retirement of Jefferson from the cabinet and the ascendency of Hamilton; Jay treaty, 1796; Scurrilous attacks on Washington by the followers of Jefferson. Invention of the cotton gin, 1793.	Followed agriculture. Was appointed commander-in-chief (1798) of the national army, because of prospect of war with France.
Federalist. Sixty-one. *Election of 1796.* John Adams, 71; Jefferson, 68; Thos. Pinckney, 59; Burr, 30; Samuel Adams, 15; Oliver Ellsworth, 11; Geo. Clinton, 7; John Jay, 5; James Iredell, 3; Geo. Washington, 2; John Henry, 2; S. Johnson, 2; C. C. Pinckney, 1. John Adams was inaugurated in 1797. Held office 4 years.	X. Y. Z. correspondence, 1798; Threatened war with France, 1798; The Alien and Sedition laws, 1798; Virginia and Kentucky resolutions, 1798-1799; Weakening of the Federalist Party by rivalry of Adams and Hamilton. City of Washington made the national capital, 1800.	Served in the Massachusetts Constitutional Convention of 1820.
Republican. Fifty-seven. *Election of 1800.* Jefferson, 73; Burr, 73; John Adams, 65; C. C. Pinckney, 64; Jay, 1; Tie vote for Jefferson and Burr; choice devolved upon House of Representatives. Jefferson had votes of ten states, which elected him president. Inaugurated in 1801. *Election of 1804.* Jefferson, 162; C. C. Pinckney, 14. Inaugurated in 1805. Held office 8 years in all.	War with Tripoli, 1802; Repeal of excise tax, 1802; Ohio admitted as a state, 1803; Purchase of Louisiana, 1803; Lewis and Clark expedition, 1804; Treaty of peace with Tripoli, 1805; Napoleon issues the Berlin decree, 1806; Burr conspiracy, 1807; Embargo act, 1807; Invention of steamboat, 1807; Non-intercourse act, 1809.	Jefferson retired to his plantation at Monticello, Va. He exerted an important influence on the government through his writings. He founded the University of Virginia
Republican. Fifty-seven. *Election of 1808.* Madison, 122; C. C. Pinckney, 47; Geo. Clinton, 6. Madison was inaugurated in 1809. *Election of 1812.* Madison, 128; DeWitt Clinton, 89. Madison was inaugurated in 1813. Held office 8 years in all.	British and French armed vessels excluded from American waters, 1810; Harrison defeats Indians at Tippecanoe, 1811; War of 1812; Louisiana admitted, 1812; Loan of $25,000,000, and issue of treasury notes for $10,000,000, 1814; Hartford convention, 1814; direct tax of $6,000,000, 1815; Treaty with eight Indian tribes east of the Mississippi, 1815; United States bank chartered by Congress, 1816; Indiana admitted, 1816.	Retired to Montpelier, Va., where he devoted himself in later life to promoting the interests of the University of Virginia. In 1829 he served in the Virginia Constitutional Convention.
Republican. Fifty-eight. *Election of 1816.* Monroe, 183; Rufus King, 34: Monroe was inaugurated in 1817. *Election of 1820.* James Monroe, 231; John Q. Adams, 1. Monroe was inaugurated in 1821. Held office 8 years in all.	Acquisition of Florida, 1819; Missouri compromise, 1821; the Monroe doctrine, 1823; Visit of Lafayette to United States, 1824; Treaty with Russia (54°, 40′, n. lat.), 1825; Admission of Missouri, Mississippi, Illinois, Alabama, and Maine.	Retired to private life in Virginia, where he served as a member of the Virginia Constitutional Convention in 1830.
Republican. Fifty-seven. *Election of 1824.* Andrew Jackson, 99; J. Q. Adams, 84; Wm. H. Crawford, 41; Henry Clay, 37. Vote given to House of Representatives, choosing from among the three highest; the Clay faction joined with that of Adams and defeated Jackson. Adams was inaugurated in 1825. Held office 4 years.	Completion of the Erie canal, 1825; Dispute between state of Georgia and United States upon the removal of the Creek Indians, 1825-1829; Rise of Anti-masonic Party, 1826; Completion of first railroad in United States, 1827; "Tariff of abominations," 1828.	After term of office had expired, he returned to Washington and entered the House of Representatives, serving from 1830 to his death.
Democrat. Sixty-one. *Election of 1828.* Jackson, 178; John Q. Adams, 83. Jackson was inaugurated in 1829. *Election of 1832.* A. Jackson, 219; Henry Clay, 49; John Floyd, 11; Wm. Wirt, 7. Jackson was inaugurated in 1833. Held office 8 years in all.	The President reforms the cabinet, 1831; "Spoils System," 1832; Bank bill vetoed by President, 1832; Black Hawk War, 1832; Nullification in S. Carolina, 1832; Henry Clay compromise tariff, 1833; Force bill, 1833; Removal of bank deposits from National bank, 1833; Treaty with Seminole Indians, 1834; Santa Anna captures the "Alamo," Texas, 1836; admission of Arkansas, 1836; Michigan, 1837.	Passed remainder of his life at the "Hermitage," near Nashville, Tenn., always taking a deep interest in public affairs.

Order.	Presidents. Life Dates.	PARENTS' NAMES.	Education. Early Vocation. Religious Faith.	Wife's Name. Date of Marriage. Number of Children.
8	VAN BUREN, MARTIN. Born December 5, 1782, at Kinderhook, Columbia County, N. Y. Died July 24, 1862, at Lindenwold, N. Y., of asthmatic catarrh, aged 79. Buried at Kinderhook, N. Y.	Son of Abraham Van Buren, a farmer of Dutch extraction, and of Maria Hoes.	Limited education. Studied law with William P. Van Ness in New York City, and was admitted to the bar, 1803. Entered politics. Reformed Dutch.	Hannah Hoes (1783-1819), in 1807. Had four sons, one of whom, John, was graduated from Yale (1828), and became attorney-general of New York (1845-1846).
9	HARRISON, WILLIAM HENRY. Born February 9, 1773, at Berkeley, Charles City County, Va. Died April 4, 1841, at Washington, D. C., of bilious pleurisy, aged 68. Buried at North Bend, Hamilton County, Ohio.	Son of Benjamin Harrison (1740-91), a statesman of English origin, and of Elizabeth Bassett.	Educated at Hampden-Sidney College, leaving in 1790 to enter the army. Entered politics in 1799. Episcopalian.	Anna Symmes (1775-1864), in 1795. Had six sons and four daughters.
10	TYLER, JOHN. Born March 29, 1790, at Greenway, Charles City County, Va. Died January 17, 1862, at Richmond, Va., of a bilious attack, aged 71. Buried at Hollywood Cemetery, Richmond, Va.	Son of John Tyler, a jurist of English ancestry, and of Mary Armistead.	Graduated from William and Mary, 1807. Was admitted to the bar, 1809. Entered the Legislature, 1811. Episcopalian.	Married first to Letitia Christian (1790-1842), in 1813. Had three sons and four daughters. Married a second time to Julia Gardiner (1820-1889), in 1844. Had five sons, one of whom, Lyon Gardiner, became president of William and Mary College in 1888, and two daughters.
11	POLK, JAMES KNOX. Born November 2, 1795, near Pineville, Mecklenburg County, North Carolina. Died June 15, 1849, at Nashville, Tenn., of chronic diarrhœa, aged 53. Buried at Polk Place, Nashville, Tenn.	Son of Samuel Polk (originally Pollock), a farmer of Scotch-Irish descent, and of Jane Knox.	Graduated, 1818, from University of North Carolina. Studied law with Felix Grundy of Tennessee, and was admitted to the bar, 1820. He entered politics, 1823. Presbyterian.	Sarah Childress (1803-1891), in 1824. No children.
12	TAYLOR, ZACHARY. Born November 22, 1784, near Orange C. H., Orange County, Va. Died July 9, 1850, at Washington, D. C., of bilious fever, aged 65. Buried at Springfield, Ky.	Son of Col. Richard Taylor, an officer of the Revolutionary War, a planter of English origin, and of Sarah Strother.	Received an elementary education, and worked on a plantation. Entered the army, 1808, where he was gradually promoted. Episcopalian.	Margaret Smith (1788-1852), in 1810. Had one son and three daughters.
13	FILLMORE, MILLARD. Born January 7, 1800, at Summerhill, Cayuga County, N. Y. Died March 9, 1874, at Buffalo, N. Y., of debility, aged 74. Buried at Buffalo, N. Y.	Son of Nathaniel Fillmore, a farmer of English descent, and of Phebe Millard.	Had little opportunity for an education. Studied law and was admitted to the bar, 1823. Entered political life by his election as an Antimason to State Legislature. Unitarian.	Married first time to Abigail Powers (1798-1853), in 1826. Had one son and one daughter. Married a second time in 1858, Caroline Carmichael McIntosh (1813-1881), a widow.
14	PIERCE, FRANKLIN. Born November 23, 1804, at Hillsborough, Hillsborough County, N. H. Died October 8, 1869, at Concord, N. H., of inflammation of stomach, aged 64. Buried in Concord, N. H.	Son of Benjamin Pierce, a farmer of English descent, and of Anna Kendrick.	Graduated from Bowdoin, 1824. Studied law under Senator Levi Woodbury. Was admitted to the bar, 1827. Entered politics, 1829. Episcopalian.	Jane Means Appleton (1806-1863), in 1834. Had three sons.
15	BUCHANAN, JAMES. Born April 23, 1791, at Cove Gap, Franklin County, Penn. Died June 1, 1868, at Wheatland, Penn., of rheumatic gout, aged 77. Buried at Lancaster, Penn.	Son of James Buchanan, a merchant of Scotch-Irish descent, and of Elizabeth Speer.	Graduated from Dickinson College, 1809. Was educated for the bar. Began the practice of law, 1812. Served as a private in War of 1812. Entered politics, 1814. Presbyterian.	Unmarried.

THE PRESIDENTS.

Political Faith. Age at Election. Political Opponents. Electoral Vote.	Events During Term of Office.	After Life.
Democrat. Fifty-four. *Election of 1836.* Van Buren, 170; W. H. Harrison, 73; Hugh L. White, 26; Daniel Webster, 14; Willie P. Mangum, 11. Van Buren was inaugurated in 1837. Held office 4 years.	Commercial panic of 1837: Sub-treasury bill, 1840; Disturbance in Canada, 1837; Resumption of specie payments in New England and New York, 1838.	Renominated in 1840 for the Presidency. Defeated by W. H. Harrison. In 1844 again renominated, but was defeated. In 1848 nominated by Free-soil Party.
Whig. Sixty-eight. *Election of 1840.* W. H. Harrison, 234; Van Buren, 60; Jas. G. Birney, —. Harrison was inaugurated in 1841. Held office 1 month.	Vice-president Tyler takes the oath of office, as president, April, 1841.	
Democrat. Fifty-one. Took oath of office as president on the death of Pres. Harrison, Apr., 1841. Held office 3 years, 11 months.	Bill to re-charter the Bank of United States vetoed by President, 1841; Repeal of Sub-treasury act, 1841; Dorr rebellion in Rhode Island, 1842; Ashburton treaty with England, 1842; Dedication of Bunker Hill monument, 1843; Morse and the telegraph, 1844; Annexation of Florida, 1845; Mormons and Abolitionists.	Retired to his estate in Charles City County, Va. Presided over Peace Convention at Washington in 1861.
Democrat. Forty-nine. *Election of 1844.* Polk, 170; Henry Clay, 105; Jas. G. Birney, —. Polk was inaugurated in 1845. Held office 4 years.	Admission of Texas, 1845, and Iowa, 1846; Hostilities begun between Mexico and the United States, 1846; Independent Treasury system re-enacted, 1846; Wilmot proviso, 1846; Treaty with Great Britain, 54°, 40′, n. lat., 1846; Admission of Wisconsin, 1848; Gold discovered in California, 1848.	
Whig. Sixty-four. *Election of 1848.* Taylor, 163; Lewis Cass, 127; Martin Van Buren, —. Taylor inaugurated 1849. Held office 1 year, 4 months, 5 days.	Clay compromise regarding the slavery dispute ("Omnibus Bill"), 1850. Vice-president Fillmore takes oath of office, as president, July 10, 1850.	
Whig. Fifty. Took oath of office as president on the death of Pres. Taylor. Held office 2 years, 7 months, 26 days.	Fugitive Slave Law signed, 1850; Filibustering expeditions, 1851.	Candidate for President in 1852 before the National Convention of the Whig Party. In 1856 he was candidate for President on the ticket of the Know-Nothing or American Party. Spent the remaining years of his life at Buffalo.
Democrat. Forty-eight. *Election of 1852.* Pierce, 254; Winfield Scott, 42; John P. Hale, —; Daniel Webster, —. Pierce was inaugurated in 1853. Held office 4 years.	Purchase of Arizona and New Mexico, 1853; opening of the World's Fair at New York, 1853; Perry's treaty with Japan, 1854; Kansas-Nebraska bill, 1854; Ostend Manifesto, 1854; Assault on Senator Sumner, 1856; Rise of the Republican Party, 1856.	Traveled in Europe.
Democrat. Sixty-five. *Election of 1856.* Buchanan, 174; John C. Fremont, 114; Millard Fillmore, 8. Buchanan was inaugurated in 1857. Held office 4 years.	Dred Scott decision, 1857; Tariff of 1857; Panic of 1857; Minnesota admitted, 1858, Oregon, 1859; Discovery of silver in Nevada and Colorado, 1859; John Brown's raid, 1859; Election of Abraham Lincoln, 1860; Secession of South Carolina, 1860; Formation of Southern Confederacy, 1861; Jefferson Davis president; Morrill tariff, 1861.	Published a defense entitled, "Mr. Buchanan's Administration on the Eve of the Rebellion."

Order.	Presidents. Life Dates.	PARENTS' NAMES.	Education. Early Vocation. Religious Faith.	Wife's Name. Date of Marriage. Number of Children.
16	LINCOLN, ABRAHAM. Born February 12, 1809, near Hodgensville, Larue County, Ky. Died April 15, 1865, by assassination at Washington, D. C., aged 56. Buried in Springfield, Ill.	Son of Thomas Lincoln, a farmer of English descent, and of Nancy Hanks.	Self-educated farm hand. Entered for service in the Black Hawk War, 1832. Read law. Entered politics, 1836. Liberal.	Mary Todd (1818-1882) in 1842. Had four sons, of whom Robert Todd Lincoln, a prominent lawyer and politician, was one.
17	JOHNSON, ANDREW. Born December 29, 1808, in Raleigh, Wake County. N. C. Died July 31, 1875, at Carter's Depot, Tenn., of paralysis, aged 66. Buried at Greeneville, Greene County, Tenn.	Son of Jacob Johnson, a sexton and constable of English descent, and of Mary McDonough.	Limited education; self-educated. Tailor in early life. Entered politics, 1828. Methodist.	Eliza McCardle (1810-1876) in 1827. Had three sons and two daughters.
18	GRANT, ULYSSES SIMPSON. Born April 27, 1822, at Point Pleasant, Clermont County, Ohio. Died July 23, 1885, at Mt. McGregor, N. Y., of cancer, aged 63. Buried at Riverside Park, New York City.	Son of Jesse Root Grant, a tanner of Scotch ancestry, and of Hannah Simpson, daughter of John Simpson.	Graduated from West Point, 1843. Entered the army as brevet second lieutenant. In the Mexican War, 1847; commander in chief of the armies of the U. S., 1864. Methodist.	Julia Dent (1826-1902) in 1848. Had three sons and one daughter.
19	HAYES, RUTHERFORD BIRCHARD. Born October 4, 1822, at Delaware, Delaware County, Ohio. Died January 17, 1893, at Fremont, Ohio, of paralysis of the heart, aged 70. Buried at Fremont, Ohio.	Son of Rutherford Hayes, a merchant of Scotch ancestry, a descendant in the sixth generation of Geo. Hayes, who left Scotland in 1680 and settled in Windsor, Conn., and of Sophia Birchard.	Graduated from Kenyon College, 1842. Studied law under Thomas Sparrow of Columbus, and spent two years in the Harvard Law School (1843-1845). Admitted to the bar, 1845. Fought in Civil War. Entered politics. Methodist.	Lucy Ware Webb (1831-1889) in 1852. Had seven sons and one daughter.
20	GARFIELD, JAMES ABRAM. Born November 19, 1831, at Orange, Cuyahoga County, Ohio. Died September 19, 1881, at Long Branch, by assassination, aged 49. Buried in Cleveland, Ohio.	Son of Abram Garfield, a farmer of English descent, and of Eliza Ballou.	Graduated from Williams College, 1856. Learned the carpenter's trade and worked at it in school vacation of 1850. Worked on a farm. Taught Latin and Greek in Hiram Institute. Practised law. Joined the army, 1861. Entered politics. Disciples of Christ.	Lucretia Rudolph (1832-——) in 1858. Had four sons, one of whom, Harry A., is president of Williams College, and James Rudolph was secretary of the interior in the Roosevelt cabinet, and one daughter.
21	ARTHUR, CHESTER ALAN. Born October 5, 1830, in Fairfield, Franklin County, Vt. Died November 17, 1886, at New York City, of Bright's disease, aged 56. Buried in Albany, N.Y.	Son of William Arthur, a clergyman of Scotch-Irish ancestry, and of Malvina Stone.	Graduated from Union College, 1848. He began to practise law, 1853. Entered politics. Episcopalian.	Ellen Lewis Herndon (1837-1880) in 1859. Had one son and one daughter.
22 & 24	CLEVELAND, STEPHEN GROVER. Born March 18, 1837, at Caldwell, Essex County, N. J. Died June 24, 1908, at Princeton, N. J., of debility, aged 71. Buried at Princeton, N. J.	Son of Richard Falley Cleveland, a clergyman of English descent, and of Anna Neal.	Public school education. Taught school (1853). Studied law; admitted to practice, 1859. Entered politics. Presbyterian.	Frances Folsom (1864-——) in 1886. Had one son and three daughters.

THE PRESIDENTS.

Political Faith. Age at Election. Political Opponents. Electoral Vote.	Events During Term of Office.	After Life.
Republican. Fifty-two. *Election of 1860.* Lincoln, 180; Stephen A. Douglas, 12; J. C. Breckinridge, 72; John Bell, 39. Lincoln was inaugurated in 1861. *Election of 1864.* Abraham Lincoln, 212; Geo. B. McClellan, 21. Lincoln was inaugurated in 1865. Held office 4 years, 1 month, 11 days.	Attack on Fort Sumter, April 12, 1861; Civil War between North and South, 1861-1865; Admission of new states (Kansas, 1861, West Virginia, 1863, Nevada, 1864); Emancipation proclamation, 1863; Assassination of the President, April 14, 1865; Vice-president takes oath of office; The Trent affair; New York riots.	
Republican. Fifty-six. Took oath of office as president on the assassination of President Lincoln, for the remainder of the term from April 15, 1865-1869.	Reorganization of Southern states, 1865; Payment of national debt begun, 1865; Tenure of office act, 1867; Purchase of Alaska, 1867; Impeachment of the President, 1868; Six states re-admitted, 1868; Burlingame treaty with China, 1868; Thirteenth and Fourteenth amendments 1865 and 1868; Full pardon to citizens of seceded states, 1868; Atlantic cable, 1866; Admission of Nebraska, 1867.	Retired to home in Greeneville, Tenn. Was chosen United States senator in 1875, and sat during the short extra session in March.
Republican. Forty-six. *Election of 1868.* Grant, 214; Horatio Seymour, 80. Grant was inaugurated in 1869. *Election of 1872.* Grant, 286; Horace Greeley, ——; Charles O'Conor, ——; James Black, ——; Thomas A. Hendricks, 42; B. Gratz Brown, 18; Charles J. Jenkins, 2; David Davis, 1. Grant was inaugurated in 1873. Held office 8 years in all.	Completion of the Pacific Railroad, 1869; All Southern states re-admitted to the Union, 1870; Fifteenth Amendment to the Constitution, 1870; Tweed ring in N. Y., 1871; Ku-Klux Klan, 1871; Great fires at Chicago, 1871, and Boston, 1872; Treaty of Washington, 1871; Settlement of the Alabama claims, 1872; Business panic of 1873, Whisky ring, 1875; Sioux War, 1876; Centennial exposition, at Philadelphia, 1876.	Retired to private life in New York. Wrote the recollections of his military life.
Republican. Fifty-four. *Election of 1876.* Rutherford B. Hayes, 185; Samuel J. Tilden, 184; Peter Cooper, ——; Green Clay Smith, ——; James B. Walker, ——. Hayes was inaugurated in 1877. Held office 4 years.	Withdrawal of troops from the South, 1877; Great railroad strikes, 1877; Yellow fever at the South, 1878; Remonetization of silver, 1878; Resumption of specie payment, 1879; Eads improvement of the navigation of the Mississippi, 1879; Treaty with China, 1880.	After his retirement he supported philanthropy and education. Acted as president of the States Board for the instruction of freedmen, and as president of the National Prison Association.
Republican. Forty-nine. *Election of 1880.* Garfield, 214; W. S. Hancock, 155; James B. Weaver, ——; Neal Dow, ——; John W. Phelps, ——. Garfield was inaugurated in 1881. Held office 6½ months.	Assassination of President Garfield July 2, 1881. Vice-president Arthur takes oath as president.	
Republican. Fifty. Took oath of office as president, 1881, on the assassination of President Garfield. Held office 3 years, 5½ months.	Passage of the Edmunds bill, 1882; Completion of East River Suspension Bridge, 1883; civil service reform commission, 1883; Reduction in rates of letter postage to two cents, 1883 and 1885; Cincinnati riot, 1884; New Orleans exhibition, 1884.	
Democrat. Forty-seven. *Election of 1884.* Cleveland, 219; James G. Blaine, 182; John P. St. John, ——; Benjamin F. Butler, ——; P. D. Wigginton, ——. Cleveland was inaugurated in 1885. Held office 4 years. *Election of 1892.* Opponents. Cleveland, 277; Benjamin Harrison, 145; James B. Weaver, 22; John Bidwell, ——; Simon Wing, ——. Cleveland was inaugurated in 1893. Held office 4 years.	First term, 1885-1889; civil service reform, 1885; Riot at Chicago, 1886; Charleston earthquake, 1886; Presidential succession act, 1886; Interstate commerce act, 1887; Chinese immigration act, 1888; Mills tariff, 1888; Western blizzards, 1888. Second term, 1893-1897; World's Fair at Chicago, 1893; Panic of 1893; Repeal of Sherman act, 1893; Coal strike, 1894; Wilson tariff act, 1894; Amnesty granted to the Mormons, 1894; Extension of civil service reform, 1894; Atlanta exhibition, 1895; Admission of Utah, 1896; Arbitration of the Venezuela question, 1896.	At end of his first term he retired to New York to the practice of law, but kept in touch with the political interests of his party. At end of second term he retired to Princeton, N. J., where he lived to the time of his death.

Order.	Presidents. Life Dates.	PARENTS' NAMES.	Education. Early Vocation. Religious Faith.	Wife's Name. Date of Marriage. Number of Children.
23	HARRISON, BENJAMIN. Born August 20, 1833, at North Bend, Hamilton County, Ohio. Died March 13, 1901, at Indianapolis, Ind., of pneumonia, aged 67. Buried at Indianapolis, Ind.	Son of John Scott Harrison, a farmer of English descent, and of Elizabeth F. Irwin. Benjamin was a grandson of the ninth president of the U. S., Wm. Henry Harrison.	Studied at Farmers College, near Cincinnati, and graduated from Miami University in 1852. Studied law. Reporter of the Supreme Court of Indiana, 1860. Entered the Federal army, 1862. Entered politics. Presbyterian.	Married first Caroline Lavinia Scott (1832-1892), daughter of Rev. J. W. Scott, in 1853. A second time he married Mary Scott Lord Dimmick (1858-——). Had one son and two daughters.
24	CLEVELAND, STEPHEN GROVER. See CLEVELAND above.			
25	MCKINLEY, WILLIAM. Born January 29, 1843, at Niles, Trumbull County, Ohio. Died September 14, 1901, by assassination, at Buffalo, N. Y., aged 57. Buried at Canton, Ohio.	Son of William McKinley, an iron manufacturer of Scotch-Irish ancestry, and of Nancy C. Allison.	Received a partial education at Poland Academy and entered Allegheny College, at Meadville, Penn., but he soon withdrew and taught school for several years. Engaged with his father in the iron manufacture. Entered the Civil War, 1861. Studied law under Judge Glidden and in the Albany Law School. Admitted to the bar in 1867. Entered politics in 1869. Methodist.	Ida Saxton (1844-1907) in 1871. Had two daughters, who died in infancy.
26	ROOSEVELT, THEODORE. Born October 27, 1858, at 28 East 20th st., New York City.	Son of Theodore Roosevelt, a merchant of Dutch ancestry, and of Martha Bulloch.	Graduated from Harvard in 1880, afterward attending the Columbia Law School. Entered politics, 1881. Member N. Y. Legislature, 1882-1884; ranching in N. D., 1884-1886; U. S. civil service commissioner, 1889-1895; president of N. Y. police board, 1895-1897; assistant secretary of navy, 1897-1898; aided in organizing "Rough Riders," 1898; governor of N. Y., January 1, 1899-December 31, 1900; Vice-president of the U. S. March 4-September 14, 1901. Reformed Dutch.	Married Alice Lee (—— 1884) daughter of George Cabot Lee of Boston, Mass., in 1883. Had one daughter, Alice, now Mrs. Nicholas Longworth. Married a second time Edith Kermit Carow (———) daughter of Chas. Carow of New York City, in 1886. Has four sons and one daughter by second marriage.
27	TAFT, WILLIAM HOWARD. Born September 15, 1857, at Cincinnati, Ohio.	Son of Alphonso Taft, secretary of war under Grant, 1876, a lawyer of English descent, and of Louise M. Torrey.	Graduated from Yale in 1878, and from law school of Cincinnati College in 1880. Practised law. Law reporter, 1880-1881; collector internal revenue in Ohio, 1882-1883; assistant county solicitor, 1881-1882, 1885-1887; judge superior court, Ohio, 1887-1890; solicitor general of U. S., 1890-1892; dean and professor in law department, University of Cincinnati, 1896-1900; U. S. circuit judge, 1892-1900; president of Philippine Commission, 1900-1904; first civil governor of P. I., 1901-1904; secretary of war, 1903-1908; sent to Cuba to adjust insurrection, 1906; to Rome, 1902; to Panama, Cuba, Porto Rico, 1907. Unitarian.	Helen Herron in 1886. Has two sons and one daughter.

THE PRESIDENTS.

Political Faith. Age at Election. Political Opponents. Electoral Vote.	Events During Term of Office.	After Life.
Republican. Fifty-five. *Election of 1888.* Benjamin Harrison, 233; Grover Cleveland, 168; Clinton B. Fisk, ——; Alson J. Streeter, ——; R. H. Cowdry, ——; James L. Curtis, ——. Harrison was inaugurated in 1889. Held office 4 years.	Opening of Oklahoma lands, 1889; Montana and Washington admitted, 1889; Samoan difficulty, 1889; Pan-American Congress, 1889-1890; New pension act, 1890; Sherman silver purchase act, 1890; McKinley tariff, 1890; Idaho and Wyoming admitted, 1890; International copyright act, 1891; Seal fishery arbitrated, 1891; Hawaiian protectorate, 1892; Chinese exclusion law, 1892; civil service reform extended, 1893.	After leaving office he was professor of international law at Leland Stanford University, Cal. In 1899 appeared as counsel for Venezuela before commission appointed to arbitrate boundary dispute with England. Was principal representative of the United States at the Hague Conference in 1899. Wrote magazine articles.
Republican. Fifty-three. *Election of 1896.* McKinley, 271; William J. Bryan, 176; Joshua Levering, ——; John M. Palmer, ——; Charles M. Matchett, ——; Charles E. Bentley, ——. McKinley was inaugurated in 1897. *Election of 1900.* McKinley, 292; William J. Bryan, 155; John G. Woolley, ——; Wharton Barker, ——; Eugene V. Debs, ——; Joseph F. Malloney, ——; J. F. R. Leonard, ——; Seth H. Ellis, ——. McKinley was inaugurated in 1901. Held office 4 years, 6 months, 10 days.	Dingley tariff, 1897; Spanish-American War, 1898-1899; Hawaii becomes a part of the United States, 1898; United States receives Samoa, 1899; Exposition at Buffalo, 1901; Assassination of the President at Buffalo, September 6, 1901; Theodore Roosevelt becomes president September 14, 1901.	
Republican. Forty-two. Took oath of office as president on the death of President McKinley, September 14, 1901. *Election of 1904.* Roosevelt, 336; Alton B. Parker, 140; Eugene V. Debs, ——; Silas C. Swallow, ——; Thomas E. Watson, ——; Charles H. Corrigan, ——. Roosevelt was inaugurated in 1905. Held office 7 years, 5 months, 18 days.	Hay-Pauncefote treaty ratified, 1901; Coal strike, 1902; President proclaims peace and amnesty in the Philippines, 1902; Reciprocity treaty between United States and Newfoundland, 1902; Cuban reciprocity treaty with amendments ratified by United States, 1903; Commercial treaty between United States and China, 1903; New department of commerce and labor, 1903; Louisiana purchase exposition opened at St. Louis, 1904; New Panama canal commission, 1905; Lewis and Clark exposition at Portland, Ore., 1905; Portsmouth treaty, 1905; Brownsville, Texas, riot, 1906; Anthracite coal strike, 1906; Pure food law takes effect, 1907; Floods at Pittsburg, 1907; National Arbitration and Peace Congress at New York, 1907; Oklahoma admitted, 1907; Arbitration treaty with France signed, 1908; Two-cent postage rate between United States and Great Britain went into effect, 1908; Treaty of arbitration with China signed, 1908.	In March, 1909, Mr. Roosevelt headed a scientific expedition to Africa, outfitted by the Smithsonian Institution. Contributing editor to the *Outlook*.
Republican. Fifty-one. *Election of 1908.* William H. Taft, 321; William J. Bryan, 162; Eugene V. Debs, ——; Eugene W. Chafin, ——; Thomas E. Watson, ——; August Gilhaus ——; Thomas L. Hisgen, ——. Taft was inaugurated in 1909.	Payne-Aldrich tariff bill passed, 1909. Tariff commission, Railroad rate bill, Statehood bill, Campaign publicity bill, Postal savings bank law, Rivers and Harbors act, Conservation law, 1910.	

MINOR POLITICAL PARTIES IN THE UNITED STATES.

ABOLITIONISTS. Those who worked together to secure the abolition of slavery.

ADAMITES. The supporters of John Quincy Adams (1821-1832).

AMERICAN PARTY. Originated in New York in 1835, organized as a national party (1852); later known as the Know-Nothing party, and adopted the motto, "America for the Americans."

ANTI-FEDERALISTS. Those who opposed the adoption of the Constitution of the United States and, later, objected to a liberal construction of its terms.

ANTI-IMPERIALISTS. Those who opposed the territorial expansion of the United States, especially to the Philippines.

ANTI-MASONS. Originated in New York in 1826 and was hostile to the Masonic body.

ANTI-NEBRASKA PARTY. Those opposed to the repeal of the Missouri Compromise; principally Northern Whigs; organized in 1854 after the passage of the Kansas-Nebraska Bill.

ANTI-RENTERS. New Yorkers who opposed the collection of rent from the tenants of the old patroon estates (1839-1847).

BARNBURNERS. Radicals of the Democratic party in New York opposed to the extension of slavery; flourished after 1844.

BLACK REPUBLICANS. Southern supporters of the Republican party in sympathy with the negro at the close of the Civil War.

BOURBONS. Old school Southern Democrats; later applied to those who hold obstinately to old traditions in politics.

BUCKTAILS. New York opponents to the policy of Governor Clinton (1815); distinguished by wearing bucktails in their hats.

CARPETBAGGERS. Northern politicians who invaded the South at the close of the Civil War.

CONSTITUTIONAL UNION PARTY. Composed of former Southern Whigs; organized in 1860.

COPPERHEADS. A name given by Republicans during the Civil War to those Northern Democrats who advocated closing the war and who sympathized with the Confederates.

CO-OPERATIONISTS. Those in the South who, just before the war, favored the secession of their own state only in the event of the coöperation of the other states.

COURT PARTY. Supporters of the two rival superior courts in Kentucky.

DOUGHFACES. A name given by John Randolph of Roanoke in 1820 to the Northern members of Congress who voted for the Missouri Compromise.

DRYS. Prohibitionists.

FREE-SOILERS. Those who opposed negro slavery and organized in 1848.

GOLD DEMOCRATS. Disaffected Democrats who, in 1896, refused their support to the regular party platform and favored a gold standard. J. M. Palmer of Illinois was their candidate for President.

GREENBACKERS. Those who between 1876 and 1886 favored the issue of an irredeemable paper currency.

HALF-BREEDS. The moderate wing of the New York Republicans who opposed the Stalwarts from 1881 to 1885.

HUNKERS. The moderate wing of the New York Democrats who opposed the Barnburners after 1844.

INDEPENDENCE PARTY. First organized as Independence League by W. R. Hearst; supported T. L. Hisgen for president, 1908.

KNOW NOTHINGS. The American party.

LIBERALS or LIBERAL REPUBLICANS. Those who opposed the reëlection of Grant in 1872 and sought a liberal policy in the South.

LIBERTY PARTY. Abolitionists about 1840.

LILY WHITES. White Republicans in the South who advocated the exclusion of the negro from the party.

LOCOFOCOS. A faction of New York Democrats in 1835.

LOOSE CONSTRUCTIONISTS. Federalists and Whigs who advocated a liberal interpretation of the Constitution of the United States.

MAHONISTS. Followers in Virginia of General William Mahone, who, in 1878, left the Democratic party.

MIDDLE-OF-THE-ROAD POPULISTS. Those of the Populists who, in 1896, voted for W. J. Bryan for President and Thomas E. Watson of Georgia for Vice-President.

MUGWUMPS. Those nominally identified with a particular party but claiming the right to vote with another party. The Indianapolis *Sentinel* first used the term in 1872; but its popular use dates from its application by the New York *Sun* in 1884 to those Independent Republicans who refused to indorse the candidacy of Blaine for President.

NATIVE AMERICANS. Know-Nothings.

NULLIFIERS. Those who claimed the right of any state to suspend within its borders the operation of any law of the United States; strong in North Carolina from 1828 until 1832.

PEOPLE'S PARTY. Populists.

POPULISTS. Organized in Cincinnati (May, 1891) from among the members of the Grange and the Farmers' Alliance.

PROHIBITIONISTS. Those who advocate the abolition of the liquor traffic; a national party since 1872.

RADICALS. The extreme wing of the Republicans after the Civil War.

READJUSTERS. The Mahonists of Virginia, who, in 1878, favored conditionally repudiating the state debt.

RELIEF PARTY. A movement in Kentucky (and in other states from 1830 to 1860) urging the legislature to enact laws to relieve the people of economic and financial burdens.

REPUDIATORS. Those in Mississippi who advocated repudiating the payment of a large issue of Union bank bonds guaranteed by the state.

SCALAWAGS. Native Southerners who, during the era of reconstruction, united with the Republicans.

SILVER GRAYS. Conservative Whigs.

SILVER PARTY. Largely disaffected Republicans who, in 1896, favored the free coinage of silver and supported the Democratic nominees.

SOCIALISTS. Those who urge the adoption of a socialistic policy in government; a national party since 1892.

STALWARTS. The "machine" wing of New York Republicans led by Roscoe Conkling from 1881 to 1885.

STRICT CONSTRUCTIONISTS. Those who favored a strict interpretation of the Constitution of the United States.

UNION LABOR PARTY. A national party in 1888.

UNION LEAGUES. Political organizations of negroes and white Republicans in the South after the Civil War.

WASHINGTONIANS. An early name for the Prohibitionist party.

WOMAN'S RIGHTS PARTY. Advocates of female suffrage; organized as a national party in 1884. In that year and again in 1888 candidates for President and Vice-President were nominated.

PRESIDENTIAL ELECTIONS.

There is, properly speaking, no popular vote for President and Vice-President; the people vote for electors, and those chosen in each state meet therein and vote for the candidates for President and Vice-President. The record of any popular vote for electors prior to 1824 is so meager and imperfect that a compilation would be useless. In most of the states, for more than a quarter of a century following the establishment of the government, the State Legislatures "appointed" the Presidential electors, and the people therefore voted only indirectly for them, their choice being expressed by their votes for members of the Legislature. In this tabulation only the aggregate electoral votes for candidates for President and Vice-President in the first nine quadrennial elections appear.

1789. Previous to 1804, each elector voted for two candidates for President. The one who received the largest number of votes was declared President, and the one who received the next largest number of votes was declared Vice-President. The electoral votes for the first President of the United States were: George Washington, 69; John Adams, of Massachusetts, 34; John Jay, of New York, 9; R. H. Harrison, of Maryland, 6; John Rutledge, of South Carolina, 6; John Hancock, of Massachusetts, 4; George Clinton, of New York, 3; Samuel Huntington, of Connecticut, 2; John Milton, of Georgia, 2; James Armstrong, of Georgia, Benjamin Lincoln, of Massachusetts, and Edward Telfair, of Georgia, 1 vote each. Vacancies (votes not cast), 4. George Washington was chosen President and John Adams Vice-President.

1792. George Washington, Federalist, received 132 votes; John Adams, Federalist, 77; George Clinton, of New York, Republican (*a*), 50; Thomas Jefferson, of Virginia, Republican, 4; Aaron Burr, of New York, Republican, 1 vote. Vacancies, 3. George Washington was chosen President and John Adams Vice-President.

1796. John Adams, Federalist, 71; Thomas Jefferson, Republican, 68; Thomas Pinckney, of South Carolina, Federalist, 59; Aaron Burr, of New York, Republican, 30; Samuel Adams, of Massachusetts, Republican, 15; Oliver Ellsworth, of Connecticut, Independent, 11; George Clinton, of New York, Republican, 7; John Jay, of New York, Federalist, 5; James Iredell, of North Carolina, Federalist, 3; George Washington, of Virginia, John Henry, of Maryland, and S. Johnson, of North Carolina, all Federalists, 2 votes each; Charles Cotesworth Pinckney, of South Carolina, Federalist, 1 vote. John Adams was chosen President and Thomas Jefferson Vice-President.

1800. Thomas Jefferson, Republican, 73; Aaron Burr, Republican, 73; John Adams, Federalist, 65; Charles C. Pinckney, Federalist, 64; John Jay, Federalist, 1 vote. There being a tie for Jefferson and Burr, the choice devolved upon the House of Representatives. Jefferson received the votes of ten States, which, being the largest vote cast for a candidate, elected him President. Burr received the votes of four States, which, being the next largest vote, elected him Vice-President. There were 2 blank votes.

1804. The Constitution of the United States having been amended, the electors at this election voted for a President and a Vice-President, instead of for two candidates for President. The result was as follows: For President, Thomas Jefferson, Republican, 162; Charles C. Pinckney, Federalist, 14. For Vice-President, George Clinton, Republican, 162; Rufus King, of New York, Federalist, 14. Jefferson was chosen President and Clinton Vice-President.

1808. For President, James Madison, of Virginia, Republican, 122; Charles C. Pinckney, of South Carolina, Federalist, 47; George Clinton, of New York, Republican, 6. For Vice-President, George Clinton, Republican, 113; Rufus King, of New York, Federalist, 47; John Langdon, of New Hampshire, 9; James Madison, 3; James Monroe, 3. Vacancy, 1. Madison was chosen President and Clinton Vice-President.

1812. For President, James Madison, Republican, 128; De Witt Clinton, of New York, Federalist, 89. For Vice-President, Elbridge Gerry, of Massachusetts, 131; Jared Ingersoll, of Pennsylvania, Federalist, 86. Vacancy, 1. Madison was chosen President and Gerry Vice-President.

1816. For President, James Monroe, of Virginia, Republican, 183; Rufus King, of New York, Federalist, 34. For Vice-President, Daniel D. Tompkins, of New York, Republican, 183; John Eager Howard, of Maryland, Federalist, 22; James Ross, of Pennsylvania, 5; John Marshall, of Virginia, 4; Robert G. Harper, of Maryland, 3. Vacancies, 4. Monroe was chosen President and Tompkins Vice-President.

1820. For President, James Monroe, of Virginia, Republican, 231; John Q. Adams, of Massachusetts, Republican, 1. For Vice-President, Daniel D. Tompkins, Republican, 218; Richard Stockton, of New Jersey, 8; Daniel Rodney, of Delaware, 4; Robert G. Harper, of Maryland, and Richard Rush, of Pennsylvania, 1 vote each. Vacancies, 3. Monroe was chosen President and Tompkins Vice-President.

Year of Election.	Candidates for President.	States.	Political Party.	Popular Vote.	Plurality.	Electoral Vote.	Candidates for Vice-President.	States.	Political Party.	Electoral Vote.
1824	Andrew Jackson,	Tenn.	Rep.	155,872	50,551	(*b*) 99	John C. Calhoun,*	S. C.	Rep.	182
	John Q. Adams,*	Mass.	Rep.	105,321	....	84	Nathan Sanford,	N. Y.	Rep.	30
	Henry Clay,	Ky.	Rep.	46,587	....	37	Nathaniel Macon,	N. C.	Rep.	24
	Wm. H. Crawford,	Ga.	Rep.	44,282	....	41	Andrew Jackson,	Tenn.	Rep.	13
							M. Van Buren,	N. Y.	Rep.	9
							Henry Clay,	Ky.	Rep.	2
1828	Andrew Jackson,*	Tenn.	Dem.	647,231	138,134	178	John C. Calhoun,*	S. C.	Dem.	171
	John Q. Adams,	Mass.	Nat. R.	509,097	....	83	Richard Rush,	Pa.	Nat. R.	83
							William Smith,	S. C.	Dem.	7
1832	Andrew Jackson,*	Tenn.	Dem.	687,502	157,313	219	M. Van Buren,*	N. Y.	Dem.	189
	Henry Clay,	Ky.	Nat. R.	530,189	....	49	John Sergeant,	Pa.	Nat. R.	49
	John Floyd,	Ga.	Ind.	33,108	....	11	Henry Lee,	Mass.	Ind.	11
	William Wirt,	Md.	Anti-Mas'nic		....	7	Amos Ellmaker (*c*),	Pa.	Anti-M	7
							Wm. Wilkins,	Pa.	Dem.	30
1836	Martin Van Buren,*	N. Y.	Dem.	761,549	24,893	170	R. M. Johnson (*d*)*	Ky.	Dem.	147
	W. H. Harrison,	O.	Whig.	736,656	....	73	Francis Granger,	N. Y.	Whig.	77
	Hugh L. White,	Tenn.	Whig.			26	John Tyler,	Va.	Whig.	47
	Daniel Webster,	Mass.	Whig.			14	William Smith,	Ala.	Dem.	23
	Willie P. Mangum,	N. C.	Whig.			11				
1840	W. H. Harrison,*	O.	Whig.	1,275,017	146,315	234	John Tyler,*	Va.	Whig.	234
	Martin Van Buren,	N. Y.	Dem.	1,128,702	....	60	R. M. Johnson,	Ky.	Dem.	48
	James G. Birney,	N. Y.	Lib.	7,059	....	....	L. W. Tazewell,	Va.	Dem.	11
							James K. Polk,	Tenn.	Dem.	1
							Thomas Earle,	Pa.	Lib.	....
1844	James K. Polk,*	Tenn.	Dem.	1,337,243	38,175	170	George M. Dallas,*	Pa.	Dem.	170
	Henry Clay,	Ky.	Whig.	1,299,068	....	105	T. Frelinghuysen,	N. J.	Whig.	105
	James G. Birney,	N. Y.	Lib.	62,300	....	....	Thomas Morris,	O.	Lib.	....

*Elected. (*a*) The first Republican party is claimed by the present Democratic party as its progenitor. (*b*) No candidate having a majority of the electoral vote, the House of Representatives elected Adams. (*c*) Candidate of the Anti-Masonic Party. (*d*) Elected by Senate.

PRESIDENTIAL ELECTIONS—*Continued.*

Year of Election.	Candidates for President.	States.	Political Party.	Popular Vote.	Plurality.	Electoral Vote.	Candidates for Vice-President.	States.	Political Party.	Electoral Vote.
1848	Zachary Taylor,*	La.	Whig.	1,360,101	139,557	163	Millard Fillmore,*	N. Y.	Whig.	163
	Lewis Cass,	Mich.	Dem.	1,220,544	....	127	William O. Butler,	Ky.	Dem.	127
	Martin Van Buren,	N. Y.	F. Soil.	291,263	....	....	Charles F. Adams,	Mass.	F. Soil.	...
1852	Franklin Pierce,*	N. H.	Dem.	1,601,474	220,896	254	William R. King,*	Ala.	Dem.	254
	Winfield Scott,	N. J.	Whig.	1,380,576	....	42	William A. Graham,	N. C.	Whig.	42
	John P. Hale,	N. H.	F. D. (*i*)	156,149	....	....	George W. Julian,	Ind.	F. D.	...
	Daniel Webster, (*k*)	Mass.	Whig.	1,670	....	....				
1856	James Buchanan,*	Pa.	Dem.	1,838,169	496,905	174	J. C. Breckenridge,*	Ky.	Dem.	174
	John C. Fremont,	Cal.	Rep.	1,341,264	....	114	William L. Dayton,	N. J.	Rep.	114
	Millard Fillmore,	N. Y.	Amer.	874,538	....	8	A. J. Donelson,	Tenn.	Amer.	8
1860	Abraham Lincoln,*	Ill.	Rep.	1,866,352	491,195	180	Hannibal Hamlin,*	Me.	Rep.	180
	Stephen A. Douglas,	Ill.	Dem.	1,375,157	....	12	H. V. Johnson,	Ga.	Dem.	12
	J. C. Breckinridge	Ky.	Dem.	845,763	....	72	Joseph Lane,	Ore.	Dem.	72
	John Bell,	Tenn.	Union.	589,581	....	39	Edward Everett,	Mass.	Union.	39
1864	Abraham Lincoln,*	Ill.	Rep.	2,216,067	407,342	(*e*) 212	Andrew Johnson,*	Tenn.	Rep.	212
	George B. McClellan,	N. J.	Dem.	1,808,725	....	21	Geo. H. Pendleton,	O.	Dem.	21
1868	Ulysses S. Grant,*	Ill.	Rep.	3,015,071	305,456	(*f*) 214	Schuyler Colfax,*	Ind.	Rep.	214
	Horatio Seymour,	N. Y.	Dem.	2,709,615	....	80	F. P. Blair, Jr.,	Mo.	Dem.	80
1872	Ulysses S. Grant,*	Ill.	Rep.	3,597,070	762,991	286	Henry Wilson,*	Mass.	Rep.	286
	Horace Greeley,	N. Y.	D. & L.	2,834,079	....	(*g*)	B. Gratz Brown,	Mo.	D. & L.	47
	Charles O'Conor,	N. Y.	Dem.	29,408	....	....	John Q. Adams,	Mass.	Dem.	...
	James Black,	Pa.	Temp.	5,608	....	....	John Russell,	Mich.	Temp.	...
	Thomas A. Hendricks	Ind.	Dem.	.....	....	42	George W. Julian,	Ind.	Lib.	5
	B. Gratz Brown,	Mo.	Dem.	.....	....	18	A. H. Colquitt,	Ga.	Dem.	5
	Charles J. Jenkins,	Ga.	Dem.	.....	....	2	John M. Palmer,	Ill.	Dem.	3
	David Davis,	Ill.	Ind.	.....	....	1	T. E. Bramlette,	Ky.	Dem.	3
							W. S. Groesbeck,	O.	Dem.	1
							Willis B. Machen,	Ky.	Dem.	1
							N. P. Banks,	Mass.	Lib.	1
1876	Samuel J. Tilden,	N. Y.	Dem.	4,284,885	250,935	184	T. A. Hendricks,	Ind.	Dem.	184
	Rutherford B. Hayes*	O.	Rep.	4,033,950	....	(*h*) 185	William A. Wheeler,*	N. Y.	Rep.	185
	Peter Cooper,	N. Y.	Gre'nb.	81,740	....	....	Samuel F. Cary,	O.	Gre'nb.	...
	Green Clay Smith,	Ky.	Pro.	9,522	....	....	Gideon T. Stewart,	O.	Pro.	...
	James B. Walker,	Ill.	Amer.	2,636	....	....	D. Kirkpatrick,	N. Y.	Amer.	...
1880	James A. Garfield,*	O.	Rep.	4,449,053	7,018	214	Chester A. Arthur,*	N. Y.	Rep.	214
	W. S. Hancock,	Pa.	Dem.	4,442,035	....	155	William H. English,	Ind.	Dem.	155
	James B. Weaver,	Iowa.	Gre'nb.	307,306	....	....	B. J. Chambers,	Tex.	Gre'nb.	...
	Neal Dow,	Me.	Pro.	10,305	....	....	H. A. Thompson,	O.	Pro.	...
	John W. Phelps,	Vt.	Amer.	707	....	....	S. C. Pomeroy,	Kan.	Amer.	...
1884	Grover Cleveland,*	N. Y.	Dem.	4,911,017	62,683	219	T. A. Hendricks,*	Ind.	Dem.	219
	James G. Blaine,	Me.	Rep.	4,848,334	....	182	John A. Logan,	Ill.	Rep.	182
	John P. St. John,	Kan.	Pro.	151,809	....	....	William Daniel,	Md.	Pro.	...
	Benjamin F. Butler,	Mass.	Peop.	133,825	....	....	A. M. West,	Miss.	Peop.	...
	P. D. Wigginton,	Cal.	Amer.	.....	...	....			Gre'nb.	
1888	Grover Cleveland,	N. Y.	Dem.	5,538,233	98,017	168	Allen G. Thurman,	O.	Dem.	163
	Benjamin Harrison,*	Ind.	Rep.	5,440,216	....	233	Levi P. Morton,*	N. Y.	Rep.	233
	Clinton B. Fisk,	N. J.	Pro.	249,907	....	....	John A. Brooks,	Mo.	Pro.	...
	Alson J. Streeter,	Ill.	U. L.	148,105	....	....	C. E. Cunningham,	Ark.	U. L.	...
	R. H. Cowdry,	Ill.	U. L.	2,808	....	....	W. H. T. Wakefield,	Kan.	U. L.	...
	James L. Curtis,	N. Y.	Amer.	1,591	....	....	James B. Greer,	Tenn.	Amer.	...
1892	Grover Cleveland,*	N. Y.	Dem.	5,556,918	380,810	277	Adlai E. Stevenson,*	Ill.	Dem.	277
	Benjamin Harrison,	Ind.	Rep.	5,176,108	....	145	Whitelaw Reid,	N. Y.	Rep.	145
	James B. Weaver,	Iowa.	Peop.	1,041,028	....	22	James G. Field,	Va.	Peop.	22
	John Bidwell,	Cal.	Pro.	264,133	....	....	James B. Cranfill,	Tex.	Pro.	...
	Simon Wing,	Mass.	Soc. L.	21,164	....	....	Charles H. Matchett,	N. Y.	Soc. L.	...
1896	William McKinley,*	O.	Rep.	7,104,779	601,854	271	Garret A. Hobart,*	N. J.	Rep.	271
	William J. Bryan,	Neb.	Dem. }	6,502,925	....	176	Arthur Sewall,	Me.	Dem.	149
	William J. Bryan,	Neb.	Peop. }		....	....	Thomas E. Watson,	Ga.	Peop.	27
	Joshua Levering,	Md.	Pro.	132,007	....	....	Hale Johnson,	Ill.	Pro.	...
	John M. Palmer,	Ill.	N.Dem.	133,148	....	....	Simon B. Buckner,	Ky.	N.Dem.	...
	Charles H. Matchett,	N. Y.	Soc. L.	36,274	....	....	Matthew Maguire,	N. J.	Soc. L.	...
	Charles E. Bentley,	Neb.	Nat. (*j*)	13,969	....	....	James H. Southgate,	N. C.	Nat. (*j*)	...
1900	William McKinley,*	O.	Rep.	7,207,923	849,790	292	Theodore Roosevelt,*	N. Y.	Rep.	292
	William J. Bryan,	Neb.	Dem. P.	6,358,133	....	155	Adlai E. Stevenson,	Ill.	Dem. P.	155
	John G. Woolley,	Ill.	Pro.	208,914	....	....	Henry B. Metcalf,	O.	Pro.	...
	Wharton Barker,	Pa.	M.P. (*m*)	50,373	....	....	Ignatius Donnelly,	Minn.	M.P. (*m*)	...
	Eugene V. Debs,	Ind.	Soc. D.	87,814	....	....	Job Harriman,	Cal.	Soc. D.	...
	Jos. F. Maloney,	Mass.	Soc. L.	39,739	....	....	Valentine Remmel,	Pa.	Soc. L.	...
	J. F. R. Leonard,	Iowa.	U.C. (*n*)	1,059	....	....	John G. Woolley,	Ill.	U.C. (*n*)	...
	Seth H. Ellis,	O.	U.R. (*o*)	5,698	....	....	Sam'l T. Nicholson.	Pa.	U.R. (*o*)	...
1904	Theodore Roosevelt,*	N. Y.	Rep.	7,623,486	2,545,715	336	C. W. Fairbanks,	Ind.	Rep.	336
	Alton B. Parker,	N. Y.	Dem.	5,082,754	....	140	Henry G. Davis,	W. Va.	Dem.	140
	Thomas E. Watson,	Ga.	Pop.	117,935	....	....	Thomas H. Tibbles,	Neb.	Pop.	...
	Eugene V. Debs,	Ind.	Soc.	402,286	....	....	Benjamin Hanford,	N. Y.	Soc.	...
	Silas C. Swallow,	Pa.	Pro.	258,787	....	....	George W. Carroll,	Tex.	Pro.	...

*Elected. (*e*) Eleven southern states not voting. (*f*) Three southern states disfranchised. (*g*) Horace Greeley died after election, and Democratic electors scattered their vote. (*h*) There being a dispute over the electoral vote of Florida, Louisiana, Oregon, and South Carolina, they were referred by Congress to an electoral commission composed of eight Republicans and seven Democrats, which, by a strict party vote, awarded 185 electoral votes to Hayes and 184 to Tilden. (*i*) Free Democrat. (*j*) Free Silver Prohibition party. (*k*) In Massachusetts. There was also a Native American ticket in that state, which received 184 votes. (*m*) Middle of the Road or Anti-Fusion People's party. (*n*) United Christian party. (*o*) Union Reformed party.

Electoral and Popular Votes of 1908, Compared with Those of 1904.

State.	Elec'l Vote 1908.		Elec'l Vote 1904.		Popular Vote, 1908.											Popular Vote, 1904.									
	Taft.	Bryan.	Roosevelt.	Parker.	Taft.	Bryan.	Chafin.	Debs.	Hisgen.	Watson.	Gilhaus.	Turney.	Republican Pluralities.	Democratic Pluralities.	*Total Vote.	Roosevelt.	Parker.	Swallow.	Debs.	Watson.	Corregan.	Holcomb.	Republican Pluralities.	Democratic Pluralities.	*Total Vote.
Alabama	...	11	...	11	26,283	74,374	665	1,399	495	1,568	.....	...	.....	48,091	104,784	22,474	79,857	612	830	5,040	.....	...	.....	57,383	108,822
Arkansas	...	9	...	9	56,624	87,015	1,194	5,842	289	1,026	.....	...	.....	30,391	151,990	46,860	64,434	993	1,816	2,318	.....	...	.....	17,574	116,421
California	10	...	10	...	214,398	127,492	11,770	28,659	4,278	.....	.....	...	86,906	.....	386,597	205,226	89,404	7,380	29,535	.....	.....	...	115,822	.....	331,871
Colorado	...	5	5	...	123,700	126,644	5,559	7,974	.....	.....	.....	...	.....	2,944	263,877	134,687	100,105	3,438	4,304	824	335	...	84,582	.....	243,693
Connecticut	7	...	7	...	112,815	68,255	2,380	5,113	650	.....	.....	...	44,560	.....	189,903	111,089	72,909	1,506	4,543	494	575	...	38,180	.....	191,127
Delaware	3	...	3	...	25,014	22,071	670	239	30	.....	.....	...	2,943	.....	48,024	23,705	19,347	607	146	51	.....	...	4,358	.....	43,856
Florida	...	5	...	5	10,654	31,104	1,356	3,747	553	1,946	.....	...	.....	20,450	49,360	8,314	27,046	5	1,605	.....	.....	...	.....	18,732	39,307
Georgia	...	13	...	13	41,603	72,048	1,058	584	77	16,910	.....	...	.....	30,445	132,280	24,003	83,472	685	197	22,635	.....	...	.....	59,469	130,992
Idaho	3	...	3	...	50,091	34,609	1,740	6,305	207	.....	.....	...	15,482	.....	92,952	47,789	18,480	1,013	4,949	353	.....	...	29,309	.....	72,584
Illinois	27	...	27	...	629,932	450,810	29,364	39,711	7,724	633	1,680	400	179,122	.....	1,160,254	632,645	327,606	34,770	69,225	6,725	4,698	830	305,039	.....	1,076,499
Indiana	15	...	15	...	348,993	338,262	18,045	13,476	514	1,193	643	...	10,731	.....	721,126	368,289	274,345	23,496	12,013	2,444	1,598	...	93,944	.....	682,185
Iowa	13	...	13	...	275,210	200,771	9,837	8,287	404	251	.....	...	74,439	.....	494,760	307,907	149,141	11,601	14,847	2,207	.....	...	158,766	.....	485,703
Kansas	10	...	10	...	197,166	161,209	5,032	12,420	79	.....	.....	...	35,957	.....	375,974	210,893	84,800	7,244	15,494	6,156	.....	...	126,093	.....	324,588
Kentucky	...	13	...	13	235,711	244,092	5,887	4,060	200	333	404	...	.....	8,381	490,687	205,277	217,170	6,609	3,602	2,511	596	...	.....	11,893	435,765
Louisiana	...	9	...	9	8,958	63,568	.....	2,538	73	.....	.....	...	.....	54,610	75,137	5,205	47,708	.....	995	.....	.....	...	.....	42,503	53,905
Maine	6	...	6	...	66,987	35,405	1,487	1,758	700	.....	.....	...	31,582	.....	106,337	64,437	27,630	1,510	2,103	338	.....	...	36,807	.....	96,027
Maryland	2	6	1	7	116,513	115,908	3,302	2,323	485	.....	.....	...	605	.....	238,531	109,497	109,446	3,034	2,247	.....	.....	...	51	.....	224,224
Massachusetts	16	...	16	...	265,966	155,543	4,373	10,778	19,237	.....	1,011	...	110,423	.....	456,908	257,822	165,746	4,274	13,604	1,294	2,359	...	92,076	.....	445,104
Michigan	14	...	14	...	335,580	175,771	16,974	11,586	760	.....	1,096	63	159,809	.....	541,830	361,866	134,151	13,308	8,941	1,159	8,941	...	227,715	.....	520,437
Minnesota	11	...	11	...	195,786	109,433	10,114	14,469	523	.....	.....	...	86,353	.....	330,325	216,651	55,187	6,253	11,692	2,103	974	...	161,464	.....	292,860
Mississippi	...	10	...	10	4,463	64,250	.....	1,048	.....	1,309	.....	...	.....	59,787	71,070	3,168	53,280	.....	392	1,424	.....	...	.....	50,112	58,264
Missouri	18	...	18	...	347,203	346,574	4,222	15,398	397	1,165	867	...	629	.....	715,826	321,449	296,312	7,191	13,009	4,226	1,674	...	25,137	.....	643,861
Montana	3	...	3	...	32,333	29,326	827	5,855	443	.....	.....	...	3,007	.....	68,781	34,932	21,773	335	5,676	1,520	208	...	13,159	.....	64,444
Nebraska	...	8	8	...	126,608	130,781	5,179	3,524	.....	.....	.....	...	.....	4,173	266,092	138,558	51,876	6,323	7,412	20,518	.....	...	86,682	.....	232,268
Nevada	...	3	3	...	10,214	10,655	.....	2,029	415	.....	.....	...	.....	441	23,313	6,867	3,982	.....	925	344	.....	...	2,885	.....	12,118
New Hampshire	4	...	4	...	53,144	33,655	905	1,299	584	.....	.....	...	19,489	.....	89,587	54,164	34,075	750	1,090	83	.....	...	20,089	.....	90,162
New Jersey	12	...	12	...	265,298	182,522	4,930	10,249	2,916	.....	1,196	...	82,776	.....	467,111	245,138	164,550	6,838	9,582	3,704	2,676	...	80,588	.....	432,488
New York	39	...	39	...	870,070	667,468	22,667	38,451	35,817	.....	3,877	...	202,602	.....	1,638,350	859,444	683,822	20,776	36,883	7,459	9,125	...	175,622	.....	1,617,509
North Carolina	...	12	...	12	114,937	136,995	.....	345	.....	.....	.....	...	.....	22,058	252,277	82,442	124,121	361	124	819	.....	...	.....	41,679	207,867
North Dakota	4	...	4	...	57,771	32,909	1,453	2,465	38	.....	.....	...	24,862	.....	94,636	52,595	14,273	1,140	2,017	165	.....	...	38,322	.....	70,190
Ohio	23	...	23	...	572,312	502,721	11,402	33,795	433	158	720	...	69,591	.....	1,121,541	600,095	344,674	19,339	36,260	1,392	2,633	...	255,421	.....	1,026,229
Oklahoma	...	7	...	7	110,558	122,406	.....	21,779	274	436	.....	...	.....	11,848	255,453	.....	.....	.....	.....	.....	.....	...	.....	.....	.....
Oregon	4	...	4	...	62,350	38,049	2,682	7,430	289	.....	.....	...	24,301	.....	110,800	60,455	17,521	3,806	7,619	753	.....	...	42,934	.....	90,154
Pennsylvania	34	...	34	...	745,779	448,785	36,694	39,913	1,057	.....	1,222	...	296,994	.....	1,273,450	840,949	337,998	33,717	21,863	.....	2,211	...	502,951	.....	1,236,738
Rhode Island	4	...	4	...	43,942	24,706	1,016	1,365	1,005	.....	183	...	19,236	.....	72,217	41,605	24,839	768	956	.....	488	...	16,766	.....	68,656
South Carolina	...	9	...	9	3,847	62,289	.....	101	43	.....	.....	...	.....	58,442	66,280	2,554	52,563	.....	.....	22	1	...	.....	50,009	55,140
South Dakota	4	...	4	...	67,466	40,226	4,039	2,846	88	.....	.....	...	27,240	.....	114,665	72,083	21,969	2,965	3,138	1,240	.....	...	50,114	.....	101,395
Tennessee	...	12	...	12	118,287	135,630	360	1,878	332	1,081	.....	...	.....	17,343	257,568	105,369	131,653	1,889	1,354	2,491	.....	...	.....	26,284	242,756
Texas	...	18	...	18	65,666	217,302	1,634	7,870	115	994	176	...	.....	151,636	293,757	50,307	167,200	3,865	2,787	8,062	421	...	.....	116,893	232,642
Utah	3	...	3	...	61,028	42,601	.....	4,895	87	.....	.....	...	18,427	.....	108,611	62,444	33,413	.....	5,767	.....	.....	...	29,031	.....	101,624
Vermont	4	...	4	...	39,552	11,496	799	802	804	.....	.....	...	28,056	.....	53,453	40,459	9,777	792	859	.....	.....	...	30,682	.....	51,888
Virginia	...	12	...	12	52,573	82,946	1,111	255	51	105	25	...	.....	30,373	137,066	46,450	80,638	1,382	56	359	218	...	.....	34,188	129,103
Washington	5	...	5	...	106,062	58,383	478	14,177	248	.....	.....	...	47,679	.....	179,348	101,540	28,098	3,229	10,023	669	1,377	...	73,442	.....	145,151
West Virginia	7	...	7	...	137,869	111,418	5,107	3,676	46	.....	.....	...	26,451	.....	258,116	132,608	100,850	4,413	1,572	99	.....	...	31,758	.....	239,542
Wisconsin	13	...	13	...	247,747	166,632	11,572	28,170	.....	.....	314	...	81,115	.....	454,435	279,870	124,036	9,770	28,220	530	223	...	155,834	.....	442,649
Wyoming	3	...	3	...	20,846	14,918	64	1,715	61	.....	.....	...	5,928	.....	37,604	20,489	8,930	217	1,077	.....	.....	...	11,559	.....	30,715
Total	321	162	336	140	7,637,676	6,410,027	247,948	432,598	82,821	29,108	13,414	463	1,817,295	551,413	14,893,046	7,620,670	5,080,207	258,205	401,380	112,510	41,330	830	3,067,182	526,719	13,539,523
Plurality	159	...	196	...	1,265,882	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	2,540,463	.....	.....	.....	.....	.....	...	.....	.....	.....
Majority	...	...	...	...	459 530	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	1,726,208	.....	.....	.....	.....	.....	...	.....	.....	.....
Per ct. total vote	...	...	...	...	51.54	43.04	.....	.....	.....	.....	.....	...	.....	.....	.....	56.28	37.52	.....	.....	.....	.....	...	.....	.....	.....

*Includes scattering votes in a few cases.

VICE-PRESIDENTS OF THE UNITED STATES.

	NAME.	Birthplace.	Year.	Paternal Ancestry.	Residence.	Qualified.	Politics.	Place of Death.	Year.	Age at Death.
1	John Adams	Quincy, Mass.	1735	English	Mass.	1789	Fed.	Quincy, Mass.	1826	90
2	Thomas Jefferson	Shadwell, Va.	1743	Welsh	Va.	1797	Rep.	Monticello, Va.	1826	83
3	Aaron Burr	Newark, N. J.	1756	English	N. Y.	1801	Rep.	Staten Island, N. Y.	1836	80
4	George Clinton	Ulster Co., N. Y.	1739	English	N. Y.	1805	Rep.	Washington, D. C.	1812	73
5	Elbridge Gerry	Marblehead, Mass.	1744	English	Mass.	1813	Rep.	Washington, D. C.	1814	70
6	Daniel D. Tompkins	Scarsdale, N. Y.	1774	English	N. Y.	1817	Rep.	Staten Island, N. Y.	1825	51
7	John C. Calhoun	Abbeville, S. C.	1782	Scotch-Irish	S. C.	1825	Rep.	Washington, D. C.	1850	68
8	Martin Van Buren	Kinderhook, N. Y.	1782	Dutch	N. Y.	1833	Dem.	Kinderhook, N. Y.	1862	79
9	Richard M. Johnson	Louisville, Ky.	1780	English	Ky.	1837	Dem.	Frankfort, Ky.	1850	70
10	John Tyler	Greenway, Va.	1790	English	Va.	1841	Dem.	Richmond, Va.	1862	72
11	George M. Dallas	Philadelphia, Pa.	1792	English	Pa.	1845	Dem.	Philadelphia, Pa.	1864	72
12	Millard Fillmore	Summerhill, N. Y.	1800	English	N. Y.	1849	Whig	Buffalo, N. Y.	1874	74
13	William R. King	Sampson Co., N. C.	1786	English	Ala.	1853	Dem.	Dallas Co., Ala.	1853	67
14	John C. Breckinridge	Lexington, Ky.	1821	Scotch	Ky.	1857	Dem.	Lexington, Ky.	1875	54
15	Hannibal Hamlin	Paris, Me.	1809	English	Me.	1861	Rep.	Bangor, Me.	1891	81
16	Andrew Johnson	Raleigh, N. C.	1808	English	Tenn.	1865	Rep.	Carter Co., Tenn.	1875	66
17	Schuyler Colfax	New York City, N. Y.	1823	English	Ind.	1869	Rep.	Mankato, Minn.	1885	62
18	Henry Wilson	Farmington, N. H.	1812	English	Mass.	1873	Rep.	Washington, D. C.	1875	63
19	William A. Wheeler	Malone, N. Y.	1819	English	N. Y.	1877	Rep.	Malone, N. Y.	1887	68
20	Chester A. Arthur	Fairfield, Vt.	1830	Scotch-Irish	N. Y.	1881	Rep.	New York City, N. Y.	1886	56
21	Thos. A. Hendricks	Muskingum Co., Ohio.	1819	Scotch-Irish	Ind.	1885	Dem.	Indianapolis, Ind.	1885	66
22	Levi P. Morton	Shoreham, Vt.	1824	Scotch	N. Y.	1889	Rep.			
23	Adlai E. Stevenson	Christian Co., Ky.	1835	Scotch-Irish	Ill.	1893	Dem.			
24	Garret A. Hobart	Long Branch, N. J.	1844	English	N. J.	1897	Rep.	Paterson, N. J.	1899	55
25	Theodore Roosevelt	New York City, N. Y.	1858	Dutch	N. Y.	1901	Rep.			
26	C. W. Fairbanks	Unionville Center, O.	1852	English	Ind.	1905	Rep.			
27	J. S. Sherman	Utica, N. Y.	1855	English	N. Y.	1909	Rep.			

SPEAKERS OF THE U. S. HOUSE OF REPRESENTATIVES.

Congress.	Years.	Name.	State.	Born.	Died.	Congress.	Years.	Name.	State.	Born.	Died.
1	1789-91	F. A. Muhlenburg.	Pa.	1750	1801	29	1845-47	John W. Davis.	Ind.	1799	1850
2	1791-93	Jonathan Trumbull	Ct.	1740	1809	30	1847-49	Robert C. Winthrop.	Mass.	1809	1894
3	1793-95	F. A. Muhlenburg.	Pa.	1750	1801	31	1849-51	Howell Cobb.	Ga.	1815	1868
4, 5	1795-99	Jonathan Dayton.	N. J.	1760	1824	32, 33	1851-55	Linn Boyd.	Ky.	1800	1859
6	1799-1801	Theo. Sedgwick.	Mass.	1746	1813	34	1855-57	Nathaniel P. Banks.	Mass.	1816	1894
7-9	1801-07	Nathaniel Macon.	N. C.	1757	1837	35	1857-59	James L. Orr.	S. C.	1822	1873
10, 11	1807-11	Joseph B. Varnum	Mass.	1750	1821	36	1859-61	Wm. Pennington.	N. J.	1796	1862
12, 13	1811-14	Henry Clay.	Ky.	1777	1852	37	1861-63	Galusha A. Grow.	Pa.	1823	1907
13	1814-15	Langdon Cheves.	S. C.	1776	1857	38-40	1863-69	Schuyler Colfax.	Ind.	1823	1885
14-16	1815-20	Henry Clay.	Ky.	1777	1852	41-43	1869-75	James G. Blaine.	Me.	1830	1893
16	1820-21	John W. Taylor.	N. Y.	1784	1854	44	1875-76	Michael C. Kerr.	Ind.	1827	1876
17	1821-23	Philip P. Barbour.	Va.	1783	1841	44-46	1876-81	Samuel J. Randall.	Pa.	1828	1890
18	1823-25	Henry Clay.	Ky.	1777	1852	47	1881-83	John W. Keifer.	Ohio.	1836	....
19	1825-27	John W. Taylor.	N. Y.	1784	1854	48-50	1883-89	John G. Carlisle.	Ky.	1835	1910
20-23	1827-34	Andrew Stevenson	Va.	1784	1857	51	1889-91	Thomas B. Reed.	Me.	1839	1902
23	1834-35	John Bell.	Tenn.	1797	1869	52, 53	1891-95	Charles F. Crisp.	Ga.	1845	1896
24-25	1835-39	James K. Polk.	Tenn.	1795	1849	54, 55	1895-99	Thomas B. Reed.	Me.	1839	1902
26	1839-41	R. M. T. Hunter.	Va.	1809	1887	56, 57	1899-03	David B. Henderson.	Ia.	1840	1908
27	1841-43	John White.	Ky.	1805	1845	58-61	1903-	Joseph G. Cannon.	Ill.	1836	....
28	1843-45	John W. Jones.	Va.	1805	1848						

PRESIDENTIAL CABINET OFFICERS.

SECRETARIES OF STATE.

Presidents.	Cabinet Officers.	Residence.	Date of Appointment.	Presidents.	Cabinet Officers.	Residence.	Date of Appointment.
Washington	Thomas Jefferson	Va.	1789	Fillmore	Daniel Webster	Mass.	1850
"	Edmund Randolph	"	1794	"	Edward Everett	"	1852
"	Timothy Pickering	Pa.	1795	Pierce	William L. Marcy	N. Y.	1853
Adams	"	"	1797	Buchanan	Lewis Cass	Mich.	1857
"	John Marshall	Va.	1800	"	Jeremiah S. Black	Pa.	1860
Jefferson	James Madison	"	1801	Lincoln	William H. Seward	N. Y.	1861
Madison	Robert Smith	Md.	1809	Johnson	"	"	1865
"	James Monroe	Va.	1811	Grant	Elihu B. Washburne	Ill.	1869
Monroe	John Quincy Adams	Mass.	1817	"	Hamilton Fish	N. Y.	1869
J. Q. Adams	Henry Clay	Ky.	1825	Hayes	William M. Evarts	"	1877
Jackson	Martin Van Buren	N. Y.	1829	Garfield	James G. Blaine	Me.	1881
"	Edward Livingston	La.	1831	Arthur	F. T. Frelinghuysen	N. J.	1881
"	Louis McLane	Del.	1833	Cleveland	Thomas F. Bayard	Del.	1885
"	John Forsyth	Ga.	1834	Harrison	James G. Blaine	Me.	1889
Van Buren	"	"	1837	"	John W. Foster	Ind.	1892
Harrison	Daniel Webster	Mass.	1841	Cleveland	Walter Q. Gresham	Ill.	1893
Tyler	"	"	1841	"	Richard Olney	Mass.	1895
"	Hugh S. Legaré	S. C.	1843	McKinley	John Sherman	Ohio	1897
"	Abel P. Upshur	Va.	1843	"	William R. Day	"	1897
"	John C. Calhoun	S. C.	1844	"	John Hay	"	1898
Polk	James Buchanan	Pa.	1845	Roosevelt	Elihu Root	N. Y.	1905
Taylor	John M. Clayton	Del.	1849	Taft	Philander Chase Knox	Pa.	1909

Presidential Cabinet Officers.—*Continued.*

POSTMASTERS GENERAL.

Presidents.	Cabinet Officers.	Residence.	Date of Appointment.	Presidents.	Cabinet Officers.	Residence.	Date of Appointment.
Washington.	Samuel Osgood	Mass.	1789	Lincoln	Montgomery Blair	Md.	1861
"	Timothy Pickering	"	1791	"	William Dennison	Ohio	1864
"	Joseph Habersham	Ga.	1795	Johnson	"	"	1865
Adams	"	"	1797	"	Alexander W. Randall	Wis.	1866
Jefferson	"	"	1801	Grant	John A. J. Cresswell	Md.	1869
"	Gideon Granger	Ct.	1801	"	James W. Marshall	Va.	1874
Madison	"	"	1809	"	Marshall Jewell	Ct.	1874
"	Return J. Meigs, Jr.	Ohio	1814	"	James M. Tyner	Ind.	1876
Monroe	"	"	1817	Hayes	David McK. Key	Tenn.	1877
"	John McLean	"	1823	"	Horace Maynard	"	1880
J. Q. Adams.	"	"	1825	Garfield	Thomas L. James	N. Y.	1881
Jackson	William T. Barry	Ky.	1829	Arthur	Timothy O. Howe	Wis.	1881
"	Amos Kendall	"	1835	"	Walter Q. Gresham	Ind.	1883
Van Buren	"	"	1837	"	Frank Hatton	Iowa	1884
"	John M. Niles	Ct.	1840	Cleveland	William F. Vilas	Wis.	1885
Harrison	Francis Granger	N. Y.	1841	"	Don M. Dickinson	Mich.	1888
Tyler	"	"	1841	Harrison	John Wanamaker	Pa.	1889
"	Charles A. Wickliffe	Ky.	1841	Cleveland	Wilson S. Bissell	N. Y.	1893
Polk	Cave Johnson	Tenn.	1845	"	William L. Wilson	W. Va.	1895
Taylor	Jacob Collamer	Vt.	1849	McKinley	James A. Gary	Md.	1897
Fillmore	Nathan K. Hall	N. Y.	1850	"	Charles Emory Smith	Pa.	1898
"	Samuel D. Hubbard	Ct.	1852	Roosevelt	Henry C. Payne	Wis.	1901
Pierce	James Campbell	Pa.	1853	"	Robt. J. Wynne	N. Y.	1904
Buchanan	Aaron V. Brown	Tenn.	1857	"	Geo. B. Cortelyou	"	1905
"	Joseph Holt	Ky.	1859	"	Geo. Von L. Meyer	Mass.	1907
"	Horatio King	Me.	1861	Taft	Frank H. Hitchcock	Ohio	1909

SECRETARIES OF THE INTERIOR.

Taylor	Thomas Ewing	Ohio	1849	Grant	Zachariah Chandler	Mich.	1875
Fillmore	James A. Pearce	Md.	1850	Hayes	Carl Schurz	Mo.	1877
"	Thos. M. T. McKernon	Pa.	1850	Garfield	Samuel J. Kirkwood	Iowa	1881
"	Alexander H. H. Stuart	Va.	1850	Arthur	Henry M. Teller	Colo.	1882
Pierce	Robert McClelland	Mich.	1853	Cleveland	Lucius Q. C. Lamar	Miss.	1885
Buchanan	Jacob Thompson	Miss.	1857	"	William F. Vilas	Wis.	1888
Lincoln	Caleb B. Smith	Ind.	1861	Harrison	John W. Noble	Mo.	1889
"	John P. Usher	"	1863	Cleveland	Hoke Smith	Ga.	1893
Johnson	"	"	1865	"	David R. Francis	Mo.	1896
"	James Harlan	Iowa	1865	McKinley	Cornelius N. Bliss	N. Y.	1897
"	Orville H. Browning	Ill.	1866	"	Ethan A. Hitchcock	Mo.	1899
Grant	Jacob D. Cox	Ohio	1869	Roosevelt	James R. Garfield	Ohio	1907
"	Columbus Delano	"	1870	Taft	Richard A. Ballinger	Wash.	1909

SECRETARIES OF AGRICULTURE.

Cleveland	Norman J. Colman	Mo.	1889	McKinley	James Wilson	Iowa	1897
Harrison	Jeremiah M. Rusk	Wis.	1889	Roosevelt	"	"	1901
Cleveland	J. Sterling Morton	Neb.	1893	Taft	"	"	1909

ATTORNEYS GENERAL.

Washington.	Edmund Randolph	Va.	1789	Taylor	Reverdy Johnson	Md.	1849
"	William Bradford	Pa.	1794	Fillmore	John J. Crittenden	Ky.	1850
"	Charles Lee	Va.	1795	Pierce	Caleb Cushing	Mass.	1853
Adams	"	"	1797	Buchanan	Jeremiah S. Black	Pa.	1857
"	Theophilus Parsons	Mass.	1801	"	Edwin M. Stanton	Ohio	1860
Jefferson	Levi Lincoln	"	1801	Lincoln	Edward Bates	Mo.	1861
"	Robert Smith	Md.	1805	"	Titian J. Coffey (*ad. in.*)	Pa.	1863
"	John Breckenridge	Ky.	1805	"	James Speed	Ky.	1864
"	Cæsar A. Rodney	Del.	1807	Johnson	"	"	1865
Madison	"	"	1809	"	Henry Stanbery	Ohio	1866
"	William Pinkney	Md.	1811	"	William M. Evarts	N. Y.	1868
"	Richard Rush	Pa.	1814	Grant	Ebenezer R. Hoar	Mass.	1869
Monroe	"	"	1817	"	Amos T. Ackerman	Ga.	1870
"	William Wirt	Va.	1817	"	George H. Williams	Ore.	1871
J. Q. Adams.	"	"	1825	"	Edwards Pierrepont	N. Y.	1875
Jackson	John McP. Berrien	Ga.	1829	"	Alphonso Taft	Ohio	1876
"	Roger B. Taney	Md.	1831	Hayes	Charles Devens	Mass.	1877
"	Benjamin F. Butler	N. Y.	1833	Garfield	Wayne MacVeagh	Pa.	1881
Van Buren	"	"	1837	Arthur	Benjamin H. Brewster	"	1881
"	Felix Grundy	Tenn.	1838	Cleveland	Augustus H. Garland	Ark.	1885
"	Henry D. Gilpin	Pa.	1840	Harrison	William H. H. Miller	Ind.	1889
Harrison	John J. Crittenden	Ky.	1841	Cleveland	Richard Olney	Mass.	1893
Tyler	"	"	1841	"	Judson Harmon	Ohio	1895
"	Hugh S. Legaré	S. C.	1841	McKinley	Joseph McKenna	Cal.	1897
"	John Nelson	Md.	1843	"	John W. Griggs	N. J.	1897
Polk	John Y. Mason	Va.	1845	"	Philander C. Knox	Pa.	1901
"	Nathan Clifford	Me.	1846	Roosevelt	W. H. Moody	Mass.	1904
"	Isaac Toucey	Ct.	1848	"	Chas. J. Bonaparte	Md.	1906
				Taft	George W. Wickersham	N. Y.	1909

SECRETARIES OF COMMERCE AND LABOR.

Roosevelt	Geo. B. Cortelyou	N. Y.	1903	Roosevelt	Oscar S. Straus	N. Y.	1906
"	Victor H. Metcalf	Cal.	1904	Taft	Charles Nagel	Mo.	1909

Presidential Cabinet Officers.—*Continued.*

SECRETARIES OF THE TREASURY.

Presidents.	Cabinet Officers.	Residence.	Date of Appointment.	Presidents.	Cabinet Officers.	Residence.	Date of Appointment.
Washington.	Alexander Hamilton	N. Y.	1789	Pierce	James Guthrie	Ky.	1853
"	Oliver Wolcott	Ct.	1795	Buchanan	Howell Cobb	Ga.	1857
Adams	"	"	1797	"	Philip F. Thomas	Md.	1860
"	Samuel Dexter	Mass.	1801	"	John A. Dix	N. Y.	1861
Jefferson	"	"	1801	Lincoln	Salmon P. Chase	Ohio	1861
"	Albert Gallatin	Pa.	1801	"	William P. Fessenden	Me.	1864
Madison	"	"	1809	"	Hugh McCulloch	Ind.	1865
"	George W. Campbell	Tenn.	1814	Johnson	"	"	1865
"	Alexander J. Dallas	Pa.	1814	Grant	George S. Boutwell	Mass.	1869
"	William H. Crawford	Ga.	1816	"	William A. Richardson	"	1873
Monroe	"	"	1817	"	Benjamin H. Bristow	Ky.	1874
J. Q. Adams.	Richard Rush	Pa.	1825	"	Lot M. Morrill	Me.	1876
Jackson	Samuel D. Ingham	"	1829	Hayes	John Sherman	Ohio	1877
"	Louis McLane	Del.	1831	Garfield	William Windom	Minn.	1881
"	William J. Duane	Pa.	1833	Arthur	Charles J. Folger	N. Y.	1881
"	Roger B. Taney	Md.	1833	"	Walter Q. Gresham	Ind.	1884
"	Levi Woodbury	N. H.	1834	"	Hugh McCulloch	"	1884
Van Buren	"	"	1837	Cleveland	Daniel Manning	N. Y.	1885
Harrison	Thomas Ewing	Ohio	1841	"	Charles S. Fairchild	"	1887
Tyler	"	"	1841	Harrison	William Windom	Minn.	1889
"	Walter Forward	Pa.	1841	"	Charles Foster	Ohio	1891
"	John C. Spencer	N. Y.	1843	Cleveland	John G. Carlisle	Ky.	1893
"	George M. Bibb	Ky.	1844	McKinley	Lyman J. Gage	Ill.	1897
Polk	Robert J. Walker	Miss.	1845	Roosevelt	Leslie M. Shaw	Iowa	1902
Taylor	William M. Meredith	Pa.	1849	"	George B. Cortelyou	N. Y.	1907
Fillmore	Thomas Corwin	Ohio	1850	Taft	Franklin McVeagh	Ill.	1909

SECRETARIES OF WAR.

Washington.	Henry Knox	Mass.	1789	Fillmore	Winfield Scott (*ad int.*)	Va.	1850
"	Timothy Pickering	Pa.	1795	Fillmore	Charles M. Conrad	La.	1850
"	James McHenry	Md.	1796	Pierce	Jefferson Davis	Miss.	1853
Adams	"	"	1797	Buchanan	John B. Floyd	Va.	1857
"	John Marshall	Va.	1800	"	Joseph Holt	Ky.	1861
"	Samuel Dexter	Mass.	1800	Lincoln	Simon Cameron	Pa.	1861
"	Roger Griswold	Ct.	1801	"	Edwin M. Stanton	"	1862
Jefferson	Henry Dearborn	Mass.	1801	Johnson	"	"	1865
Madison	William Eustis	"	1809	"	U. S. Grant (*ad in.*)	Ill.	1867
"	John Armstrong	N. Y.	1813	"	E. M. Stanton	Pa.	1868
"	James Monroe	Va.	1814	"	John M. Schofield	N. Y.	1868
"	William H. Crawford	Ga.	1815	Grant	John A. Rawlins	Ill.	1869
Monroe	Isaac Shelby	Ky.	1817	"	William T. Sherman	Ohio	1869
"	Geo. Graham (*ad int.*)	Va.	1817	"	William W. Belknap	Ia.	1869
"	John C. Calhoun	S. C.	1817	"	Alphonso Taft	Ohio	1876
J. Q. Adams.	James Barbour	Va.	1825	"	James Don Cameron	Pa.	1876
"	Peter B. Porter	N. Y.	1828	Hayes	George W. McCrary	Ia.	1877
Jackson	John H. Eaton	Tenn.	1829	"	Alexander Ramsey	Minn.	1879
"	Lewis Cass	Ohio	1831	Garfield	Robert T. Lincoln	Ill.	1881
"	Benjamin F. Butler (*act.*)	N. Y.	1837	Arthur	"	"	1881
Van Buren.	Joel R. Poinsett	S. C.	1837	Cleveland	William C. Endicott	Mass.	1885
Harrison	John Bell	Tenn.	1841	Harrison	Redfield Proctor	Vt.	1889
Tyler	"	"	1841	"	Stephen B. Elkins	W. Va.	1891
"	John McLean	Ohio	1841	Cleveland	Daniel S. Lamont	N. Y.	1893
"	John C. Spencer	N. Y.	1841	McKinley	Russell A. Alger	Mich.	1897
"	James M. Porter	Pa.	1843	"	Elihu Root	N. Y.	1899
"	William Wilkins	"	1844	Roosevelt	W. H. Taft	Ohio	1904
Polk	William L. Marcy	N. Y.	1845	"	Luke E. Wright	Tenn.	1908
Taylor	George W. Crawford	Ga.	1849	Taft	Jacob McG. Dickinson	Ill.	1909

SECRETARIES OF THE NAVY.

Adams	George Cabot	Mass.	1798	Polk	John Y. Mason	Va.	1846
"	Benjamin Stoddert	Md.	1798	Taylor	William B. Preston	"	1849
Jefferson	"	"	1801	Fillmore	William A. Graham	N. C.	1850
"	Robert Smith	"	1801	"	John P. Kennedy	Md.	1852
"	Jacob Crowninshield	Mass.	1805	Pierce	James C. Dobbin	N. C.	1853
Madison	Paul Hamilton	S. C.	1809	Buchanan	Isaac Toucey	Ct.	1857
"	William Jones	Pa.	1813	Lincoln	Gideon Welles	"	1861
"	B. W. Crowninshield	Mass.	1814	Johnson	"	"	1865
Monroe	"	"	1817	Grant	Adolph E. Borie	Pa.	1869
"	Smith Thompson	N. Y.	1818	"	George M. Robeson	N. J.	1869
"	Samuel L. Southard	N. J.	1823	Hayes	Richard W. Thompson	Ind.	1877
J. Q. Adams.	"	"	1825	"	Nathan Goff, Jr.	W. Va.	1881
Jackson	John Branch	N. C.	1829	Garfield	William H. Hunt	La.	1881
"	Levi Woodbury	N. H.	1831	Arthur	William E. Chandler	N. H.	1882
"	Mahlon Dickerson	N. J.	1834	Cleveland	William C. Whitney	N. Y.	1885
Van Buren.	"	"	1837	Harrison	Benjamin F. Tracy	"	1889
"	James K. Paulding	N. Y.	1838	Cleveland	Hilary A. Herbert	Ala.	1893
Harrison	George E. Badger	N. C.	1841	McKinley	John D. Long	Mass.	1897
Tyler	"	"	1841	Roosevelt	Wm. H. Moody	"	1902
"	Abel P. Upshur	Va.	1841	"	Paul Morton	Ill.	1904
"	David Henshaw	Mass.	1843	"	Chas. J. Bonaparte	Md.	1905
"	Thomas W. Gilmer	Va.	1844	"	Victor H. Metcalf	Cal.	1906
"	John Y. Mason	"	1844	"	Truman H. Newberry	Mich.	1908
Polk	George Bancroft	Mass.	1845	Taft	Geo. Von L. Meyer	Mass.	1909

U. S. BATTLESHIP "CONNECTICUT"

JUSTICES OF THE UNITED STATES SUPREME COURT.

(Names of the Chief Justices in Italics.)

NAME	SERVICE. Term.	Yrs.	Born.	Died.	NAME.	SERVICE. Term.	Yrs.	Born.	Died.
John Jay, N. Y.	1789-1795	6	1745	1829	Robert C. Grier, Pa.	1846-1870	23	1794	1870
John Rutledge, S. C.	1789-1791	2	1739	1800	Benjamin R. Curtis, Mass.	1851-1857	6	1809	1874
William Cushing, Mass.	1789-1810	21	1733	1810	John A. Campbell, Ala.	1853-1861	8	1811	1889
James Wilson, Pa.	1789-1798	9	1742	1798	Nathan Clifford, Me.	1858-1881	23	1803	1881
John Blair, Va.	1789-1796	7	1732	1800	Noah H. Swayne, Ohio.	1861-1881	20	1804	1884
Robert H. Harrison, Md.	1789-1790	1	1745	1790	Samuel F. Miller, Iowa.	1862-1890	28	1816	1890
James Iredell, N. C.	1790-1799	9	1751	1799	David Davis, Ill.	1862-1877	15	1815	1885
Thomas Johnson, Md.	1791-1793	2	1732	1819	Stephen J. Field, Cal.	1863-1897	34	1816	1899
William Paterson, N. J.	1793-1806	13	1745	1806	*Salmon P. Chase*, Ohio.	1864-1873	9	1808	1873
John Rutledge, S. C.	1795-1795	..	1739	1800	William Strong, Pa.	1870-1880	10	1808	1895
Samuel Chase, Md.	1796-1811	15	1741	1811	Joseph P. Bradley, N. J.	1870-1892	22	1813	1892
Oliver Ellsworth, Ct.	1796-1800	4	1745	1807	Ward Hunt, N. Y.	1872-1882	10	1811	1886
Bushrod Washington, Va.	1798-1829	31	1762	1829	*Morrison R. Waite*, Ohio.	1874-1888	14	1816	1888
Alfred Moore, N. C.	1799-1804	5	1755	1810	John M. Harlan, Ky.	1877-	..	1833	....
John Marshall, Va.	1801-1835	34	1755	1835	William B. Woods, Ga.	1880-1887	7	1824	1887
William Johnson, S. C.	1804-1834	30	1771	1834	Stanley Matthews, Ohio.	1881-1889	8	1824	1889
Brockholst Livingston, N. Y.	1806-1823	17	1757	1823	Horace Gray, Mass.	1881-1902	21	1828	1902
Thomas Todd, Ky.	180 1826	19	1765	1826	Samuel Blatchford, N. Y.	1882-1893	11	1820	1893
Joseph Story, Mass.	1811-1845	34	1779	1845	Lucius Q. C. Lamar, Miss.	1888-1893	5	1825	1893
Gabriel Duval, Md.	1811-1836	25	1752	1844	*Melville W. Fuller*, Ill.	1888-1910	22	1833	1910
Smith Thompson, N. Y.	1823-1843	20	1767	1843	David J. Brewer, Kan.	1889-	..	1837	....
Robert Trimble, Ky.	1826-1828	2	1777	1828	Henry B. Brown, Mich.	1890-1906	16	1836	....
John McLean, Ohio.	1829-1861	32	1785	1861	George Shiras, Jr., Pa.	1892-1902	10	1832	....
Henry Baldwin, Pa.	1830-1844	14	1779	1844	Howell E. Jackson, Tenn.	1893-1895	2	1832	1895
James M. Wayne, Ga.	1835-1867	32	1790	1867	Edward D. White, La.	1894-	..	1845	....
Roger B. Taney, Md.	1836-1864	28	1777	1864	Rufus W. Peckham, N. Y.	1895-1909	14	1838	1909
Philip P. Barbour, Va.	1836-1841	5	1783	1841	Joseph McKenna, Cal.	1898-	..	1843	....
John Catron, Tenn.	1837-1865	28	1786	1865	Oliver W. Holmes, Mass.	1902-	..	1841	....
John McKinley, Ala.	1837-1852	15	1780	1852	William R. Day, Ohio.	1903-	..	1849	....
Peter V. Daniel, Va.	1841-1860	19	1785	1860	William H. Moody, Mass.	1907-	..	1853	....
Samuel Nelson, N. Y.	1845-1872	27	1792	1873	Horace H. Lurton, Tenn.	1909-	..	1844	....
Levi Woodbury, N. H.	1845-1851	6	1789	1851	Charles E. Hughes, N. Y.	1910-	..	1862	....

The Asiatic Expedition of the United States Navy in 1908 and 1909.

NAME.	DATE OF LAUNCH.	Tons Displacement.	No. Officers.	No. Men.	Speed in Knots.
Connecticut	September 29, 1904.	16,000	41	840	18.78
Kansas	August 12, 1905.	16,000	41	809	18.09
Louisiana	August 27, 1904.	16,000	41	840	18.82
Vermont	August 31, 1905.	16,000	41	840	18.33
Georgia	October 11, 1904.	14,948	40	772	19.26
New Jersey	November 10, 1904.	14,948	40	772	19.18
Rhode Island	May 17, 1904.	14,948	40	772	19.01
Virginia	April 5, 1904.	14,948	40	772	19.01
Minnesota	April 8, 1905.	16,000	41	840	18.85
Ohio	May 18, 1901.	12,500	41	759	17.82
Missouri	December 28, 1901.	12,500	40	739	18.15
Maine	July 27, 1901.	12,500	41	772	18.00
Alabama	May 18, 1898.	11,552	34	679	17.01
Illinois	October 4, 1898.	11,552	34	656	17.45
Kearsarge	March 24, 1898.	11,520	39	651	16.82
Kentucky	March 24, 1898.	11,520	35	651	16.90

DETAILS OF THE FLEET.

The ship of lowest cost in the fleet is the **Illinois**, which shows a total cost of $4,621,000, of which $2,595,000 is contract price. She was built by the Newport News Shipbuilding and Dry Dock Company.

The ship of highest cost is the **Connecticut**, used by Admiral Evans as a flagship. She is the only one of these vessels built in a navy yard,—at Brooklyn. The total cost was $7,677,000.

The **Illinois, Kearsarge, Kentucky, Minnesota, Missouri,** and **Virginia** were built at the Newport News yard.

The **New Jersey, Rhode Island,** and **Vermont** were built by the Fore River Shipbuilding Company of Quincy, Mass., on Boston harbor.

The **Alabama** and the new **Maine** were built by the William Cramp & Sons' Ship and Engine Building Company of Philadelphia.

The **Kansas** was built by the New York Shipbuilding Company of Camden, N. J.

The **Georgia** was built by the Bath Iron Works of Bath, Me.

The **Ohio** was built by the Union Iron works of San Francisco.

The total aggregate cost of these sixteen battleships was $96,606,000.

The cost of maintaining these sixteen battleships for one year is $9,417,000 or slightly more than $25,000 a day.

The ordinary cruising speed on the long voyage was 10 knots an hour.

ITINERARY OF THE FLEET.

Dec. 16, 1907. Left Hampton Roads for Trinidad, 1,850 miles.
Dec. 23. Arrived at Trinidad one day ahead of scheduled time.
Dec. 29. Left Trinidad for Rio de Janeiro, 3,100 miles.
Jan. 12, 1908. Arrived at Rio de Janeiro.
Jan. 21. Left Rio de Janeiro for Punta Arenas, 2,228 miles.
Jan. 31. Arrived at Punta Arenas.
Feb. 8. Left Punta Arenas for Callao, Peru, 2,666 miles.
Feb. 14. Arrived at Valparaiso, Chile.
Feb. 20. Arrived at Callao, Peru.
Feb. 29. Left Callao for Magdalena Bay, 3,112 miles.

Mar. 12. Arrived for target practice at Magdalena Bay, an indentation on the southwest coast of Lower California, 1,000 miles from San Francisco and 2,000 miles from Panama. The bay is 15 miles long and 12 miles wide. Before the cruise of the fleet, Mexico gave the United States the privileges of coaling and naval station there for three years.
April 14. Fleet arrived at San Diego, Cal., the first home port since leaving Hampton Roads. The official log showed 13,569 knots for the entire run to this point.
April 18. Arrived at San Pedro Harbor, the port of Los Angeles, Cal.
May 6. Arrived at San Francisco.
May 8. Secretary Metcalf reviewed the combined Atlantic and Pacific fleets at San Francisco.
May 9. Admiral Robley D. Evans, U. S. N., succeeded in command of the Atlantic battleship fleet by Admiral Thomas.
May 15. Admiral Charles S. Sperry took command of the Atlantic fleet at San Francisco.
May 18. Sailed for Seattle.
July 7. Fifteen battleships of the Atlantic fleet sailed from San Francisco for Honolulu.
July 16. Reached Honolulu.
Aug. 8. Arrived at Auckland, N. Z.
Aug. 19. Arrived at Sydney, N. S. W.
Aug. 31. Arrived at Melbourne.
Sept. 4. Left Melbourne.
Sept. 10. Arrived at Albany, Australia.
Sept. 18. Left Australia for Manila.
Oct. 2. Arrived at Manila.
Oct. 17. Arrived at Yokohama, Japan.
Oct. 26. Fleet divided after leaving Japan, one section going to Manila, the other to Amoy.
Oct. 29. American battleship fleet under Admiral Emory arrives at Amoy, China.
Nov. 5. Departure from Amoy.
Nov. 30. Second section departed from Manila.
Dec. 6. Fleet passed Singapore.
Dec. 13. Welcomed at Colombo, Ceylon.
Dec. 28. Aden passed en route to Suez.
Dec. 29. Fleet passed Perim, at entrance to Red Sea.
Jan. 3, 1909. Arrived at Suez.
Jan. 6. Fleet enters the Suez canal.
Jan. 10. Battleship Connecticut arrived at Naples; other ships proceeded to Villefranche.
Jan. 17. Battleships Missouri and Ohio of the American fleet arrived at Athens.
Jan. 30. First division left Algiers for Gibraltar.
Feb. 1. First division arrived at Gibraltar.
Feb. 6. Departure from Gibraltar.
Feb. 7. Passed Cape St. Vincent, Portugal.
Feb. 22. Arrived at Hampton Roads.

SUMMARY OF THE UNITED STATES NAVY.

Battleships (first and second class), 25; Armored Cruisers, 10; Cruisers, first class, 5; Cruisers, second class, 7; Cruisers, third class, 15; Torpedo Boat Destroyers, 16; Torpedo Boats, 36; Submarines, 12; Monitors, 10; Wooden Cruisers, 4; Gunboats, 38; Transports, 7; Supply Ships, 7; Hospital Ship, 1; Colliers, 15; Converted Yachts, 22; Tugs, 42; Training Sailing Ships, 5; Receiving Ships, 11; Unserviceable for seagoing purposes, 11. Under construction or authorized: Battleships, first class, 6; Torpedo Boat Destroyers, 15; Submarines, 15; Gunboat, 1; Colliers, 7; Tugs, 2.

NAVY YARDS.

1. Brooklyn Navy Yard, Brooklyn, N. Y.
2. Charlestown Navy Yard, Boston, Mass.
3. Portsmouth Navy Yard, near Norfolk, Va.
4. Kittery Navy Yard, opposite Portsmouth, N. H.
5. Philadelphia Navy Yard, Philadelphia, Pa.
6. Mare Island Navy Yard, near San Francisco, Cal.
7. Washington City Navy Yard, Washington, D. C.
8. Puget Sound Navy Yard, Bremerton, Wash.

There are naval stations at Port Royal, S. C.; Charleston, S. C.; Key West, Fla.; Pensacola, Fla.; Algiers, La.; Great Lakes, North Chicago, Ill.; a torpedo and training station at Newport, R. I., and a training station on Yerba Buena Island, Cal., and the Naval War College, Newport, R. I.

Naval stations have been established at Tutuila, Samoa; Island of Guam; San Juan, Porto Rico; Culebra, W. I.; Guantanamo, Cuba; Honolulu, H. I., and Cavite, Philippine Islands. The latter has become an important naval base for the Asiatic squadron.

Old Vessels.—There are in the navy a small number of old vessels which are unserviceable for war purposes. Eleven of these vessels are in service as receiving ships at the principal navy yards.

Tugs.—There are 42 tugs in the naval service, of which the Potomac has a displacement of 785 tons, and the two smallest, the Chickasaw and Waban, 100 and 150 tons. These vessels are distributed among the various naval stations in the United States and the Philippine Islands. Two new seagoing tugs, Patapsco and Patuxent, of 755 tons each, are under construction.

Vessels Used by Naval Militia.—The following vessels have been assigned to the various naval militia: Aileen, Alert, Alvarado, Don Juan de Austria, Dorothea, Elfrida, Essex, Gopher, Hawk, Huntress, Isla de Cuba, Newark, Oneida, Portsmouth, Puritan, Sandoval, Stranger, Sylvia, and Yantic.

UNITED STATES NAVY PAY TABLE.

	At Sea.	Shore duty.
Admiral	$14,850	$13,500
Rear Admirals, first nine	8,800	8,000
Rear Admirals, second nine	6,600	6,000
Brigadier General, Commandant Marine Corps	6,600	6,000
Captains	4,400	4,000
Commanders	3,850	3,500
Lieutenant Commanders	3,300	3,000
Lieutenants	2,640	2,400
Lieutenants (Junior Grade)	2,200	2,000
Ensigns	1,870	1,700
Chief Boatswains, Chief Gunners, Chief Carpenters, Chief Sailmakers	1,870	1,700
Midshipmen (At Naval Academy)	600	600
Midshipmen (After Graduation)	1,400	1,400
Mates	1,500	1,125
Medical and Pay Directors and Inspectors having the same rank at sea	4,400	4,000
Fleet Surgeons and Fleet Paymasters	4,400	4,000
Surgeons and Paymasters	3,300	3,000
Chaplains	2,200 to 4,400	2,000 to 4,000
Professors and Civil Engineers	2,640 to 4,400	2,400 to 4,000
Naval Constructors	2,640 to 4,400	2,400 to 4,000

Officers on leave or waiting orders generally have one half sea pay. Officers paid under old navy pay lose one half pay for each day not performing active duty. Officers receiving army pay are allowed 30 days' leave per year with full shore pay.

All officers paid under this table, below the rank of Rear Admiral, are entitled to 10 per cent. increase upon the full yearly pay of their grades for each and every period of five years' service as "longevity pay," computed upon their total actual service in the Navy or Marine Corps, provided that the total amount of such increase shall not exceed 40 per cent. upon the full yearly pay of their grade.

Officers of the line, medical and pay corps, commissioned prior to July 1, 1899, are entitled to receive pay according to the then existing law whenever it is in excess of the pay of officers of corresponding rank in the army.

All officers on sea duty and all officers on shore duty beyond the continental limits of the United States shall while so serving receive ten per centum additional of their salaries and increase as above provided, and such increase shall commence from reporting for duty on board ship or the date of sailing from the United States for shore duty beyond seas or to join a ship in foreign waters.

Warrant officers (boatswains, gunners, carpenters, sailmakers, pharmacists, warrant machinists, and pay clerks) are paid from $1,125 to $2,250 a year.

Commandants' clerks receive from $1,200 to $1,800 a year.

Petty officers (masters-at-arms, boatswains' mates, gunners' mates, turret captains, quartermasters, machinists, hospital stewards, yeomen, bandmasters, first musicians, coxswains, electricians, boiler makers, coppersmiths, blacksmiths, plumbers and fitters, sailmakers' mates, carpenters' mates, oilers, printers, painters, water tenders, and hospital apprentices (first class) receive from $390 to $924 a year.

The pay of first-class seamen per month is $26; seamen gunners, $28; firemen, first class, $38; musicians, first class, $34; shipwrights, $27.

The pay of second-class seamen per month is: Ordinary seamen, $21; firemen, second class, $33; musicians, second class, $33.

The pay of third-class seamen per month is: Landsmen, for training, $17; coal passers, $24; apprentices, third class, $16.

NAVIES OF THE WORLD.

Powers.	Modern Battleships.	Older Battleships.	Armored Cruisers.	First Class Cruisers.	Second Class Cruisers.	Third Class Cruisers.	Scout Ships.	Torpedo Gunboats.	Torpedo Boat Destroyers.	Torpedo Boats.	Submarines.	Monitors.	Unprotected Cruisers.	Personnel, Officers and Men.
Great Britain	55	2	38	19	32	14	9	17	158	167	61	..	..	*99,679
United States	26	4	8	5	7	16	3	40	16	36	19	10	10	47,750
Germany	24	4	14	..	11	10	..	21	93	47	4	..	..	†33,500
Japan	14	5	13	3	12	2	2	..	62	95	16	..	..	‡36,480
France	25	3	22	8	8	3	..	..	76	331	61	..	..	25,500
Italy	9	4	..	7	3	13	..	10	29	110	13	..	..	27,789
Austria-Hungary	9	..	5	..	..	4	..	7	12	44	2	..	..	11,993
Russia	11	2	5	6	8	2	..	8	80	55	35	..	..	60,000
Sweden	5	7	1	..	..	..	..	5	6	56	..	11	..	4,000
Norway	4	..	..	..	..	..	4	4	3	29	..	..	..	1,130
Denmark	4	3	..	..	1	4	..	..	..	24	..	..	..	4,000
Netherlands	6	2	..	..	7	1	..	26	..	90	1	..	..	8,600
Spain	..	5	..	..	1	3	..	5	5	9	..	..	..	5,000
Portugal	2	..	..	..	..	4	..	..	..	10	1	..	..	6,000
Greece	..	3	..	..	..	..	..	8	..	12	..	..	..	4,000
Turkey	..	5	..	..	2	..	..	3	5	38	..	..	..	30,800
Argentina	3	1	4	1	2	2	..	2	4	8	..	..	..	5,000
Brazil	3	1	..	1	1	3	..	5	..	..	..	..	..	8,000
Chile	2	1	..	1	3	1	..	2	6	14	..	..	..	8,000
China	..	..	..	1	3	..	10	..	..	..	..	..	..	
Siam	..	..	..	..	1	..	..	..	..	..	..	..	..	§5,110
Mexico	..	..	..	..	..	5	..	2	..	..	..	..	..	1,160

* Naval reserve; seamen number 23,000. † Reserve of 110,000 men. ‡ Reserve of 114,000 men. § Reserve of 120,000 men.

ORGANIZATION OF THE UNITED STATES ARMY.

The army in active service as now organized under the acts of Congress of February 2, 1901, January 25, 1907, and April 23, 1908, comprises 15 regiments of cavalry, 765 officers and 13,266 enlisted men; 6 regiments of field artillery, 220 officers and 5,245 enlisted men; a coast artillery corps, 170 companies, 628 officers and 19,321 enlisted men; 30 regiments of infantry, 1,530 officers and 26,616 enlisted men; 3 battalions of engineers, 2,002 enlisted men, commanded by officers detailed from the corps of engineers; the Porto Rico regiment of infantry, 31 officers and 576 enlisted men; staff corps, military academy, Indian scouts, recruits, etc., 8,900 enlisted men, and a provisional force of 50 companies of native scouts in the Philippines, 166 officers and 5,508 enlisted men. The total number of commissioned officers, staff and line, on the active list, is 4,477 (including 191 first lieutenants medical reserve corps on active duty), and the total enlisted strength, staff and line, is 77,743, exclusive of the provisional force and the hospital corps. The law provides that the total enlisted strength of the army shall not exceed at any one time 100,000.

MILITARY DIVISIONS AND DEPARTMENTS.

Department of the East.—New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, West Virginia, Virginia, Porto Rico and islands and keys adjacent; headquarters, Governor's Island, N. Y. Commander, Maj.-Gen. Leonard Wood.

Department of the Gulf.—North Carolina, South Carolina, Tennessee, Georgia, Florida, Alabama, Louisiana, and Mississippi; headquarters, Atlanta, Ga. Commander, Brig.-Gen. Ramsay D. Potts.

Department of the Lakes.—Wisconsin, Michigan, Illinois, Indiana, Ohio, and Kentucky; headquarters, Chicago, Ill. Commander, Maj.-Gen. Fred'k D. Grant.

Department of the Missouri.—Missouri, Iowa, Nebraska, South Dakota, Wyoming (except Yellowstone National Park), and Kansas; headquarters, Omaha, Nebraska. Commander (temporarily), Brig.-Gen. William H. Carter.

Department of Dakota.—Minnesota, North Dakota, Montana, and the Yellowstone National Park; headquarters, St. Paul, Minn. Commander, Brig.-Gen. W. S. Edgerly.

Department of Texas.—Texas, Arkansas, and Oklahoma; headquarters, San Antonio, Tex. Commander, Brig.-Gen. A. L. Myer.

Department of the Colorado.—Colorado, Utah, Arizona, and New Mexico; headquarters, Denver, Colo. Commander, Brig.-Gen. Earl D. Thomas.

Department of California.—California, Nevada, and Hawaii; headquarters, San Francisco, Cal. Commander, Maj.-Gen. John F. Weston.

Department of the Columbia.—Washington, Oregon, Idaho (excepting the Yellowstone National Park), and Alaska; headquarters, Vancouver Barracks, Wash. Commander, Brig.-Gen. Daniel H. Brush.

Philippines Division.—Embracing Departments of Luzon, Visayas and Mindanao; headquarters, Manila, P. I. Commander, Brig-Gen. Tasker H. Bliss (temporarily).

Department of Luzon.—Headquarters, Manila, P. I. Commander, Brig.-Gen. A. L. Mills.

Department of the Visayas.—Headquarters, Iloilo, P. I. Commander, Brig.-Gen. C. L. Hodges.

Department of Mindanao.—Headquarters, Zamboanga, P. I. Commander, Brig.-Gen. ——.

ARMY PAY TABLE.

Grades.	Pay of Officers in Active Service. Yearly Pay. First 5 years' Service.	After 5 years' Service.	After 10 years' Service.	After 15 years' Service.	After 20 years' Service.	Pay of Retired Officers. Yearly Pay. First 5 years' Service.	After 5 years' Service.	After 10 years' Service.	After 15 years' Service.	After 20 years' Service.
		10 p. c.	20 p. c.	30 p. c.	40 p. c. (a)					
Lieutenant General	$11,000	....	....	....	....	$8,250	....	....	....	....
Major General	8,000	....	....	....	....	6,000	....	....	....	....
Brigadier General	6,000	....	....	....	....	4,500	....	....	....	....
Colonel (b)	4,000	$4,400	$4,800	$5,000	$5,000	3,000	$3,300.00	$3,600	$3,750.00	$3,750
Lieutenant Colonel (b)	3,500	3,850	4,200	4,500	4,500	2,625	2,887.50	3,150	3,375.00	3,375
Major (b)	3,000	3,300	3,600	3,900	4,000	2,250	2,475.00	2,700	2,924.40	3,000
Captain	2,400	2,640	2,880	3,120	3,360	1,800	1,980.00	2,160	2,340.00	2,520
First Lieutenant	2,000	2,200	2,400	2,600	2,800	1,500	1,650.00	1,800	1,950.00	2,100
Second Lieutenant	1,700	1,870	2,040	2,210	2,380	1,275	1,402.50	1,530	1,657.44	1,785

Chaplains have the rank and pay of major, captain, and first lieutenant, respectively.

Maximum increase of pay, 40 per cent. in all.

(b) The maximum pay of a colonel is $5,000, of a lieutenant colonel $4,500, and of a major, $4,000.

The pay of non-commissioned officers is from $21 to $99 a month, of privates $15 to $25 a month.

Service outside the United States, except in Porto Rico and Hawaii, 10 per cent. additional for officers and 20 per cent. for enlisted men.

THE ARMED STRENGTH OF THE WORLD.

Countries.	Available for active service.	Reserves.*	Total war strength.	Available for duty. Unorg.†	Countries.	Available for active service.	Reserves.*	Total war strength.	Available for duty. Unorg.†
Germany	617,000	1,223,000	1,840,000	1,900,000	Switzerland	139,000*h*	96,000*h*	235,000	....
France	529,000*a*	761,000	1,200,000	1,000,000	Turkey	350,000	450,000	800,000	800,000
Russia	1,100,000	700,000	1,800,000	5,200,000	Greece	25,000*i*	25,000	50,000	100,000
Austria-Hungary	409,000	381,000	790,000	1,600,000	China	60,000	500,000	560,000	....
Italy	240,000	390,000	630,000	1,200,000	Mexico	26,600	82,000	108,600	700,000
Great Britain	250,000*b*	489,000*c*	739,000	1,700,000	Brazil	25,000	20,000	45,000	1,000,000
Japan	225,000	375,000	600,000	2,000,000	Argentina	19,000	120,000	139,000	300,000
Spain	100,000	200,000	300,000	780,000	Chile	5,000	75,000	80,000	175,000
Belgium	45,000	80,000	125,000	350,000	Peru	4,000	10,000	14,000	....
Netherlands	40,000*d*	100,000*e*	140,000	200,000	Venezuela	9,600	....	9,600	125,000
Denmark	14,000	36,000	40,000	125,000	Bolivia	3,000	18,000	21,000	100,000
Sweden	62,000	284,000	346,000	....	Colombia	5,000	....	5,000	200,000
Norway	30,000	95,000	125,000	....	Guatemala	7,000	50,000	57,000	50,000
Portugal	30,000*f*	125,000	155,000	200,000	Ecuador	4,300	....	4,300	90,000
Bulgaria *g*	52,500*c*	322,500	375,000	60,000	Salvador	3,000	18,000	21,000	40,000
Servia	35,000	140,000	175,000	....	Nicaragua	4,000	36,000	40,000	....
Roumania	135,000	35,000	170,000	175,000	Uruguay	5,200	30,000	35,200	30,000
					Haiti	6,800	....	6,800	40,000

*Except as to some of the principal and a few of the minor states, it is doubtful whether the numbers given of the reserves or auxiliary forces could be mobilized and made effective within a considerable period of time. †These figures are based on estimated male population of military age, deducting "total war strength." In some states, all men of military age are enrolled in national militia and are partly trained. *a*Exclusive of Colonial troops. *b*Including regular forces at home, in the Colonies, and 76,000 men in India and excluding the native Indian army of 160,000. *c*Includes "army reserve," organized militia, and volunteers. *d*Exclusive of Colonial army of 36,000. *e*Estimated. *f*Exclusive of troops in Colonies. *g*Nominally subject to Turkey. *h*Trained National militia. *i*Army is being reorganized.

TOTAL NUMBER OF IMMIGRANTS IN SPECIFIED YEARS, 1870 TO 1907:

By Sex and Age; also Immigrants Debarred and Returned within One Year after Arrival, and Illiterates over 14 and 16 Years of Age.

[In part from reports of the Commissioner General of Immigration, Department of Commerce and Labor.]

Year ended June 30—	Total number of immigrants.	Immigrants, by sex.		Immigrants, by age.			Debarred from landing.	Returned within one year after landing.	Returned within three years after landing.	Illiteracy, 14* years and over.	
		Male.	Female.	Under 15 years.	15 to 40 years.	40 years and over.				Can read but cannot write.	Can neither read nor write.
1870	387,203	235,612	151,591	89,129	250,965	47,109	.....	.....	.....	.....	.....
1875	227,498	139,950	87,548	44,254	154,621	28,623	.....	.....	.....	.....	.....
1880	457 257	287,623	169,634	87,154	327,662	42,441	.....	.....	.....	.....	.....
1885	395,346	226,382	168,964	92,880	257,551	44,915	.....	.....	.....	.....	.....
1890	455,302	281,853	173,449	86,404	315,054	53,844	.....	.....	.....	.....	.....
1891	560,319	354,059	206,260	95,879	405,843	58,597	.....	.....	.....	.....	.....
1892	623,084	385,781	237,303	89,167	491,839	42,078	2,164	637	.....	.....	.....
1893	502,917	315,845	187,072	57,392	419,701	25,824	1,053	577	.....	59,582	61.038
1894	314,467	186,247	128,220	41,755	258,162	14,550	2,389	417	.....	16,784	41,614
1895	279,948	159,924	120,024	33,289	233,543	13,116	2,394	189	.....	2,612	42,302
1896	343,267	212,466	130,801	52,741	254,519	36,007	2,799	238	.....	5,066	78,130
1897	230,832	135,107	96,725	38,627	165,181	27,024	1,617	263	.....	1,572	43,008
1898	229,299	135,775	93,524	38,267	164,905	26,127	3,030	199	.....	1,416	43,057
1899	311,715	195,277	116,438	†43,983	‡248,187	‖19,545	3,798	263	.....	1,022	60,446
1900	448,572	304,148	144,424	†54,624	‡370,382	‖23,566	4,246	356	.....	2,097	93,576
1901	487,918	331,055	156,863	†62,562	‡396,516	‖28,840	3,516	363	.....	3,058	117,587
1902	648,743	466,369	182,374	†74,063	‡539,254	‖35,426	4,974	465	.....	2,917	162,188
1903	857,046	613,146	243,900	†102,431	‡714,053	‖40,562	8,769	547	.....	3,341	185,667
1904	812,870	549,100	263,770	†109,150	‡657,155	‖46,565	7,994	300	479	3,953	168,903
1905	1,026,499	724,914	301,585	†114,668	‡855,419	‖56,412	11,879	98	747	8,209	230,882
1906	1,100,735	764,463	336,272	†136,273	‡913,955	‖50,507	12,371	61	615	4,755	265,068
1907	1,285,349	929,976	355,373	†138,344	‡1,100,771	‖46,234	13,064	70	925	5,829	337,573

* For the years prior to 1895 the figures are for persons over 16 years. † Under 14 years. ‡ 14 to 45 years. ‖ 45 years and over.

OCCUPATION OF IMMIGRANTS.—In 1907 the reported occupations were:—

Farm laborers	323,854
Laborers	291,141
Servants	121,587
Tailors	30,644
Carpenters	20,656
Merchants	14,470
Shoemakers	13,059
Clerks	11,980
Miners	11,452
Sailors	7,270
Engineers	2,433
Teachers	1,673
Musicians	1,114
Actors	822
No occupation	304,709

Of the laborers 190,315 were skilled, and the unskilled amounted to 777,725.

PORT OF LANDING.—During the year ending June 30, 1907, of the total number of immigrants to the United States:—

1,004,756	landed in New York
70,164	landed at Boston.
69,910	landed at Baltimore.
30,501	landed at Philadelphia.
48,967	landed at Canadian ports.
3,539	landed at San Francisco.
60,512	landed at other ports.

REFUSED ADMISSION.—In 1907, admission to the United States was refused to 13,064 persons for the following reasons:—

Paupers and those likely to become a public charge	6,866
Afflicted with infectious or loathsome disease	3,822
Contract laborers	1,434
Convicts	341
Insane persons	189
Idiots	29
Immoral persons	19

ARRIVALS OF IMMIGRANTS, YEARS ENDED JUNE 30, 1893 to 1907: By Nationalities.

[In part from reports of the Commissioner General of Immigration, Department of Commerce and Labor.]

Country of Last Permanent Residence.	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
Austria-Hungary															
Bohemia	5,548	2,536	1,607	2,709	1,954	2,478									
Hungary	23,501	14,397	15,206	30,898	15,025	16,659	62,491	114,847	113,390	171,989	206,011	177,156	275,693	265,138	338,452
Other Austria (except Poland) *a*	30,584	20,572	16,649	31,496	16,052	20,660									
Total Austria-Hungary	59,633	37,505	33,462	65,103	33,031	39,797	62,491	114,847	113,390	171,989	206,011	177,156	275,693	265,138	338,452
Belgium	4,091	2,028	1,590	1,261	760	695	1,101	1,196	1,579	2,577	3,450	3,976	5,302	5,099	6,396
Denmark	8,779	5,581	4,244	3,167	2,085	1,946	2,690	2,926	3,655	5,660	7,158	8,525	8,970	7,741	7,243
France	5,358	3,662	3,702	2,463	2,107	1,990	1,694	1,739	3,150	3,117	5,578	9,406	10,168	9,386	9,731
Germany	96,361	59,386	36,351	31,885	22,533	17,111	17,476	18,507	21,651	28,304	40,086	46,380	40,574	37,564	37,807
Gibraltar	5	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greece	1,131	1,351	605	2,175	571	2,339	2,333	3,771	5,910	8,104	14,090	11,343	10,515	19,489	36,580
Italy, continental	71,145	43,967	36,961	68,060	59,431	58,613	77,419	100,135	135,996	178,375	230,622	193,296	221,479	273,120	285,731
Sicily and Sardinia	1,771														
Malta	5	13	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Netherlands	8,114	2,884	2,348	1,583	890	767	1,029	1,735	2,349	2,284	3,998	4,916	4,954	4,946	6,637
Norway	16,079	8,867	7,373	8,855	5,842	4,938	6,705	9,575	12,248	17,484	24,461	23,808	25,064	21,730	22,133
Poland	13,664	1,552	1,020	691	4,165	4,726	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portugal	3,959	2,071	589	2,766	1,874	1,717	2,054	4,234	4,165	5,307	9,317	6,715	5,028	8,517	9,608
Roumania	770	806	507	785	791	900	1,606	6,459	7,155	7,196	9,310	7,087	4,437	4,476	4,384
Russia (except Poland) *b*	37,177	35,694	32,053	45,137	22,750	27,221	60,982	90,787	85,257	107,347	136,093	145,141	184,897	215,665	258,943
Finland	6,651	2,400	2,437	6,308	3,066	2,607									
Spain	987	820	889	351	448	577	385	355	502	975	2,080	3,996	2,600	1,921	5,784
Sweden	38,077	18,608	15,683	21,177	13,162	12,398	12,797	18,650	23,331	30,894	46,028	27,763	26,591	23,310	20,589
Switzerland	5,295	3,417	2,624	2,304	1,566	1,246	1,326	1,152	2,201	2,344	3,983	5,023	4,269	3,846	3,748
Turkey in Europe *c*	555	278	215	169	152	176	132	393	1,044	1,038	3,290	5,669	6,585	14,176	20,767
United Kingdom															
England	46,501	29,579	31,948	19,492	9,974	9,877	10,402	9,951	12,214	13,575	26,219	38,626	64,709	49,491	56,637
Ireland	49,233	33,904	47,972	40,262	28,421	25,128	31,673	35,730	30,561	29,138	35,310	36,142	52,945	34,995	34,530
Scotland	12,155	7,254	5,888	3,483	1,883	1,797	1,724	1,792	2,070	2,560	6,143	11,092	16,977	15,866	19,740
Wales	1,197	1,134	1,916	1,581	870	1,219	1,324	764	701	763	1,275	1,730	2,503	1,841	2,660
Total United Kingdom	109,086	71,871	87,724	64,818	41,148	38,021	45,123	48,237	45,546	46,036	68,947	87,590	137,134	102,193	113,567
Azores	114	380	827	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greenland, Iceland, and the Faroe Islands	25	9	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Europe, not specified	.....	.....	.....	9	25	1	6	2	18	37	5	143	13	48	11,466
Total Europe	488,832	303,150	271,223	329,067	216,397	217,786	297,349	424,700	469,237	619,068	814,507	767,933	974,273	1,018,365	1,199,566
British North America	(*d*)	(*d*)	(*d*)	273	290	350	1,322	896	540	636	1,058	2,837	2,168	5,063	19,918
Mexico	(*d*)	(*d*)	(*d*)	150	91	107	161	237	347	709	528	1,009	2,637	1,997	1,406
Central America	241	66	69	17	6	7	159	42	150	305	678	714	1,195	1,140	970
Bermuda	18	20	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Indies and Miquelon	3,159	2,001	3,444	6,828	4,101	2,124	2,585	4,656	3,176	4,711	8,170	10,193	16,641	13,656	16,689
South America	610	431	338	35	49	39	89	124	203	337	589	1,667	2,576	2,757	2,779
Total America	*c* 4,028	*c* 2,518	*c* 3,889	7,303	4,537	2,627	4,316	5,455	4,416	6,698	11,023	16,420	25,217	24,613	41,762
China	2,828	4,018	974	1,441	3,363	2,071	1,660	1,247	2,459	1,649	2,209	4,309	2,166	1,544	961
Japan	1,648	1,739	489	1,110	1,526	2,230	2,844	12,635	5,269	14,270	19,968	14,264	10,331	13,835	30,226
Other Asia	2,523	1,565	2,660	4,213	4,773	4,336	4,468	4,064	5,865	6,352	7,789	7,613	11,428	6,921	9,337
Total Asia	6,999	7,322	4,123	6,764	9,662	8,637	8,972	17,946	13,593	22,271	29,966	26,186	23,925	22,300	40,524
Total Oceania	2,665	1,232	522	112	199	201	.....	.....	498	566	1,349	1,555	2,166	1,733	1,989
Total Africa	327	208	167	21	37	48	51	30	173	37	176	686	757	712	1,486
All other countries	66	87	24	.....	.....	.....	1,027	441	1	103	25	90	161	33,012	22
Total immigrants	502,917	314,467	279,948	343,267	230,832	229,299	311,715	448,572	487,918	648,743	857,046	812,870	1,026,499	1,100,735	1,285,349

a Austrian Poland included after 1898. *b* Russian Poland included after 1898. *c* Includes Servia, Bulgaria, and Montenegro. *d* Immigrants from British North America and Mexico not reported.

Indian Affairs.—Indians are not, strictly speaking, a part of the body politic in the United States. They are "wards" of the nation. The "five civilized tribes" are the Cherokees, Chickasaws, Choctaws, Creeks, and Seminoles. Each nation is governed by its own executive, legislature, and judiciary. They make laws which do not conflict with the constitution and laws of the United States. The nation as a whole holds title to land occupied by them, and it cannot be disposed of without consent of the Federal Government. An Indian born within the jurisdiction of a tribe must be naturalized to become an American citizen; but by the act of 1887, Indians living on lands allotted to them in severalty need not be naturalized. By this provision 10,122 Indians immediately became citizens by the passage of the act. From 1,000 to 2,000 Indians take allotments annually and this signifies their intention. There are over 20,000 Indian voters in the United States. Indian affairs are controlled by an Indian commissioner with eight inspectors and a large force of assistants, attached as a bureau to the Department of the Interior since 1849. The Government expends about $15,000,000 annually upon the Indians. The policy of the Government is to incorporate the Indians individually into the body politic as citizens, by which the reservations will end, and the paternal care of the Government will cease. From the table it will be seen that the area of the greatest reservations is in Arizona; and the greatest Indian population is in Indian Territory (now Oklahoma).

The important main stocks of American Indians, without following out the lines of the minor stocks, are:—

1. **Athapascan,** or **Athabascan,** including the Kuchins, Chippewyans, Apaches, and Navajos.

2. **Algonquian,** including the Delawares, Abenakis, Chippewas or Ojibwas, Crees, Shawnees, Sacs and Foxes, Blackfeet, Cheyennes, and Arapahoes.

3. **Iroquoian,** including the Hurons, Eries, Mohawks, Tuscaroras, Senecas, Cayugas, Oneidas, Onondagas, and Cherokees.

4. **Siouan,** including the Dakotas, Assiniboins, Omahas, Crows, Iowas, Osages, Catawbas, and Monacans.

5. **Shoshonean,** including the Pawnees, Kiowas, Comanches, Utes, and Hopis or Mokis.

6. **Muskhogean,** including the Creeks, Choctaws, Chickasaws, Seminoles, and Apalachis.

In Central America the most interesting groups of Indians are:—

1. The **Nahuatlan**—(*a*) Aztecs and (*b*) Pipils.

2. The **Huastecan**—(*a*) Mayas, (*b*) Quichés, and (*c*) Pocomans.

In South America the great groups of Indians are: (1) the Warraun, (2) the Arawakan, (3) Caribbean, in Venezuela and Guiana; (4) Gesan or Tapuyans, (5) Guaranian in Brazil and Paraguay; (6) Araucanians, (7) Patagonians or Tehuelches of southern Chile and Argentina; (8) Yahgans or Fuegans of Tierra del Fuego.

Area of Indian Reservations and Indian Population on Reservations.

State and Territory.	1880		1890		1900		1907	
	Area Sq. Miles.	Population.	Area Sq. Miles.	Population.	Area Sq. Miles.	Population.	Area Sq. Miles.	Population.
Arizona	4,832.50	21,361	10,317.50	30,749	23,673.00	40,189	26,532.70	38,852
California	783.00	10,669	772.00	12,108	635.25	11,431	641.12	18,988
Colorado	19,480.00	2,530	1,710.00	1,793	.....	995	755.86	807
Dakota*	57,213.50	27,168	.....	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	575	.....	358
Idaho	4,295.00	4,020	3,552.50	4,251	2,132.00	3,557	1,431.91	4,056
Indian Territory	64,236.00	76,895	40,411.50	68,225	30,489.75	86,265	10,505.47	102,993
Iowa	1.00	355	2.00	399	4.50	385	4.63	345
Kansas	215.00	746	159.50	1,016	44.25	1,211	1.44	1,274
Michigan	104.00	10,141	42.50	7,428	13.00	7,557	5.32	6,708
Minnesota	7,853.00	6,198	3,523.00	6,403	2,447.75	8,952	1,098.65	9,895
Montana	45,870.00	21,650	16,549.00	10,842	14,845.00	10,076	10,938.32	10,459
Nebraska	682.00	4,409	214.00	3,254	116.50	3,854	23.08	3,685
Nevada	1,383.00	6,800	1,490.50	8,375	1,491.00	8,321	992 69	5,367
New Mexico	11,295.00	23,452	15,629.00	10,998	2,605.50	8,480	2,655.44	18,564
New York	135.00	5,139	137.00	5,112	137.00	5,334	137.00	5,419
North Carolina	102.00	2,200	102.00	3,000	153.50	1,436	98.77	1,550
North Dakota	(†)	(†)	9,158.00	7,759	5,784.00	8,276	5,242.78	7,919
Oklahoma	.....	.....	20,770.00	13,176	10,756.25	13,926	4,659.30	14,136
Oregon	6,022.00	5,355	3,242.00	4,507	2,031.50	4,063	1,995.80	3,691
South Dakota	(†)	(†)	18,221.00	19,696	14,049.75	19,212	11,023.30	19,685
Texas	.....	290	.....	290	.....	290	.....	470
Utah	3,186.00	40	6,207.00	2,211	3,186.00	2,115	279.99	1,854
Washington	10,821.00	14,289	6,321.00	9,830	3,646.25	9,827	3,972.44	8,538
Wisconsin	916.00	8,847	800.00	9,152	595.25	10,726	525.54	10,445
Wyoming	2,375.00	2,063	3,660.00	1,658	2,828.00	1,642	148.92	1,701
Miscellaneous	.....	710	.....	1,302	.....	849	.....	713
Total	241,800.00	256,127	162,991.00	243,524	121,665.00	270,544	83,670.47	298,472

*The territory of Dakota was admitted to the Union, Nov. 2, 1880, as two States, viz., North Dakota and South Dakota.

(†) See Dakota.

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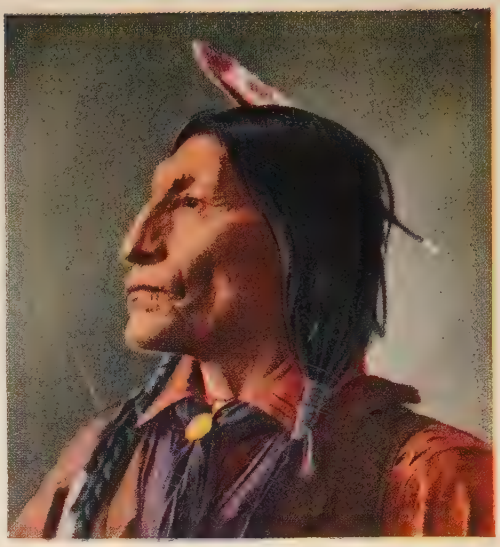
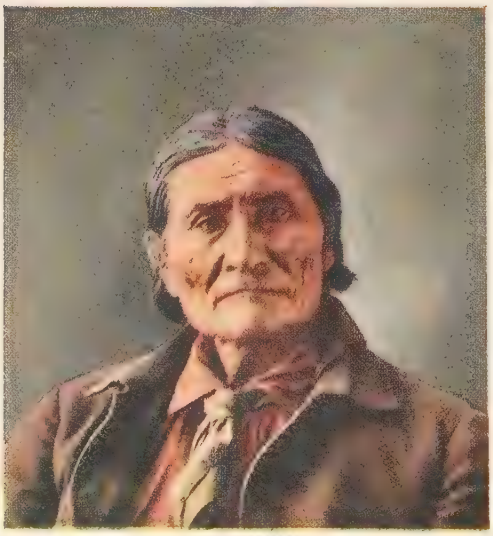
CHIEF JOSEPH



WOLF ROBE

CHIPPEWA INDIAN

HOW LOW HORN BEAR



GERONIMO

RUSHING BEAR ARIKARA

SOME FAMOUS INDIAN CHIEFS.

ATTUCKS, CRISPUS (*c.* 1720-1770). The first person killed in the Boston Massacre, which is considered the opening of the American Revolution. He was an Indian-negro half-blood, living at Framingham, Mass. Attucks was a sailor and is said to have been the leader of the crowd who fired upon the soldiers in front of the old State House. Massachusetts honored his memory by erecting a monument on Boston Common in 1888.

BLACK HAWK (1767-1838). Chief of the Sac Indians (1788-1838). Took part against the Americans in the War of 1812; made and broke treaties with the United States and precipitated the Black Hawk War (1831-1832); defeated by General Dodge near the Wisconsin River (July 21, 1832), and at Bad Axe River by General Atkinson (August 1-2, 1832); Black Hawk surrendered August 27.

BLUE JACKET. A famous Shawnee chief, who is known chiefly as leader of the Indian forces in the battle at Presque Isle, Ohio, with General Wayne, August 20, 1794. Blue Jacket was opposed to peace, but after Wayne defeated the Indians he signed the treaty of 1795 with the General at Greenville, Ohio, and also the treaty of Ft. Industry, Ohio, July 4, 1805.

BRANT, JOSEPH (THAYENDANEGEA) (about 1742-1807). A famous Mohawk chief, who served with the Americans during the War of Independence; fought at Cherry Valley, Minisink, and Oriskany. He was not at the Wyoming Massacre; visited England (1786). Fiske says, "He was perhaps the greatest Indian of whom we have any knowledge."

COLBERT, WILLIAM. Chickasaw chief, termed the warrior of his nation. Aided the Americans in the Revolution, leading the Chickasaw allies against the hostile tribes. Served nine months in the regular infantry during the war of 1812, and then led his warriors against the hostile Creeks.

CORNPLANTER (1732-1836). Chief of the Seneca Indians, a half-breed, the son of John O'Bail, or O'Beal, a trader. Became unpopular because of taking part in the treaties of Ft. Stanwix, 1784, and Ft. Harmon, 1789, by which large grants of land were made to the United States, and by signing the treaties of September 15, 1797, and July 30, 1802. In 1790, he, with Halftown, laid before Gen. Washington at Philadelphia the grievances of his people. Six hundred and forty acres of land within Pennsylvania were granted to him by that state March 16, 1796, "for his many valuable services to the whites." In 1866 a monument to his memory was erected on his reservation by the state of Pennsylvania.

CRAZY HORSE (-1877). A great chief of the Oglala Sioux. Leader with Sitting Bull in Custer's massacre. Later surrendered to General Miles. Being suspected of stirring up another war was arrested in 1877, but escaped from the guard and was shot.

GERONIMO (*c.* 1834-1909). A medicine man and prophet of the Chiricahua Apaches. Native name Goyathlay. On account of depredations committed against frontiersmen the government decided to remove the tribe from their reservation in San Carlos, Arizona. Geronimo fled to Mexico with others, returned and was arrested. In 1882 hostile movements were made against the inhabitants of New Mexico and Arizona, and General Crook had orders to capture the chief and his band. An agreement was made and surrender agreed upon in March, 1886, but Geronimo and his followers fled across to Mexico. General Miles, who was in command, pursued, and the following August they were captured. Three hundred and forty, comprising the entire band with leaders, were sent to Florida as prisoners of war, later to Alabama and finally to Ft. Sill, Oklahoma.

HOLLOW-HORN BEAR (1850-). Brulé Sioux chief. Attacked United States troops in Wyoming and Montana in 1868, and the next year took part in a raid on laborers on the Union Pacific Railroad. Later he became captain of police at Rosebud Agency, South Dakota, and five years afterwards was appointed second lieutenant under Agent Spencer, but ill health compelled him to resign. As an orator of great ability, he was chosen by the Sioux to be their speaker in 1889, when General Crook was sent to Rosebud to make an agreement with the Indians there. Took part in the inauguration of President Roosevelt, March 4, 1905.

JOSEPH (-1904). A great general of the Nez Percés, and their leader in the hostilities of 1877. Joseph and his band did not recognize the treaty of 1863, whereby their ancient home in northeast Oregon was given to the whites, and continued to live there, collisions between Indians and whites steadily increasing. A peaceful settlement by the removal of the Indians to Lapwai reservation in Idaho was nearly effected when outrageous acts of the whites brought on war. The whites lost heavily in several engagements, after which extraordinary generalship was exhibited by Joseph in a retreat of over 1,000 miles, "worthy to be remembered with that of Xenophon's ten thousand."

KEOKUK (*c.* 1780-1848). A Sac leader and diplomat of great ability. Became chief councilor in the Sac assembly, enjoying great popularity among his people until the Black Hawk War, during which he remained so passive that he lost influence both socially and politically. At this time the political union of the Sacs and the Foxes was broken, largely as a result of intrigues by Keokuk, and he, with a band of unpatriotic Sacs obtained protection from the Foxes under their chief Padweshik. In the negotiations following the Black Hawk War, Keokuk aided the government so cleverly that he was made chief of the Sacs, his appointment being received by Sacs and Foxes with ridicule and contempt. In 1845 he removed to Kansas, where his death occurred. His remains were removed to Keokuk, Iowa, in 1883. There they were reinterred in the city park, and the citizens of the town erected a monument over his grave. In the capitol at Washington stands a bronze bust of Keokuk.

LONE WOLF (-1879). Kiowa chief. In 1867 signed the treaty of Medicine Lodge, Kansas, whereby his people first agreed to be placed on a reservation; in 1872 leader of a delegation to Washington. His son was killed by the Texans in 1873, which enraged Lone Wolf, and in the outbreak of 1874 he became the leader of the hostile part of his tribe; surrendered in 1875 and was kept three years at Ft. Marion, Florida.

MASSASOIT (1580-1661). Sachem of the Wampanoags; visited Plymouth (1621), and concluded with Governor Carver a treaty of friendship, which was faithfully adhered to for 54 years, the first diplomatic act recorded in the history of New England.

OSCEO'LA (1804?-1838). Famous Seminole chief; he grew up among the Seminoles and when the whites pushed southward opposed them. In 1835 Osceola's wife, being the daughter of a fugitive slave woman, was claimed by her mother's former owner. Infuriated at this, Osceola resolved vengeance on the whites, and began the Second Seminole War; taken prisoner (1837) and held in captivity at Ft. Moultrie till his death.

PHILIP or METACOMET (? -1676). Famous Indian chief; son of Massasoit; sachem of the Wampanoags; at first firm friend of white settlers, but, realizing that settlement of the country by them meant the destruction of his own people, began what is known as "King Philip's War" in 1774; 13 towns destroyed, 600 inhabitants killed. The Indians were defeated and King Philip was killed at Mount Hope.

PONTIAC (*c.* 1720-1769). A famous Ottawa chief; leader of confederated tribes against the English (1763-1765) though professing loyalty to English king; by concerted action, all but four of the fourteen English posts were captured; peace being declared between England and France, Pontiac also made a treaty; murdered by an Illinois Indian.

RED JACKET (1751-1830). Seneca Indian chief. During the Revolution he fought for the English; helped the United States against Tecumseh (1810). Probably the most eloquent of the Indian race.

SITTING BULL (1837-1890). Famous Sioux chief. Slaughtered whites. On his refusal to settle down on a reservation General Sheridan with his troops in 1876 opened a campaign against him. General Custer carried on Sheridan's work and at Little Big Horn in June of 1876 there was a slaughter of the troops by the Indians. The chief escaped to Canada but returned in 1881 with a general pardon from General Miles. In 1888, by the advice of Sitting Bull, the Sioux refused to sell their lands. In 1890 he was the leader of the impending uprising among the Indians during the "Messiah" affair. He was killed in North Dakota in 1890 while an attempt was being made to save him from arrest.

TECUMSEH (1775-1813). Celebrated chief of the Shawnee Indians; in the battle of Tippecanoe (1811) his followers were defeated by Harrison. The importance of his aid to the British in the war of 1812 cannot be overestimated.

UNCAS (-about 1683). A famous sachem of the Mohegan Indians of Connecticut. As a Pequot chief he revolted (1635) and with a number of Indians formed the Mohegans. He fought against the Indians and with the English in the Pequot War (1637) and was given a grant of the Pequot lands. He defeated the Narragansett chief, Miantonomoh, in 1643 and later caused his death.

THE BRITISH EMPIRE.

The United Kingdom.—In England the term "Constitution" has not quite the same meaning as in the United States. In this country it denotes a written instrument, which constitutes the supreme law of the land. In England, the Constitution implies the whole political organism, with its laws, usages, and unwritten traditions. A republican constitution is "framed" artificially by a convention; the English Constitution is the natural growth of generations, and is broad-based on the principles of personal liberty and equality. Being for the most part unwritten, its growth and adaptability are unimpeded; and it has developed steadily and securely along the lines of progress, keeping pace with the march of civilization. This flexibility, far from endangering the stability of the government, is the mainstay of its strength, due largely to the conservatism of the English mind. The Constitution forms a part of the English Common Law; yet, unlike the United States, there is no positive law for the establishment of the national representation. The Cabinet, though the actual organ of executive government, is a body unknown to the law, and has never been recognized by any statutes, any rule of Common Law, or any resolution of either House of Parliament. In form, the government is a constitutional or limited monarchy; but in reality, it is a government by the people, a true democracy ruled by a king.

The supreme political authority in the United Kingdom is vested in the Sovereign and Parliament. There is a maxim that "the King can do no wrong"; which means that as every official act is necessarily done in accordance with the law, and as no unlawful act can be recognized as an act of the Crown, whatever the King does officially is done lawfully. "*Nihil enim aliud potest rex nisi id solum quod de jure potest.*" The Legislative is vested in Parliament, but the latter possesses no independent authority, being merely the council of the Crown. Its functions are deliberative, and the control which it exercises over every department of the Executive is indirect. Every act of state remains the act of the King, who by his powers of prorogation and dissolution has the means of checking rash or unwise legislation. In practice the executive authority rests with the Cabinet—a committee of ministers nominated by the Crown on the recommendation of the Prime Minister, but whose power depends upon the possession of a majority in the Commons. The Cabinet thus provides an additional check in the modern system of Parliamentary Government. The ministers are the natural leaders of both Houses. The chief of the Cabinet and the ministry is the Prime Minister or Premier, who exercises important functions and is the chief adviser of the Crown. He is personally appointed by the Sovereign, and is the medium between the Cabinet and the Crown. His resignation or death dissolves the Cabinet. His colleagues are of his own selection, though subject to Royal approval. In the same manner, he fills vacancies in the ranks of deans, bishops, and archbishops, and on his recommendation titles and honors are conferred. "Nowhere in the wide world," says Gladstone, "does so great a substance cast so small a shadow; nowhere is there a man who has so much power, with so little to show for it in the way of formal title or prerogative." Like the Cabinet, the Premier is unknown to the Common Law. His office has no legal existence, but his actual official position is usually that of First Lord of the Treasury. The Premier is the leader of the particular House of which he is a member. The following offices invariably entitle the holder to Cabinet rank: First Lord of the Treasury, Lord Chancellor, Lord President of the Council, the Secretaries of State for the Home Department, Foreign Affairs, the Colonies, for War, and for India, Chancellor of the Exchequer, and First Lord of the Admiralty. The offices which may or may not carry with them a seat in the Cabinet include those of Lord Privy Seal, Chancellor of the Duchy of Lancaster, Postmaster General, First Commissioner of Works, President of the Board of Trade, President of the Board of Agriculture, President of the Local Government Board, Lord Lieutenant of Ireland, Lord Chancellor of Ireland, Chief Secretary for Ireland, Secretary for Scotland. Members of the Cabinet are necessarily Privy Councilors, and their deliberations are confidential. It is the duty of ministers to prepare for Parliament all business connected with the administration, to furnish a suggested budget for the current year, to advise specific improvements in the laws, and to criticise measures brought forward by non-official members. The ministerial control is, however, merely persuasive and advisory, and does not in any way interfere with any member's freedom of action. Every member of Parliament has the right to bring forward whatever proposal he thinks fit, without asking leave of the Crown or of any committee. There are no references to Standing Committees as in the Congress of the United States. A ministry remains in power so long as it holds the confidence of the Commons. It usually resigns when it is defeated upon some question of supreme importance. In such a case the Premier either resigns, or asks leave to appeal to the country, and in the latter course being determined upon a general election ensues.

The Three Estates.—Parliament consists of the Sovereign and the Three Estates of the Realm, viz., the Lords Spiritual, the Lords Temporal, and the Commons; the Lords Spiritual and Temporal together forming the House of Lords. Parliament, unless dissolved by the Crown, exists for seven years. It is one of the curiosities of Parliament that the French language is still used in proclaiming the Royal assent to any bill. When a public measure is approved, the Clerk of the Parliaments (the chief officer of the House of Peers) says, "*Le roy* (or, *la reyne*) *le veult.*" In the case of a private bill he says, "*Soit fait comme il est desire.*" Should the bill pertain to subsidies, the formula is, "*Le roy* (or, *la reyne*) *remercie ses bons sujets, accepte leur benevolence, et ainsi le veult.*" In case of the Crown giving a refusal, the official then says, "*Le roy* (or, *la reyne*) *s'avisera.*" This power of rejection was last exercised in 1707 by Queen Anne.

The House of Lords is composed of (1) Spiritual Peers (2 archbishops and 24 bishops); (2) Temporal Peers by hereditary right, or by creation; (3) representative peers of Scotland

and Ireland; (4) Lords of Appeal (of whom there may not be more than four). By the Act of Union between England and Scotland, the Scottish peers send 16 representatives to the Lords, who sit till Parliament is dissolved. The Irish peers elect 28 representatives for life. The number of Peers on the "Roll" in 1908 was 615. The House of Lords has both legislative and judicial authority, and is the highest appellate court of the realm. The Lord High Chancellor is by prescription Speaker of the House of Lords, and is the chief legal adviser of the Crown. The office may not be held by a Roman Catholic.

The House of Commons is composed of representatives from county, borough, and university constituencies in the United Kingdom. The word "commons" meant originally all those who enjoyed common rights, and were subject to common duties. The House of Commons thus means the House, not of the common people, but of the communities. Any male of full age, with certain exceptions, may be elected to the House of Commons. The following are disqualified: English and Scotch peers (though Irish peers, with the exception of the 28 representatives in the House of Lords, may be elected for any constituency in Great Britain); all English, Scotch, and Irish judges, clergymen of the established church of either England or Scotland; Roman Catholic priests; unnaturalized aliens; government contractors; imbeciles; persons convicted of certain offenses; and sheriffs and returning officers within the constituencies for which they act. No property qualification is needed, and no member receives any payment or allowance. Every elector must be a male over 21, and must be registered in the electoral lists. Property qualifications are confined to counties, and to boroughs having county privileges. In England these are: (1) Freehold of the annual value of 40s.; (2) lands in life tenure of the annual value of £5; (3) Leasehold of at least 60 years of the annual value of £5 or upwards, or of at least 20 years of the annual value of £50. In Scotland and Ireland there are similar though not identical qualifications. In counties throughout the United Kingdom, occupation as owner or tenant of any land or tenement of a yearly value of not less than £10 gives a qualification; but in English boroughs a 6 months' residence is required, and in Scotch boroughs 12 months'. Every inhabitant occupier who has for 12 months occupied a rated dwelling house, and every lodger who has inhabited the same lodgings for 12 months, provided the lodgings if let unfurnished are of a yearly value of £10, may have a vote. Unnaturalized aliens, and men who, within twelve months, have received parochial assistance other than medical relief, are disqualified. Elections for members of Parliament are by secret ballot. Practically one sixth of the population are electors. The last general election was in January, 1906, when a Liberal Government was returned. The members of the House of Commons in 1908 numbered 670. The business of the Commons is conducted in public, on the principle that what directly concerns all should be heard by all. A striking feature of the procedure is the power vested in the Speaker, who ranks as first Commoner, and is responsible for order in the House. The Speaker takes no part in debate, and never votes unless it is necessary to give a casting vote. The House of Commons holds the exclusive and historic right to initiate all Money Bills. No member of the Commons can resign his seat, but by accepting the stewardship of the "Chiltern Hundreds" this can be effected. Under a statute of Anne any member of the House of Commons who accepts a remunerative office thereby forfeits his seat. This Act is now skillfully applied to meet the convenience of unwilling members. As soon as the vacancy is produced, the "stewardship" is immediately resigned that it may be at the disposal of any other member.

The bicameral system, and the *Lex et Consuetudo Parliamenti*—the code of rules governing parliamentary procedure—are peculiar to the Anglo-Saxon race, and have been copied by the legislatures of many other countries. The merit of the bicameral system lies in the mutual restraint exercised by the two Houses, as well as in the fact that this dual division of power is an essential guarantee for freedom.

Dominions Beyond the Seas.—The outlying dominions of Great Britain consist of her Colonies, Dependencies, and Protectorates (a complete list of which will be found elsewhere). The colonies fall naturally into three divisions:—

(1) *Crown Colonies,* ruled by the Imperial Government; e. g., Hongkong.
(2) *Representative Governments,* in which the legislature is partly elective and partly controlled by the Governor; e. g., Jamaica.
(3) *Responsible Governments,* possessing a separate Constitution; e. g., Canada and Australia.

Throughout the British colonial dependencies the power of the Crown is exercised by the Secretary of State for the Colonies, who submits the names of Governors for the Royal approval, and who deals with all enactments of colonial legislatures. The Colonial Office confines its direct executive authority to Crown Colonies and Protectorates; and in regard to the self-governing colonies is the channel through which pass all communications dealing with Imperial matters. The colonies possessing responsible governments are represented in London by High Commissioners or Agents General; and the Crown Colonies by Crown Agents, who act as their commercial and financial agents.

I. Crown Colonies.—Taking Hongkong as an illustration of a Crown Colony, it is administered by a Governor, with Executive and Legislative councils. The Executive Council consists of the Colonial Secretary, the Attorney General, the general officer commanding the troops, the Treasurer, the principal civil medical officer, the Director of Public Works, and two unofficial members. The Legislative Council is composed of seven official and six unofficial members, four of whom are nominated by the Governor, one by the justices of the peace, and one by the Chamber of Commerce.

II. Representative Governments.—As a type of a partially autonomous colony we may instance Jamaica, where the Crown merely reserves the right of veto on the local legislation,

and appoints the chief public officials. A representative council was established in Jamaica as early as 1661 (six years after the taking of the island); but this was abolished in 1866, and in 1884 a partially elective assembly was instituted. The government now consists of a Governor, a Legislative Assembly of 29 members (5 official, 10 appointed by the Crown, and 14 elected), and a consultative Privy Council. In the case of elected members the term of service is limited to five years. All financial measures must be sanctioned by the Governor before they are submitted to the consideration of the Legislature. Boards are elected in each of the 15 parishes for the administration of local affairs.

III. Responsible Governments.—The Common Law is an Englishman's birthright, and the principles by which he is governed are the same throughout the British dominions. These principles, however, necessarily differ in their local application. Just as every town in the United Kingdom makes its own by-laws, though conforming to the general law of the realm, so by an extension of this idea does each colony determine its own laws for its own internal needs, whilst in other respects maintaining its allegiance to the home government. Colonists are thus subject to two kinds of law; one Imperial and personal, the other local and territorial. The British constitution is the parent of all the colonial governments, and as these young institutions grow to manhood the inherited features become more pronounced. Each colony has its Governor, who takes the place of the King. In the Dominion of Canada and the Commonwealth of Australia (the two examples of responsible government which we are giving), the local representative of the Imperial Government is called the Governor General. His position is a dual one. First, he must safeguard Imperial interests; and, second, he must discharge his duties as a local constitutional ruler—as agent of the Crown in the domestic government of the colony. (1) He is a constituent part of the Legislature, and at his discretion gives his assent or veto to any bill which has passed both Houses. In practice, however, the Governor General does not veto a bill, but reserves any to which he deems it unwise or improper to assent. His consent may be overridden by the home government, Canadian bills within two years, and Australian within one. In both colonies no vote, resolution, or bill appropriating public moneys may be passed unless first recommended by him. The reason is that the Executive, being responsible for the finances of the colony, must have the chief voice in the national expenditure. (2) The Governor General is head of the Executive, and as such the majority of his functions are exercised. In both capacities he acts mostly on the advice of ministers; in Canada he has the King's Privy Council, in Australia the Executive Council. He nominates the members of these councils, but in doing so observes the principles of responsible government, and selects them from the dominant party in the Lower House. In domestic administration, he invariably acts on the advice of the council. His chief power lies in summoning, proroguing, and dissolving Parliament. This constitutes a real check and balance and the knowledge that the Executive has this power effectually chastens the caprice to which all assemblies are prone. In military and naval affairs the Governor General has extensive powers; whilst in connection with the judicial system he exercises important functions. In Canada he has control over provincial legislation and administration, and the appointment and dismissal of the Lieutenant Governor is in his hands. The nomination of the chief permanent officials rests with the Governor General in Council, but in Canada that of the subordinate officers is regulated by a Civil Service Act, which restricts the powers of the political head. Australia, too, has its Civil Service Act, which effectually prevents all jobbery and "graft." This act provides for a non-political method of appointment by a body of Commissioners, who are permanent officers and free from party influence.

In both these great federations the Legislature is composed of the Crown, a Senate, and a Lower House, called in Canada the House of Commons, in Australia the House of Representatives. Of the two federations the Canadian is the more monarchical, the Australian the more democratic. The Canadian constitution is a gift of the home parliament. Authority is largely centralized, and the provinces have a restricted measure of legislative power. The senators, like English peers, are nominees of the Crown, *i.e.*, of the ministry of the day. They represent the provinces in unequal but prescribed proportions, and hold office for life. The Senate is thus only a revising and restraining body, though ostensibly a Council of Provinces; and it suffers from the inherent weakness of such a body, when it chances to clash with the Lower House, which is truly representative. The constitution of the Commonwealth is equally an Act of the Imperial Parliament, but was won only after years of debate and insistence. But the position of the Australian Senate in the body politic is totally different from that of the Canadian Upper House. It is essentially a Council of States, representing the states as states; and its members are directly elected by the people voting as distinct and separate elements. It is as democratic a body as is conceivable and its members are largely drawn from the laboring classes. In Australia, no member of either House is permitted to take, or agree to take, any fee for services rendered to the Commonwealth, or in the Parliament to any person or state. This clause virtually debars professional men such as barristers from entering Parliament, and results in the inordinate representation of labor. Members of both Houses in both Federations are paid; in Australia each member receiving £400 a year, and in Canada a sessional allowance of $2,500 and an additional grant for traveling expenses. The authority of the Federal Parliament is more restricted in Australia than in the Dominion; for the constituent states have each retained almost the same powers they had previous to the Federation. The Canadian provinces on the other hand relegated most of their legislative rights to the Federal Parliament. But whereas the Dominion stands solid as a nation, the Commonwealth is still but a coterie of states torn by inter-provincial jealousy and suspicion.

CANADA.

The Senate is composed of 87 members, 24 from Ontario, 24 from Quebec, 10 from Nova Scotia, 10 from New Brunswick, 4 from Manitoba, 3 from British Columbia, 4 from Prince Edward Island, 4 from Alberta, and 4 from Saskatchewan. Senators must be 30 years of age, natural born or naturalized, and possessed of real or personal property of the value of $4,000. They must also reside in the province they represent, except in the case of Quebec, where a real property qualification within the province is sufficient. No senator can be a government contractor for any public works. The House of Commons consists of 214 members elected for five years on a very liberal suffrage, 86 from Ontario, 65 from Quebec, 18 from Nova Scotia, 13 from New Brunswick, 7 from British Columbia, 4 from Prince Edward Island, 10 from Manitoba, 4 from Alberta, 6 from Saskatchewan, and 1 from the Yukon Territory. The basis of such adjustment is that Quebec shall always have 65, and the other provinces a proportionate number according to their population at each decennial census. Election is by ballot, the franchise being regulated by the Provincial Legislatures. The Governor General receives £10,000 yearly. The Prime Minister has a salary of $12,000 a year; the Cabinet Ministers and the Leader of the Opposition $7,000 each. The Speaker of the House of Commons receives $4,000 per annum, and each member an allowance of $2,500 for the session with a reduction of $15 a day for the days the member is absent. The body of ministers is officially known as the "King's Privy Council of Canada." Ottawa is the Dominion capital.

Dominion Executive Officers.—

Governor General.
Premier and President of Privy Council.
Minister of Public Works.
Minister of Customs.
Minister of Militia and Defense.
Minister of Agriculture.
Minister of Finance.
Minister of Justice.
Minister of Marine and Fisheries.
Minister of the Interior.
Minister of Railways and Canals.
Minister of Inland Revenue.
Secretary of State.
Postmaster General.
Minister of Trade and Commerce.
Minister without Portfolio.

Rulers since 1867.—

Lord Monck, Governor General. 1867-1868.
Lord Lisgar, Governor General. 1868-1872.
Earl Dufferin, Governor General. 1872-1878.
Marquis of Lorne, Governor General. 1878-1883.
Marquis of Lansdowne, Governor General. 1883-1888.
Baron Stanley, Governor General. 1888-1893.
Earl of Aberdeen Governor General. 1893-1898.
Earl of Minto, Governor General. 1898-1904.
Earl Grey, Governor General. 1904-

PROVINCIAL GOVERNMENT.—In each of the nine provinces a Lieutenant Governor represents the executive authority. They each have power to deal with their own local affairs and their revenues, so long as they do not conflict with the administration. The respective governments are as follows:—

Quebec. A responsible Ministry; a Legislative Council of 24 members appointed for life by the Lieutenant Governor; and a Legislative Assembly of 74 members.

Ontario. Responsible Ministry and one Chamber—a Legislative Assembly of 106 members elected by manhood suffrage for four years.

Nova Scotia. Responsible Ministry; Legislative Council of 21 members, and House of Assembly of 38.

New Brunswick. Responsible Ministry and a Legislative Assembly of 46 members popularly elected.

British Columbia. Responsible Ministry and a Legislative Assembly of 38 members elected by manhood suffrage.

Prince Edward Island. Responsible Ministry and House of Assembly of 30 elected by manhood suffrage.

Manitoba. Responsible Ministry and a Legislative Assembly of 40 elected by districts for four years.

Alberta. Responsible Ministry and Legislative Assembly of 25 members.

Saskatchewan. Responsible Ministry and Legislative Assembly of 41 members.

Northwest Territories. Commissioner and Council of four.

Yukon Territory. Commissioner and an Executive Council of 10.

The territory not included in any province—*e. g.*, the Northwest Territory and the Arctic Islands—is administered by the Minister of the Interior. The limits of federal and provincial jurisdiction are fixed by the British North America Act, 1867.

Area and Population.—The population of Canada in the year 1801 was estimated at 240,000; it has increased as follows:—

Year.	Population.	Year.	Population.
1825	581,920	1881	4,324,810
1851	1,842,265	1891	4,833,239
1861	3,090,561	1901	5,371,315
1871	3,635,024		

The following are the areas of the provinces, in 1901, with the population at the census of 1901, redistribution being made in the case of the Northwest Territories created provinces by Federal Acts of 1905:—

Province.	Land Area sq. miles.	Water Area* sq. miles.	Total Area sq. miles.	Population, 1901.	Pop. per sq. mile (Land Area), 1901.	Pop. Increase %, 1891-1901.
Prince Edward Island*	2,184	.....	2,184	103,259	47.30	5.34
Nova Scotia*	21,068	360	21,428	459,574	21.80	2.04
New Brunswick*	27,911	74	27,985	331,120	11.90	3.06
Quebec*	341,756	10,117	351,873	1,648,898	4.82	10.77
Ontario*	220,508	40,354	260,862	2,182,947	9.90	3.25
Manitoba	64,327	9,405	73,732	255,211	3.96	67.16
British Columbia*	310,191	2,439	357,600	178,657	0.49	81.98
Alberta†	251,180	2,360	253,540	72,841		
Saskatchewan†	242,332	8,318	250,650	91,460		
Keewatin	500,191	16,380	516,571	9,800		
Yukon	196,327	649	196,976	27,219	0.11	113.8
Mackenzie	532,634	29,548	562,182	5,216		
Ungava	349,109	5,852	354,961	5,113		
Franklin	500,000	.....	500,000			
Totals	3,619,818	125,756	3,790,544	5,371,315	1.48	11.14

*The water areas here assigned to Prince Edward Island, Nova Scotia, New Brunswick, and British Columbia are exclusive of the territorial seas, that to Quebec is exclusive of the Gulf of St. Lawrence, and that to Ontario is exclusive of the Canadian portions of the great lakes and of the St. Lawrence.

†In 1906 Alberta had 185,000, Saskatchewan 257,000, and Manitoba, 365,000 inhabitants.

AUSTRALIA.

The constitution dates from the Commonwealth of Australia Act, 1900, and provides for the inclusion of other colonies and British possessions. The Senate is composed of 36 members, 6 from each original state, chosen directly by the people of each state voting as one electoral unit (though Queensland has power to divide the state into divisions). Senators hold office for six years, provided there be no dissolution of the House. Immediately after a dissolution, half the number have only a three years' tenure. Three senators are elected for each state every three years. The two Houses have equal powers, except that the Senate cannot originate or amend bills relating to revenue or taxation. The House of Representatives consists of 75 members elected by popular vote for three years. The number of members are to bear, as far as practicable, the constant ratio of two to one to the Senate. New South Wales has 27 members, Victoria 22, Queensland 9, South Australia 7, Western Australia 5, and Tasmania 5. To be eligible a member of either House must be 21 years of age, an actual or qualified elector, natural born or at least five years naturalized, and a resident of three years within the Commonwealth. The Federal Parliament has powers to make laws for taxation, trade, bounties, loans, postal service, naval and military matters, currency, banking, marriage, divorce, old age pensions, immigration and emigration, etc. The State Parliaments, outside these limits, have the same "sovereign" authority as before. State governors are Crown nominees, and they still communicate directly with the British Colonial Office on state business. The Executive Council is composed of 7 ministers, whose combined salaries may not exceed £12,000 a year. The Governor General receives £10,000 per annum. Interstate trade and intercourse are free; and there is a uniform tariff for customs and excise. The Federal Parliament sits at Melbourne, but *Dalgety*, a township 296 miles south of Sydney, on the Snowy River, has been selected as the Federal capital, which, unlike Ottawa, is federal territory in no way controlled by state authority.

STATE AND LOCAL GOVERNMENT.—*New South Wales.* Responsible Ministry and two Houses of Parliament. Legislative Council consists of 61 life members; Legislative Assembly is composed of 90 members, elected for three years. Members receive $1,500 a year, free permits on government railways and tramways and free postage. Women first voted at the general election of 1904, when 174,538 female electors (little over half their number on the register) recorded their votes. For local government there are 190 boroughs and municipal districts, and 134 shires.

Victoria. Responsible Ministry; Legislative Council of 34 elected for six years and Legislative Assembly of 65 members elected for three years by rate-paying qualification or manhood suffrage. Members are paid $1,500 a year, and have free passes over the railways. For local government there are 60 urban and 146 rural municipalities, each with an elective council.

Queensland. Responsible Ministry; Legislative Council of 43 nominated for life by the Crown, and Legislative Assembly of 72 members elected from 61 electoral districts for three years on a basis of manhood suffrage. Members are paid $1,500 a year and traveling expenses. For local government the state is subdivided into 8 cities, 27 towns, and 125 shires, under the management of aldermen and councilors.

South Australia. Responsible Ministry; Legislative Council of 18 elected members, half retiring every three years; and Legislative Assembly of 42 elected triennially by adult suffrage. Members are paid $1,000 a year, with a free railway pass. For local government there are 32 municipal and 140 district councils.

Western Australia. Responsible Ministry; Legislative Council of 30 members elected for six years, and Legislative Assembly of 50 members elected for three years. Members receive $1,000 a year, with free railway pass. For local government there are 44 municipal councils and 91 district road boards.

Tasmania. Responsible Ministry; Legislative Council of 18 members elected for six years, and a House of Assembly consisting of 30 members elected for three years. Members are paid $500 a year, with free railway passes. There are municipal councils, town boards, and road and water trusts.

INDIAN EMPIRE.

This great dependency suggests comparison with the Roman Empire, for in India the Englishman is seen in the rôle of lawgiver and road-maker, as the Roman was of old. Both empires were fashioned out of a medley of races, speaking many tongues and worshiping many gods. Both are military empires extending their borders in the same anxious search for a strong natural frontier. But whereas the Romans absorbed the conquered races, or became in turn absorbed, the British in India sojourn but do not settle; while the aversion of whites to intermarry with blacks removes the possibility of assimilation.

The Act of Parliament that abolished the East India Company in 1858 also created a Secretary of State for India, together with a Council of 12 members, who sit in London. The supreme authority in India itself, both legislative and executive, is vested in the Governor General in Council. The Governor General, or Viceroy, is appointed for five years at a salary of £16,720 a year. His Council consists of six ordinary members, appointed by the Crown, for five years. The foreign department is under the special charge of the Viceroy. For legislative purposes the Council is increased by 16 additional members appointed by the Government. Of these, one half must be non-official and some are always natives. Madras and Bombay are called Presidencies, and are each ruled by a Governor appointed by the Crown, with legislative and executive councils. Bengal, the United Provinces, Eastern Bengal and Assam, Burma, and the Punjab, are each under a Lieutenant Governor, and have also a legislative council. The Central Provinces and the Northwest Frontier Province are under a Chief Commissioner. Coorg, British Baluchistan, Ajmer-Merwara, and the Andaman Islands are also under a Chief Commissioner. There are besides smaller tracts directly administered by the Supreme Government. Each of the provinces enjoys a large measure of administrative independence. A province is divided into divisions in charge of a Commissioner, and these subdivided into districts—the actual units of administration. Each district is in charge of a Deputy Commissioner or a Collector. There are about 260 such districts in British India. Natives have seats in all the Legislative Councils, and every branch of the Civil Service is open to them.

LOCAL GOVERNMENT.—There are 749 municipalities, mainly appointed on the elective principle. They impose taxes, enact by-laws, and have charge of education, water supply, etc. The sanction of the Provincial Government must be obtained for all by-laws and proposed taxes. The majority of the members on the town councils are natives, and on some committees all the members are natives. In the *mofussil*, or rural districts, there are about 1,087 district and local boards, having charge of roads, schools, and hospitals.

FOREIGN CITIES OF THE EARTH.

Over 50,000 inhabitants.

Cities and Country.	Census Year.	Population.
Aachen, Germany	1905	144,095
Aarhus, Denmark	1906	55,193
Abeokuta, West Africa	est.	150,000
Aberdeen, Scotland	est. 1907	174,579
Adana, Turkey in Asia	est.	60,000
Addis Abeba, Abyssinia	est.	50,000
Adelaide, Australia*	1906	174,438
Adrianople, Turkey	est.	81,000
Agra, India	1901	188,300
Agram, Austria	1901	57,689
Ahmedabad, India	1901	185,899
Ajmere, India	1901	73,839
Aksu, Chinese Turkestan	est.	50,000
Alcamo, Sicily	1901	51,809
Aleppo, Turkey	est.	200,000
Alexandria, Egypt	1902	310,587
Algiers, Algeria	1906	138,240
Alicante, Spain	1900	50,142
Aligarh, India	1901	70,434
Allahabad, India	1901	172,032
Altona, Germany	1905	168,320
Alwar, India	1901	56,771
Amballah, India	1901	98,638
Amiens, France	1906	90,920
Amoy, China	1906	114,000
Amritsar, India	1901	162,429
Amsterdam, Holland	1906	564,186
Angers, France	1906	82,935
Antananarivo, Madagascar	est. 1904	70,000
Antwerp, Belgium	1906	304,041
Arad, Hungary	1901	56,260
Arnhem, Netherlands	1906	62,279
Astrakhan, Russia in Europe	1900	121,580
Asuncion, South America	1905	60,259
Athens, Greece	1906	170,000
Augsburg, Germany	1905	94,923
Bagdad, Turkey in Asia	est.	145,000
Bahia, Brazil	1900	230,000
Baku, Russia	1900	179,133
Bangalore, India	1901	159,046
Bangkok, Siam	est.	400,000
Barcelona, Spain	1900	533,000
Bareilly, India	1901	131,208
Barfurush, Persia	est.	60,000
Bari, Italy	1906	77,478
Barmen, Germany	1905	156,148
Baroda, India	1901	103,790
Barrow-in-Furness, England	est. 1907	61,635
Basel, Switzerland	est. 1905	127,987
Batavia, Java	1900	115,887
Bath, England	1901	52,773
Beirut, Turkey	est.	120,000
Belfast, Ireland	est. 1905	349,180
Belgrade, Servia	1905	80,747
Bellary, India	1901	58,247
Benares, India	1901	209,331
Berditchev, Russia	1897	53,351
Bergen, Norway	1905	80,000
Berlin, Germany	1905	2,040,222
Bern, Switzerland	est. 1907	73,185
Besançon, France	1906	56,168
Beuthen, Germany	1905	60,078
Beziers, France	1906	52,268
Bhagalpur, India	1901	75,760
Bhopal, India	1901	77,023
Bialystok, Russia	1900	63,927
Bielefeld, Germany	1905	71,796
Bikaner, India	1901	53,078
Bilbao, Spain	1900	83,306
Birkenhead, England	est. 1907	118,553
Birmingham, England	est. 1907	553,155
Blackburn, England	est. 1907	134,980
Bochum, Germany	1905	118,464
Bogota, Colombia	1905	100,000
Bokhara, Central Asia	est.	75,000
Bologna, Italy	1901	152,009
Bolton, England	est. 1907	182,917
Bombay, India	1906	977,822
Bonn, Germany	1905	81,997
Bootle, England	est. 1907	67,114
Borbeck, Germany	1905	59,545
Bordeaux, France	1906	251,947
Bournemouth, England	est. 1907	69,246
Bradford, England	est. 1907	290,323
Braila, Roumania	1899	58,392
Brandenburg, Germany	1905	51,239
Bremen, Germany	1905	214,879
Brescia, Italy	1906	70,614
Breslau, Germany	1905	470,904
Brest, France	1906	85,294
Brighton, England	est. 1907	129,023
Brisbane, Australia	est. 1906	132,468
Bristol, England	est. 1907	367,979
Bromberg, Germany	1905	54,231
Bruges, Belgium	1906	53,486
Brunn, Austria	1901	109,346
Brunswick, Germany	1905	136,397
Brusa, Turkey in Asia	est.	90,000
Brussels, Belgium*	1906	623,041
Bucharest, Roumania	1902	281,717
Budapest, Hungary	1900	732,322
Buenos Aires, South America	est. 1907	1,102,155
Burnley, England	est. 1907	103,947
Burton-upon-Trent, England	est. 1907	53,425
Bury, England	est. 1907	58,918
Cabul, Afghanistan	1900	60,000
Cadiz, Spain	1900	69,382
Cagliari, Italy	1901	53,747
Cairo, Egypt	1897	570,062
Calais, France	1906	66,627
Calcutta, India*	1901	1,026,987
Calicut, India	1901	76,981
Campos, Brazil	est.	78,036
Canton, China	est. 1906	900,000
Cape Town, Africa*	1904	169,641
Caracas, Venezuela	1894	72,429
Cardiff, Wales	est. 1907	187,620
Carlsruhe, Baden	1905	111,249
Carthagena, Spain	1900	99,871
Cashmere, India	1901	122,618
Cassel, Germany	1905	120,467
Catania, Sicily	1901	149,295
Cawnpore, India	1901	197,170
Changsha, China	est. 1906	230,000
Charlottenburg, Germany	1905	239,559
Chefu, China	est. 1906	100,000
Chemnitz, Saxony	1905	244,927
Cheng-Tu, China	est.	800,000
Ching-Kiang, China	est. 1906	170,000
Christchurch, New Zealand*	1906	67,878
Christiania, Norway	1905	226,472
Chungking, China	est. 1906	702,000
Coblenz, Germany	1905	53,902
Coimbatur, India	1901	53,080
Cologne, Germany	1905	428,722
Colombo, Ceylon	1901	158,298
Combaconum, India	1901	59,673
Constantine, Algeria	1906	58;435
Constantinople, Turkey	est. 1905	1,125,000
Copenhagen, Denmark	1906	426,540
Cordoba, Argentina	1906	53,000
Cordoba, Spain	1900	58,275
Cork, Ireland	est. 1906	76,122
Coventry, England	est. 1907	77,626
Cracow, Austria-Hungary	1900	91,323
Cronstadt, Russia	1897	59,525
Croydon, England	est. 1907	154,342
Cuddalore, India	1901	52,216
Cuttack, India	1901	51,364
Czernowitz, Austria	1900	67 622
Czestochova, Russian Poland	1900	53,650
Dacca, India	1901	90,679
Daman, India	1894	64,248
Damascus, Turkey in Asia	est.	250,000
Danzig, Germany	1905	159,685
Darbhanga, India	1901	66,254
Delhi, India	1901	208,575
Derby, England	est. 1907	125,774
Dessau, Germany	1905	55,134
Deutsch Wilmersdorf, Germany	1905	63,538
Devonport, England	est. 1907	79,959
Dijon, France	1906	74,113
Dortmund, Prussia	1905	175,577
Dresden, Germany	1905	516,996
Dublin, Ireland*	est. 1905	375,350
Duisburg, Germany	1905	192,346
Dunaburg, Russia	1897	72,231
Dundee, Scotland	est. 1907	165,748
Dunedin, New Zealand*	1901	56,020
Durban, South Africa	est. 1906	69,894
Dusseldorf, Germany	1905	253,274
Edinburgh, Scotland	est. 1907	345,747
Ekaterinodar, Russia	1897	65,606
Ekaterinoslav, Russia	1900	135,552

*With suburbs.

Cities and Country.	Census Year.	Population.
Elberfeld, Germany	1905	162,853
Elbing, Germany	1905	55,627
Elizabetgrad, Russia	1897	61,488
Erfurt, Germany	1905	98,849
Essen, Germany	1905	231,396
Faizabad, India	1901	75,085
Fez, Morocco	est.	140,000
Fiesole, Italy	1901	58,000
Firozpur, India	1901	50,437
Flensburg, Germany	1905	53,777
Florence, Italy	1901	205,589
Frankfurt-on-the-Main, Prussia	1905	334,978
Frankfurt-on-Oder, Germany	1905	64,304
Freiburg, Saxony	1905	74,102
Fu-Chow, China	est.	700,000
Fu Kui, Japan	1903	50,155
Fukuoka, Japan	1903	71,047
Furruckabad, India	1901	67,338
Furth, Bavaria	1905	60,525
Galatz, Roumania	1899	62,678
Gateshead, England	est. 1907	125,783
Gaya, India	1901	71,288
Gelsenkirchen, Germany	1905	147,037
Geneva, Switzerland	1907	116,387
Genoa, Italy	1901	175,000
Georgetown, Guiana	1901	53,176
Ghent, Belgium	1906	163,079
Glasgow, Scotland	1907	847,584
Gleiwitz, Germany	1905	61,414
Gorakhpur, India	1901	64,148
Gorlitz, Germany	1905	83,768
Gothenburg, Sweden	1907	156,927
Granada, Spain	1900	75,900
Gratz, Austria-Hungary	1900	138,080
Greenock, Scotland	1907	71,269
Greenwich, England	1901	95,770
Grenoble, France	1906	73,022
Grimsby, England	est. 1907	70,574
Groningen, Netherlands	1906	73,278
Grosswardein, Hungary	1901	50,177
Guadalajara, Mexico	1900	101,208
Guatemala, Rep. of Guatemala	1904	96,560
Guayaquil, Ecuador	est.	80,000
Haarlem, Netherlands	1906	69,701
Hagen, Germany	1905	77,567
Hague, The, Netherlands	1906	248,995
Hakodate, Japan	1903	85,313
Halifax, England	est. 1907	110,138
Halle-on-Saale, Germany	1905	169,916
Hamborn, Germany	1905	67,494
Hamburg, Germany	1905	803,090
Hangchau, China	1901	750,000
Hankau, China	1906	530,000
Hanley, England	est. 1907	67,174
Hanoi, Indo-China	1900	103,188
Hanover, Germany	1905	250,032
Harburg, Germany	1905	55,676
Hastings, England	est. 1907	67,477
Havana, Cuba	1902	262,395
Havre, France	1906	132,430
Helsingfors, Finland	1903	106,067
Hiroshima, Japan	1903	121,196
Hodmezo Vasarhely, Hungary	1901	60,883
Hongkong, China	est. 1905	466,850
Hornsey, England	est. 1905	84,070
Howrah, India	1901	157,594
Hubli, India	1901	60,214
Huddersfield, England	est. 1907	94,814
Hull, England	est. 1907	266,762
Hyderabad, India	1901	488,466
Indore, India	1901	86,200
Ipswich, England	est. 1907	72,825
Irkutsk, Siberia	1897	51,473
Ivanovo-Vozensensk, Russia	1900	64,628
Jaipur, India	1901	160,167
Jassy, Roumania	est.	77,759
Jerez de la Frontera, Spain	1900	63,473
Jhansi, India	1901	55,724
Jodhpur, India	1901	60,437
Johannesburg, South Africa	1904	158,580
Jojokarta, Java	est.	60,000
Jubbulpur, India	1901	90,316
Julinder, India	1901	67,735
Kabul, Afghanistan	est.	60,000
Kagoshima, Japan	1904	59,000
Kaisarieh, Turkey in Asia	est.	72,000
Kaiserslautern, Germany	1905	52,306
Kalgau, China	est.	65,000
Kanazawa, Japan	est.	99,657
Karachi, India	1901	116,663
Kashgar, Turkestan	est.	70,000
Kassel, Prussia	1905	120,467

Cities and Country.	Census Year.	Population.
Katmandu, Nepal	1905	50,000
Kazan, Russia	1897	143,707
Kecskemet, Hungary	1901	57,812
Kerbela, Turkey in Asia	est.	65,000
Kharkov, Russia	1897	177,846
Khartum, Nubia	est.	70,000
Kherson, Russia	1897	69,219
Khokan, Russia	1897	81,354
Kiao-chau, China	est.	84,000
Kiel, Prussia	1905	163,772
Kiev, Russia	1902	319,000
King's Norton, England	1905	69,630
King-te-chen, China	est.	500,000
Kioto, Japan	1903	380,568
Kishinev, Russia	1897	125,787
Kiu-kiang, China	1905	62,000
Kobe, Japan	1903	285,002
Kolapur, India	1901	54,373
Konigsberg, Germany	1905	223,770
Konigshutte, Germany	1905	66,042
Kovno, Russia	1903	73,743
Krefeld, Germany	1905	110,347
Kremenchug, Russia	1897	63,007
Kumamoto, Japan	1903	59,717
Kure, Japan	1903	66,066
Kursk, Russia	1897	75,721
Lahore, India	1901	202,964
Lanchow, China	est.	500,000
La Paz, Bolivia	est. 1906	78,910
La Plata, Argentine Republic	1906	80,000
Lausanne, Switzerland	1907	54,460
Leeds, England	est. 1907	470,268
Leghorn, Italy	1901	98,321
Leicester, England	1907	236,124
Leipzig, Germany	1905	503,672
Leith, Scotland	est. 1907	83,668
Le Mans, France	1906	65,467
Lemberg, Austria	1900	159,877
Leon, Mexico	1900	63,263
Leyden, Netherlands	1906	57,095
Leyton, England	est. 1905	114,555
Libau, Russia	1897	69,405
Liege, Belgium	1906	72,039
Liegnitz, Germany	1905	59,710
Lille, France	1906	205,602
Limoges, France	1906	88,597
Linden, Germany	1905	57,944
Linz, Austria-Hungary	1900	58,791
Lisbon, Portugal	1900	356,009
Liverpool, England	est. 1907	746,144
London, England	est. 1907	7,217,941
Lorca, Spain	1900	69,836
Lubeck, Germany	1905	91,541
Lublin, Russian Poland	1897	50,385
Lucca, Italy	1901	74,971
Lucknow, India	1901	264,049
Ludwigshafen-on-Rhine, Bavaria	1905	72,286
Lyons, France	1906	472,114
Macao, China	1899	63,991
Madras, India	1901	509,346
Madrid, Spain	1900	539,835
Madura, India	1901	105,984
Magdeburg, Germany	1905	240,661
Mainz, Germany	1905	91,124
Malaga, Spain	1900	130,109
Malmo, Sweden	1907	74,668
Manchester, England	est. 1907	643,148
Manila, Philippine Islands	1903	219,928
Manipur, India	1901	67,093
Mannheim, Germany	1905	163,693
Maracaibo, Venezuela	1905	50,000
Marash, Turkey in Asia	est.	52,000
Maria-Theresiopel, Hungary	1900	82,122
Mariupol, Russia	1900	52,770
Marseilles, France	1906	517,498
Maulmain, Burma	1901	58,446
Mecca, Arabia	est.	60,000
Mechlin, Belgium	1906	58,800
Meerut, India	1901	118,129
Melbourne, Australia	1906	526,400
Merthyr Tydfil, Wales	est. 1905	73,848
Messina, Italy	1901	93,672
Metz, Germany	1905	60,396
Mexico, Republic of Mexico	1900	344,721
Middlesborough, England	est. 1907	101,783
Milan, Italy	1901	234,045
Minsk, Russia	1897	91,494
Mirzapur, India	1901	79,862
Molenbeek, Belgium	1904	63,678
Monterey, Mexico	1900	62,266
Montevideo, Uruguay	est. 1907	309,390
Montpellier, France	1906	77,114

Cities and Country.	Census Year.	Population.
Montreal, Canada	est. 1907	450,000
Moradabad, India	1901	75,128
Moscow, Russia	1907	1,359,254
Mosul, Turkey	est.	60,000
Muhlhausen, Germany	1905	94,498
Mulheim-am-Rhein, Prussia	1905	50,811
Mulheim-an-der-Ruhr, Prussia	1905	93,599
Multan, India	1901	87,394
Munich, Germany	est. 1907	544,000
Munster, Prussia	1905	81,468
Murcia, Spain	1900	111,539
Muttra, India	1901	60,042
Mysore, India	1901	68,111
Nagasaki, Japan	1903	153,293
Nagoya, Japan	1904	288,639
Nagpur, India	1901	127,734
Namangan, Russia	1897	62,017
Nancy, France	1905	110,570
Nanking, China	est. 1906	261,000
Nantes, France	1906	133,247
Naples, Italy	1901	563,540
Nara, Japan	1903	33,735
Nawanagar, India	1901	53,844
Negapatam, India	1901	57,190
Newcastle, England	est. 1907	272,969
Newport, England	est. 1907	75,585
Nice, France	1906	134,232
Niigata, Japan	1904	59,576
Nikolayev, Russia	1897	92,060
Nimeguen, Netherlands	1906	52,147
Nîmes, France	1906	80,184
Ning-po, China	est. 1906	260,000
Niuchwang, Manchuria	est. 1906	74,000
Nizhni Novgorod, Russia	1897	90,053
Northampton, England	est. 1907	95,070
Norwich, England	est. 1907	119,191
Nottingham, England	est. 1907	257,489
Novo Cherkask, Russia	1897	52,005
Nuremberg, Bavaria	1905	294,426
Oberhausen, Prussia	1905	52,166
Odessa, Russia	1900	449,673
Offenbach, Germany	1905	59,806
Okayama, Japan	1903	81,025
Oldham, England	est. 1907	141,730
Oporto, Portugal	1900	167,955
Oran, Algeria	1906	106,517
Orel, Russia	1897	70,075
Orenburg, Russia	1897	72,425
Orleans, France	1906	68,614
Osaka, Japan	1903	995,945
Osnabruck, Germany	1905	59,580
Otaru, Japan	1903	79,361
Ottawa, Canada	1901	59,928
Pachuca, Mexico	1904	50,981
Padua, Italy	1901	82,281
Paisley, Scotland	est. 1907	88,710
Palembang, Sumatra	1895	53,788
Palermo, Italy	1901	309,694
Palma, Spain	1900	63,937
Para, Brazil	1902	100,000
Paris, France	1906	2,763,393
Patiala, India	1901	53,545
Patna, India	1901	134,785
Peking, China	est. 1905	700,000
Pensa, Russia	1897	61,851
Pernambuco, Brazil	est. 1900	120,000
Pforzheim, Germany	1905	59,307
Pilsen, Austria	1900	68,079
Pistoja, Italy	1901	62,606
Plauen, Saxony	1905	105,383
Plymouth, England	est. 1907	120,063
Pnom-Penh, Cambodia	est.	50,000
Poltava, Russia	1897	53,703
Poona, India	1901	153,320
Port-au-Prince, Haiti	1905	70,000
Port Louis, Is. of Mauritius	1901	52,740
Porto Alegre, Brazil	1902	80,000
Port of Spain, Is. of Trinidad	1901	54,100
Porto Novo, Africa	est.	50,000
Port Said, Egypt	1905	56,000
Portsmouth, England	est. 1907	208,291
Posen, Germany	1905	137,067
Potsdam, Prussia	1905	61,414
Prague, Austria-Hungary	1907	228,645
Prato, Italy	1901	51,453
Pressburg, Austria	1901	65,867
Preston, England	est. 1907	117,093
Puebla, Mexico	est. 1904	98,932
Quebec, Canada	1901	68,840
Quito, Ecuador	est.	80,000
Rampur, India	1901	78,758
Rangoon, Burma	1901	234,881
Ravenna, Italy	1901	64,031
Rawal Pindi, India	1901	87,688
Reading, England	est. 1907	80,311
Reggio, Italy	1901	58,490
Rennes, France	1906	75,640
Reval, Russia	1900	66,292
Rheims, France	1906	109,859
Rhondda, Wales	1905	124,988
Riga, Russia	1897	282,943
Rio de Janeiro, Brazil	est. 1906	811,265
Rixdorf, Prussia	1905	153,650
Rochdale, England	est. 1907	87,999
Rome, Italy	1904	503,857
Rosario, Argentine Republic	1906	150,000
Rostock, Germany	1905	60,790
Rostov-on-Don, Russia	1897	119,476
Rotherham, England	1901	54,349
Rotterdam, Netherlands	1906	390,364
Roubaix, France	1906	121,017
Rouen, France	1906	118,459
St. Denis, France	1906	64,790
St. Gall, Switzerland	1907	52,934
St. Gilles, Belgium	1905	60,086
St. Helens, England	est. 1907	92,476
St. John, Canada	1904	51,759
St. Petersburg, Russia	1905	1,429,000
Sakai, Japan	1903	54,040
Salem, India	1901	70,621
Salford, England	est. 1907	236,670
Samara, Russia	1897	89,999
Samarang, Java	1901	89,286
Samarkand, Russia	1900	58,194
San Luis Potosi, Mexico	1900	61,019
San Salvador, Central America	1901	59,544
Santander, Spain	1900	54,694
Santiago de Chile	est. 1904	336,510
Santiago de Guatemala	1898	74,000
Santiago de Guayaquil	1893	51,000
Sao Paulo, Brazil	1902	332,000
Sapporo, Japan	1903	55,304
Saragossa, Spain	1900	99,118
Saratov, Russia	1897	137,147
Sasebo, Japan	1903	68,344
Schaarbeek, Belgium	1905	71,114
Schoeneberg, Prussia	1905	141,040
Sealkote, India	1901	57,956
Seharanpur, India	1901	66,254
Sendai, Japan	1903	100,231
Seoul, Korea	1902	196,646
Sevastopol, Russia	1897	53,595
Seville, Spain	1900	148,315
Shahjehanpur, India	1901	76,458
Shanghai, China	est. 1906	651,000
Shasi, China	est. 1905	80,000
Sheffield, England	est. 1907	455,453
Shiraz, Persia	est.	50,000
Shitomir, Russia	1900	80,787
Sholapur, India	1901	75,288
Singanfoo, China	est.	1,000,000
Singapore, Straits Settlements	1901	228,555
Smethwick, England	1905	62,605
Smyrna, Turkey	est.	201,000
Sofia, Bulgaria	est. 1906	82,187
Sokoto, Africa	est.	60,000
Southampton, England	est. 1907	119,745
South Shields, England	est. 1907	113,460
Spandau, Germany	1905	70,301
Srinagar, India	1901	122,618
Stettin, Germany	1905	224,119
Stockholm, Sweden	1907	332,738
Stockport, England	est. 1907	100,986
Stockton-on-Tees, England	1901	51,478
Stuttgart, Germany	1905	249,443
Suchau, China	1905	500,000
Sunderland, England	est. 1906	156,029
Surabaya, Java	1900	146,944
Surakarta, Java	1900	109,459
Surat, India	1901	119,306
Swansea, Wales	est. 1906	97,324
Swatau, China	1905	60,000
Sydney, Australia	est. 1906	529,600
Szegedin, Hungary	1900	102,991
Tabriz, Persia	est.	200,000
Taganrog, Russia	1900	58,928
Tananarivo, Madagascar	1901	70,000
Tanjore, India	1901	57,870
Tantah, Egypt	1897	57,289
Taranto, Italy	1901	60,733
Tashkent, Russia	1897	155,673
Teheran, Persia	est.	280,000
Tientsin, China	est. 1906	750,000
Tiflis, Russia	1900	159,590

Cities and Country.	Census Year.	Population.
Tokushima, Japan	1903	63,710
Tokyo, Japan	1903	1,818,655
Tomsk, Siberia	1900	63,533
Toronto, Canada	1901	208,040
Tottenham, England	est. 1905	116,232
Toulon, France	1906	103,549
Toulouse, France	1906	149,438
Tourcoing, France	1906	81,671
Tours, France	1906	67,601
Toyama, Japan	1903	56,275
Trapani, Sicily	1901	59,452
Trichinopoli, India	1901	104,721
Trieste, Austria-Hungary	1907	205,136
Trivandrum, India	1901	57,882
Troyes, France	1906	53,447
Tsaritsyn, Russia	1897	55,186
Tucuman, Argentina	1906	55,000
Tula, Russia	1897	114,733
Tunis, Africa	est.	250,000
Turin, Italy	1901	335,656
Tver, Russia	1897	53,544
Tynemouth, England	1901	51,366
Ulm, Germany	1905	51,680
Umballa, India	1901	78,638
Urumiah, Persia	est.	50,000
Utrecht, Holland	1906	114,692
Valencia, Spain	1900	213,530
Valetta, Malta	1900	61,268
Valladolid, Spain	1900	68,789
Valparaiso, Chile	1905	175,000
Venice, Italy	1901	151,840
Verona, Italy	1901	74,271
Versailles, France	1906	54,982
Vienna, Austria	1907	1,999,912
Vilna, Russia	1900	162,633
Vitebsk, Russia	1897	65,871
Voronezh, Russia	1900	84,146
Wakayama, Japan	1903	68,527
Wallasey, England	1905	62,460
Walsall, England	est. 1907	96,171
Warrington, England	est. 1906	70,269
Warsaw, Poland	1901	756,426
Wellington, New Zealand*	1906	63,807
Wenchau, China	est. 1906	80,000
West Bromwich, England	est. 1906	69,123
West Ham, England	est. 1906	308,284
West Hartlepool, England	est. 1905	71,313
Wiesbaden, Prussia	1905	100,953
Wigan, England	est. 1906	88,606
Willesden, England	1905	138,080
Winnipeg, Canada	1906	90,153
Wolverhampton, England	est. 1906	102,016
Wu-chang, China	est.	500,000
Wuchau, China	1906	59,000
Wu-Hu, China	1906	123,000
Wurzburg, Germany	1905	80,327
Yarkand, Chinese Turkestan	est.	100,000
Yarmouth, England	1906	52,879
Yaroslav, Russia	1897	71,616
Yekaterinoslav. See Ekaterinoslav.		
Yelizabethgrad. See Elizabetgrad.		
Yokohama, Japan	1903	326,035
York, England	est. 1906	84,730
Zanzibar, East Africa	est.	100,000
Zaragoza. See Saragossa.		
Zhmitomir, Russia	1900	80,787
Zürich, Switzerland	1907	186,846
Zwickau, Germany	1905	68,225

*With suburbs.

CANADA IN STATISTICS, 1908.

Area in square miles	3,745,574
Estimated Population for 1910	7,350,000
Banks—Capital Paid up	$ 96,049,538
Banks—Note Circulation	68,153,994
Banks—Deposits	658,367,015
Banks—Discounts	670,170,833
Deposits in Savings Banks	62,581,145
Post Office Savings Banks (number)	1,084
Failures to December 31st—	
Assets	9,443,327
Liabilities	13,221,259
Total Dominion Revenue	96,055,417
Expenditure on Consolidated Fund	76,641,451
Total Net Debt	277,960,860
Fire Insurance with Canadian Companies	433,878,730
Fire Insurance with British Companies	976,873,409
Fire Insurance with American Companies	289,931,375
Fire Insurance; Total Premiums	17,037,329
Fire Insurance; Total Losses	10,278,521
Life Insurance with Canadian Companies	480,266,931
Life Insurance with British Companies	46,159,856
Life Insurance with American Companies	193,087,126
Life Insurance; Total Premiums	29,964,192
Life Insurance; Paid to Policy Holders	16,118,419
P.O. Money Orders, Issued in Canada	49,974,007
P.O. Money Orders, Payable in Canada	31,836,629
Letters sent	396,011,000
Post Cards sent	40,664,000
Railway Earnings—Gross	$146,918,313
Railway Earnings—Net	39,614,170
Railways, Electric (miles)	992
Railways, Steam (miles)	22,966
Railway Capital, Electric	$ 86,929,609
Railway Capital, Steam	$1,239,295,013
Canals (miles)	535
Canals, Total Cost to 1908	$ 93,442,874
Telegraph, Government (miles of line)	7,226
Telegraph, Chartered Companies (miles of line)	25,517
Telephones	120,000
Public Schools (1901)	16,122
Pupils and students (1901)	911,661
Colleges and Universities	277
Total Vessels (inward and outward) in Canadian Trade (tons)	90,104,886
Registered Merchant Marine (vessels)	7,528
Tonnage of Merchant Marine	698,688
Imports—Dutiable	$218,160,047
Imports—Free	133,719,908
Imports—Coin and Bullion	6,548,661
Exports—Home	246,960,968
Exports—Foreign	16,407,984
Duty on Imports	58,331,074
Exports—The Mine	39,177,133
Exports—The Fisheries	13,867,368
Exports—The Forest	44,170,470
Exports—Animal Produce	55,101,260
Exports—Agricultural	66,069,939
Exports—Manufactures	28,507,124
Imports from Great Britain	94,417,314
Imports from United States	214,648,885
Exports to Great Britain	134,484,156
Exports to United States	113,520,500
Immigration (March 31)	204,071
Total Immigration since 1897	1,219,742
Immigration from Great Britain	487,720
Immigration from United States	365,580
Immigrants from United States, 1908	59,832
Money brought by Immigrants	$ 60,000,000
Fisheries Product (1907)	25,499,349
Grain Production (bushels)	474,575,855
Wheat Production (bushels)	126,795,137
Wheat Export to Great Britain (bushels)	43,002,541
Value of Grain Crop	$432,534,000
Value of Western Wheat Crop	143,122,500
Total Appropriations to aid Agriculture	2,690,297
Mineral Production	87,323,849
Gold Production	3,825,000
Silver Production	11,667,197
Copper Production	8,500,885
Nickel Production	8,231,538
Coal Production	25,567,235
Manufactures (value, 1906)	718,352,603
Military Force (total number)	46,060
Churches	11,943
Religious Denominations	31

RULERS, STATESMEN, AND POLITICAL EVENTS.

ABBAS I. (*ab-bas'*), **THE GREAT** (1557-1628). Persian monarch; came to the throne (1586); victorious over the Uzbeks at Herat (1597); won many battles from the Turks (1601-1609); drove the Portuguese from Ormuz (1622). He is noted for his many important reforms.

ABBAS II., HILMI, K. G. C. (1874-). Khedive of Egypt since 1892; eldest son of Tewfik Pasha. He was educated in Europe and, although unfriendly toward the English government, has proved an able and enlightened ruler under English supervision.

ABBASSIDES (*ab-bass'ids*), **THE.** Caliphs of Bagdad. Of this noted dynasty of Saracen rulers (750-1258), Harun-al-Rashid and al-Mamun were the most celebrated.

ABBOTT, SIR JOHN JOSEPH CALDWELL (1821-1893). Canadian statesman; born at St. Andrew's, Quebec. Member Dominion Parliament (1867); member without portfolio in Sir John A. Macdonald's cabinet (1887); premier of the Dominion (1891-1892) after Macdonald's death; resigned through ill health, though he remained a member of the cabinet of his successor, Sir John Thompson; knighted (1892); an authority on commercial law.

ABD-ER-RAHMAN (? -732). A Saracen governor of Spain who with 80,000 men invaded Gaul and met the Franks under Charles Martel near Poitiers in the battle of Tours (October, 732). After six days of hand-to-hand fighting the Saracens were defeated.

ABD-UL-HAMID II. (1842-). Thirty-fourth sultan of the Ottoman Empire (1876-). In 1877 Russia declared war on account of the Bulgarian outrages. England alone saved Turkey. The Treaty of San Stefano was modified by the Berlin Congress, but Turkey lost Montenegro, Servia, Roumania, Bulgaria, and Herzegovina. The Armenian outrages (1895-1896) again roused Europe, but the sultan skillfully played off one European power against another and nothing was done. In 1897 Crete rebelled, and secured by the aid of foreign powers some degree of autonomy. In 1908 the sultan was forced by the "Young Turk" party, whom hitherto he had treated as rebels, to sign a constitution assuring representative government in place of autocratic rule. Deposed April 26, 1909.

ABERDEEN, SEVENTH EARL OF, SIR JOHN CAMPBELL GORDON (1847-). British statesman and governor general of Canada (1893-1898); lord lieutenant of Ireland in Gladstone's ministry in 1886, and again in 1905.

ACHMET III. or **AHMED III.** (1673-1736). Sultan of Turkey (1703-1730). Sheltered Charles XII. after his defeat at Pultowa (1709); took Morea (Greece) from the Venetians (1715); invaded Hungary, was defeated at Peterwardein (1716) by Prince Eugene, and later at Belgrade; by the treaty of Passarowitz he gave up to Austria Belgrade and other territories. Deposed by his soldiers (1730) and died in prison (1736).

ADAMS, CHARLES FRANCIS (1807-1886). American diplomatist, son of John Quincy Adams; was graduated at Harvard (1825); editor the Boston *Whig* (1846-1848); Free Soil candidate for vice-president (1848); minister to England (1861-1868); member of Geneva Court of Arbitration to settle Alabama Claims.

ADAMS, SAMUEL (1722-1803). "The Father of the American Revolution." His speeches and writings brought about not only the war, but independence of the colonies; from 1740 to 1797 was active in public affairs; signer of the Declaration; member of Congress eight years; governor of Massachusetts (1794-1797).

ADOLPH or **ADOLPHUS OF NASSAU** (1250-1298). King of Germany (1292-1298); successor of Rudolph I.; dethroned (1298). Rudolph's son, Albert, became king. A battle followed in which Adolphus was slain.

AGESILAUS (about 444-360 B. C.). King of Sparta (401-360). Commander-in-chief of Spartan forces in Asia Minor during the Persian War (397); led the forces against Athens, Thebes, and other states in Greece (394); led an expedition against Egypt (361), and died on his way home.

ALBANY CONVENTION. The first general scheme of union proposed to the colonies. In 1754, at the outbreak of the war between the French and English, representatives from the American colonies met at Albany to decide upon the sphere of the Indians in the war and to confirm the peace of the Five Nations. A scheme of union of the colonies was proposed but none accepted it. The king refused it as giving too much power to the colonies, and the colonies refused it as it gave too much power to the king.

ALBANY REGENCY. A group of New York Democrats at Albany from 1820 to 1850 dominated the state and to some extent national elections and patronage by their thorough organization and political ability. Among the most famous members were Martin Van Buren, William L. Marcy (originator in 1833 of the saying, "To the victors belong the spoils"), Silas Wright, John A. Dix, Benjamin F. Butler, A. C. Flagg, Dean Richmond, Samuel A. Talcott, and others.

ALBERT or **ALBERT FRANCIS AUGUSTUS CHARLES EMMANUEL, PRINCE OF SAXE-COBURG-GOTHA** (1819-1861). Husband of Queen Victoria and known as the Prince Consort; married Victoria, February 10, 1840. He attained an important place as a statesman and accomplished much good. His last official act was the prevention of war between England and the United States over the Trent affair.

ALBERT I. (1250?-1308). Archduke of Austria and emperor of Germany; was the son of Rudolph I. On the death of Rudolph in 1291 Albert hoped to succeed to the throne, but on account of his reputation for tyranny was passed over and Adolph was chosen. In 1298 Adolph so disgusted the princes that he was dethroned and Albert was made king. They met in battle near Worms and Adolph was slain. Pope Boniface VIII. claimed that he alone was emperor, but Albert forced him to terms and conducted several foreign wars unsuccessfully. Albert was assassinated by his nephew, John, in 1308.

ALBERT I. (1875-). Third king of the Belgians; only son of Count Philippe of Flanders, a younger brother of Leopold II.; has traveled extensively; is a keen student of politics, economics, and social questions; married Princess Elizabeth of Bavaria, October 2, 1900; became king December 23, 1909.

ALBERT II. OF GERMANY AND V. OF AUSTRIA (1397-1439). In 1437 he was elected king of Bohemia and of Hungary to succeed his father-in-law, Emperor Sigismund. In March, 1438, he was elected ruler of Germany. Wars with the Turks and rebellions in Bohemia and Hungary marked his short reign.

ALEXANDER JANNAEUS (? -78 B. C.). King of the Jews; the son of John Hyrcanus; extended the frontiers of his kingdom west and south; was defeated by Ptolemy Lathyrus in Galilee; made an alliance with Cleopatra and drove Ptolemy out. His reign was marked by a great struggle between the Sadducees and the Pharisees, with the former of whom he sided. It is said that 50,000 perished during this civil strife. He quelled a revolt at Jerusalem by slaughtering 6,000. On his return from a short exile into which he had been driven by the Pharisees, he caused 800 rebels to be crucified before him and their wives and children slaughtered (86 B. C.). He died in 78 B. C.

ALEXANDER THE GREAT (356-323 B. C.). King of Macedon and conqueror of the Eastern world. He was the son of Philip II. of Macedon and succeeded him. He speedily cleared away all opposition and undertook the conquest of Persia. He entered Asia Minor in 334; loosed the famous Gordian knot with his sword; defeated the Persian host under Darius at Issus in 333; stormed and took Tyre in 332; then Gaza; conquered Egypt in 332; defeated Darius at Arbela, near Gaugamela (331); entered India, conquering as he went, in 327. He died in Babylon (323 B. C.). On his death his vast kingdom was divided among his generals and favorites.

ALEXANDER I. (1857-1893). Prince of Bulgaria (1879-1886). Served in the Russo-Turkish War (1877-1878); when Bulgaria was made a self-ruling principality, he was elected ruler or hereditary prince (1879); forced to abdicate (1886) by a Russian conspiracy and kidnapped. On his release he formally abdicated.

ALEXANDER I., PAULOVITCH (1777-1825). Czar of Russia (1801-1825). Son and successor of Paul I., who was the son of Catherine II. At first friendly to Napoleon, he later opposed him; made

peace with him in 1807; broke it and Napoleon invaded Russia in 1812. Alexander then joined England and Prussia and with them invaded Paris (March 31, 1814); joined Austria and Prussia in the "Holy Alliance" after Waterloo (1815). He was succeeded by Nicholas I.

ALEXANDER II., NIKOLAYEVITCH (1818-1881). Czar of Russia (1855-1881). Son and successor of Nicholas I. Ascended the throne during the Crimean War; compelled to sign the humiliating Treaty of Paris (1856); freed all of the slaves or serfs in his kingdom (1858-1861), over 23,000,000 people; sold Alaska to the United States (1867); fought a successful war against Turkey (1877-1878); had great trouble with Nihilists and was assassinated by them in the streets of St. Petersburg (1881). Alexander III. succeeded him.

ALEXANDER III., ALEXANDROVITCH (1845-1894). Czar of Russia (1881-1894); not crowned until 1883 for fear of the Nihilists, against whom he made strict and severe laws; the persecutions of the Jews began in his reign; Russia and France were forced into friendship in opposition to the Triple Alliance of Germany, Austria, and Italy. He did much to strengthen the army and navy. Nicholas II. succeeded him.

ALEXANDER I. (1078?-1124). King of Scotland; fourth son of Malcolm Canmore; succeeded his brother, Edgar (1107), while the lowlands were ruled by his younger brother, David I. He founded an episcopacy in opposition to the English Church, establishing abbeys at Inchcolm and Scone, and a bishopric at St. Andrews. He died childless.

ALEXANDER II. (1198-1249). King of Scotland; son of William the Lion; came to the throne (1214); married Joan, the sister of Henry III. of England. He was a wise lawgiver, and brought prosperity to the land.

ALEXANDER III. (1241-1285). King of Scotland; succeeded in 1249; during his minority was beset by English and Scottish regents; defeated Haakon of Norway at Largs (1263) and added the Hebrides to Scotland. He was killed on March 12, 1285, by falling over a cliff.

ALEXANDER I. (1876-1903). King of Servia (1889-1903). Son of Milan, who abdicated in 1889; ruled under a regency until 1893, when he took personal control; formulated a new constitution (1895); in 1900 married Draga Mashin, a widow much older than himself; on June 11, 1903, he and his consort were assassinated with others by conspiracy of the army officers. Peter I. succeeded.

ALEXEI or **ALEXIS MIKHAILOVITCH** (1629-1676). Czar of Russia (1645-1676). Son and successor of Michael Feodorovitch. One of the best of rulers. He prepared the nation for many reforms introduced by his son, Peter the Great.

ALEXIUS I., COMNENUS (1048-1118). One of the ablest rulers of the Byzantine Empire (1081-1118). The son of John Comnenus and nephew of the emperor, Isaac Comnenus. His soldiers raised him to the throne to take the place of old Nicephorus Botaniates, who was obliged to retire to a monastery. He was everywhere surrounded by foes who invaded his empire. To protect himself from the Seljukian Turks he called upon Pope Urban II. for help. This brought about the First Crusade. He stayed the fall of the Byzantine Empire during his long reign of thirty-seven years.

ALEXIUS or **ALEXIS II., COMNENUS** (about 1168-1183). Emperor of Constantinople (about 1180-1183). He succeeded his father, Manuel I., and was deposed and strangled by his uncle, Andronicus.

ALFONSO I. OF CASTILE AND VI. OF LEON (1030-1109). Came to the throne of Leon in 1065; in 1072 succeeded in Castile his brother Sancho, who was assassinated; imprisoned his brother, Garcia, for ten years; ruled over nearly all of Christian Spain until defeated by the Almoravides allied with the king of Seville (1108). Succeeded by his daughter, Urraca, who married Alfonso I. of Aragon.

ALFONSO III. (848-912). The first king of Leon, Asturias, and Galicia. Gained many victories over the Moors from 870 to 901. His son, Garcia, rebelled in 888 and was defeated and imprisoned. His wife incited another rebellion and caused his abdication in 910. He led Garcia's forces for two years against the Moors.

ALFONSO X. (1221-1284). "The Astronomer," "the Philosopher," or "the Wise"; king of Leon and Castile. Succeeded his father, Ferdinand III. (1252); elected king of the Germans (1257), but was excluded by Rudolph of Hapsburg (1273); defeated the Moors (1262); deprived of his throne by his son, Sancho (1282); noted in literature.

ALFONSO I. (? -1134). King of Navarre and Aragon; married Urraca, daughter and successor of Alfonso VI. of Leon and Castile; was divorced from her; took Saragossa after a four years' siege (1118); slew 20,000 Moors at Daroca (1120); invaded Valencia (1123); took Bordeaux and Bayonne (1130); was defeated by the Almoravides after a long struggle.

ALFONSO I. (1109-1185). First king of Portugal. Son of Henry of Burgundy, the conqueror and Count of Portugal, who died when Alfonso was only two years old. At twenty-one he took the power away from his mother, Theresa of Castile, who had abused it. Defeated the Moors on the plains of Ourique (1139), when legend says 200,000 perished. He then took the title of king. He took Lisbon (1147) with the aid of some English crusaders on their way to the Holy Land. He besieged and took Alcazar de Sal (1158); the fortress of Santarem from the Saracens (1171); defeated the Almohade ruler, Jusef-ben-Jakub (1184).

ALFONSO V. (1432-1481). King of Portugal; "the African." Assumed the throne (1448), declared his uncle, Pedro, the late regent, a rebel and defeated him; abdicated in favor of his son (1476); was obliged to take the throne again; signed the treaty of Alcantara with Castile (1479). In his reign the explorations of the Portuguese in Africa were pushed south of the equator.

ALFONSO V. (1385-1458). King of Aragon, Naples, and Sicily (1416-1458). Brought southern Italy under the control of Aragon; was defeated and captured by the Genoese fleet and sent to the duke of Milan (1435). Alfonso so charmed him by his manners and talent that he set him at liberty and made an alliance with him. After many battles, Alfonso took Naples, where he died while his troops were besieging Genoa.

ALFONSO XII. (1857-1885). King of Spain (1874-1885). Son of the deposed Queen Isabella II. In 1883 he was publicly insulted in Paris as he was returning from Germany, and war was narrowly averted. He struggled vainly to cement the various factions in which his country was divided. His posthumous son, Alfonso XIII., succeeded him.

ALFONSO XIII. (1886-). King of Spain. His mother, Maria Christina, Archduchess of Austria, acted as regent until his majority. His reign has been marked by mutinies abroad and cabinet crises and anarchistic disturbances at home. In 1894 and 1895 rebellion broke out in Cuba and the Philippines. In 1898 the United States declared war on Spain, and in the treaty of Paris, December 10, 1898, Spain lost Cuba, the Philippines, and Porto Rico. In 1906 the king married Princess Ena of Battenberg, niece of Edward VII. of England.

ALFRED THE GREAT (849-901). King of Wessex (871-901). He was the son of Ethelwulf, king of the West Saxons. The two great features of his reign are the incursions by the Danes and the great attention paid to education through the king's patronage. After several battles with the Danes, he quieted them, probably by giving them money. In 878 there was a great invasion. Alfred established himself at Athelney, and a few weeks later fought and won the battle of Ethandun. The Danish king, Guthrum, was baptized and the peace of Wedmore followed. For the next 15 years there was comparative peace. In 893 the Danes, who had been driven out of Germany by Arnulf, made another descent on England, which lasted four more years before the Danes were driven out.

ALGER, RUSSELL ALEXANDER (1836-1907). American soldier and politician; born in Lafayette, Ohio; served through the Civil War and rose to the rank of major general; governor of Michigan (1885-1886); commander-in-chief of the G. A. R. (1889); secretary of war in McKinley's Cabinet (1897-1899) and as such he met vigorous criticism for conditions during the Spanish-American War; United States senator (1902-1907).

ALI IBN ABU TALIB (about 600-661). Fourth caliph, cousin and son-in-law of Mohammed, and one of his first converts. He succeeded to the caliphate

on the murder of Othman (656). His reign was stormy and full of wars. He was opposed by Ayeshah the widow of Mohammed, and Muawwiyah, both of whom he overcame. He was murdered at Kufa. His followers formed the sect of the Shiites, which now numbers over 15,000,000. They are strong in Persia.

AMADEUS I. (1845-1890). Duke of Aosta and king of Spain (1870-1873). Son of Victor Emmanuel of Italy; elected by the Cortes king of Spain (1870); attacked by assassins (1872); abdicated voluntarily (1873); a republic with Figueras as provisional president was proclaimed.

AMASIS I. An Egyptian king of the XVIII. dynasty and first Pharaoh of that line. He reigned about 1600 B. C. He drove out the Hyksos or Shepherd kings from Egypt and made Phœnicia and Palestine tributary to him.

AMASIS II. The fifth Pharaoh of the XXVI. dynasty. He usurped the throne from Apries about 570 B. C. He fought against Nebuchadnezzar and skillfully warded off the attacks of Persia. He showed himself friendly to the Greeks, whom he employed as soldiers. He died in 526 B. C.

AMENEMHAT. The name of four kings of Egypt of the XII. dynasty. **AMENEMHAT I.** (reigned about 2380-2371 B. C.). **AMENEMHAT II.** (reigned 35 years beginning about 2066 B. C.). **AMENEMHAT III.** (2221-2179 B. C.). **AMENEMHAT IV.** (reigned for 9 years from about 1941 B. C.).

AMENOPHIS. The name of four Pharaohs of the XVIII. dynasty. **AMENOPHIS I.** (reigned for 10 years from about 1570 B. C.). **AMENOPHIS II.** (reigned for 25 years from about 1450 B. C.). **AMENOPHIS III.** (reigned for 36 years from about 1410 B. C.). **AMENOPHIS IV.** (reigned for 18 years from about 1375 B. C.).

AMES, FISHER (1758-1808). American orator and statesman; was graduated from Harvard at 16; at 31 (1789) elected to Congress, where he served for eight years.

AMPHICTYONIC COUNCIL. A religious congress formed by two representatives from each tribe of ancient Greece. It met in the spring and autumn at both Delphi and Thermopylae. Its power declined in the third century B. C. It had especial care of the temple of Apollo at Delphi, with its treasures, and directed other religious affairs and the Pythian games.

AMURATH or **MURAD I.** (1319-1389). Sultan of the Ottoman Turks (1359-1389). Son and successor of Orkhan. Invaded Europe, defeating Christians everywhere; took Adrianople (1361) and made it his capital; crushed Servia (1389) in the Battle of Kossovo. Amurath was killed by a wounded Servian noble when he was surveying the field of battle and victory. Succeeded by Bajazet I.

AMURATH or **MURAD II.** (1401-1451). Tenth sultan of the Turks (1421-1451). Son and successor of Mohammed I.; took Salonica from Venice (1430); defeated several times by Hunyadi, the Hungarian patriot; overwhelmed the Hungarians at Varna (1444), where Ladislas, king of Hungary and Poland, fell; defeated Hunyadi at Kossovo (1448). Succeeded by his son, Mohammed II., the conqueror of Constantinople.

AMURATH or **MURAD IV.** (1611-1640). Sultan of Turkey (1623-1640). "The Turkish Nero." Took Bagdad from Persia (1638) and slaughtered 30,000 of the people. Noted for cruelty and tyranny.

ANCUS MARTIUS (? -614 B. C.). Fourth king of Rome (638-614). Founded Ostia at the mouth of the Tiber; built the first prison in the city of Rome, still in existence near the Forum.

ANDRASSY (*on'drah-she*) **GYULA, COUNT** (1823-1890). Hungarian statesman. Advocated the popular cause in the revolution of 1848; exile in France and England (1849-1857); member of the Diet (1861); vice-president (1865-1866); prime minister of Hungary (1867); minister of foreign affairs of Austria-Hungary (1871); chief representative of Austria-Hungary at Berlin Congress (1878).

ANDRONICUS. The name of four Byzantine emperors. **ANDRONICUS I.** (1110-1185). His life was full of trials and troubles and he was torn to pieces by an infuriated mob in Constantinople. The last of the Comneni. **ANDRONICUS II.** (1260-1332). Son of Michael Palaeologus. A weak ruler (1282-1328). Driven from his throne. **ANDRONICUS III.** (1296-1340). A weak ruler. **ANDRONICUS IV.** Emperor in 1377. Obtained the throne in conspiracy against his father, John Palaeologus. Compelled to abdicate (1378).

ANDROS, SIR EDMUND (1637-1714). In 1674 he was made British colonial governor of New York. In 1686 he was made governor of New England. He carried on an administration of tyranny which lasted for three years; declared all marriages unlawful unless celebrated by Episcopal clergymen; levied exorbitant taxes, etc., until imprisoned by the people of Boston in 1689, and sent to England; afterwards made governor of Virginia and then of Guernsey.

ANNAPOLIS CONVENTION. Held in Annapolis, Md., September 11, 1786, to consider intercolonial commerce and changes in the Articles of Federation. It was attended by commissioners from Virginia, Delaware, Pennsylvania, New Jersey, and New York; although the other states had chosen commissioners, they did not attend. Practically all that was done was a recommendation which led to the Constitutional Convention of 1787.

ANNE (1665-1714). Queen of Great Britain and Ireland, last of the Stuarts. Second daughter of James II. and Anne Hyde. Married Prince George of Denmark. Lady Churchill (Duchess of Marlborough) gained an ascendency over her, as did, later, Mrs. Masham. She was succeeded by George I.

ANNE OF AUSTRIA (1601-1666). Daughter of Philip III. of Spain and wife of Louis XIII. of France. Mother of Louis XIV. Though neglected and cruelly treated by her husband, she became regent on his death (1643). Cardinal Mazarin ruled well for her and prepared a great kingdom for Louis XIV.

ANTALCIDAS. Great Spartan statesman; son of Leon. Sent by his government to Tiribazus, the Persian satrap at Sardis (393 B. C.), to break up the understanding between Athens and Persia. He succeeded, but agreed that Sparta should recognize Persian supremacy over the Greek cities of Asia Minor. This displeased the Persian king, Artaxerxes, and Tiribazus was recalled; to be restored (388 B. C.). Encouraged by this fact Antalcidas was sent again as a Spartan admiral to treat again with the Persian court; received an interview and carried his point; thus breaking the blockade of the Athenians and shutting them out from the Aegean Sea. He compelled the resultant peace known as the "Peace of Antalcidas," its final ratification taking place at Sparta (386 B. C.). Persian support was held until after the battle of Leuctra, when he lost favor and is said to have starved himself to death in disappointment.

ANTIOCHUS I. King of Syria (about 280-261 B. C.). Son and successor of Seleucus I. He gained a decisive victory over the Gauls who invaded Asia Minor in 275 B. C. He had difficulty in maintaining the integrity of his vast empire and had frequent occasions for defense. He declared war against Ptolemy II., Philadelphus, but it was indecisive.

ANTIOCHUS III., THE GREAT. King of Syria (223-187 B. C.). Son and successor of Seleucus II. He made war on Ptolemy IV. of Egypt; quelled a rebellion at home; extended his empire to the east; made war with Philip of Macedon, as an ally, upon Ptolemy V. of Egypt; took some of his territory, but was forced by Rome to return it; made war upon Greece; was defeated at Thermopylae in 191 B. C., and again at Magnesia in 190 B. C.; after which he was forced to give up a part of his territory in Asia Minor and to pay a tribute of 15,000 talents. To get this vast sum he pillaged a temple, and was murdered in 187 B. C.

ANTIOCHUS IV., EPIPHANES. King of Syria (175-164 B. C.). Son of Antiochus III. Succeeded his brother, Seleucus IV. In 188 B. C. he was sent to Rome as a hostage; exchanged for the son of Seleucus (176 B. C.); became king next year. Recovered Palestine, sacked Jerusalem, plundered the Temple; conquered nearly all of Egypt until ordered by the Romans to desist (168 B. C.).

ANTONINUS, MARCUS AURELIUS (121-180). A Roman emperor renowned for wisdom and virtue (161-180). Son-in-law of Antoninus Pius, whom he succeeded. Several successful wars kept him away from Rome, during which he commanded the respect of his soldiers by his simple life. The only blot on his name was allowing the persecution of Christians.

ANTONINUS PIUS (86-161). A famous Roman emperor (138-161). Consul in 120; adopted by the

emperor Hadrian (138); emperor the same year; his reign was peaceful and happy; persecution of Christians was greatly lessened; conducted a campaign in Britain and built a wall from the Forth to the Clyde.

ANTONIUS, MARCUS (83-30 B. C.). Known as Mark Antony. A Roman triumvir. He fought under Gabinius in Palestine and Egypt, and with Caesar in Gaul. Thence he went to Rome in 50 B. C. to advance the interests of Caesar. He was elected a tribune in that year, but was expelled the next for his zeal in Caesar's interests. He fled to Caesar, who on the outbreak of the war with Pompey, made Antonius commander of the army in Italy. He commanded the left wing of Caesar's army at the battle of Pharsalia, and, during Caesar's absence in Africa, governed Italy. He was made consul in 44 B. C. After the assassination of Caesar in that year, he compelled the conspirators to leave Rome. Cicero denounced him, and Octavianus now appeared as a rival. Antony fled to the camp of Lepidus in Gaul, and with the army of Lepidus and his own scattered forces marched on Rome. Octavianus made an alliance with him and formed with Lepidus the second triumvirate. Then began the slaughter of Roman citizens, including Cicero. Appian says that 300 senators and 2,000 knights were assassinated. Antony and Octavianus then went to Macedonia and defeated the forces of Brutus and Cassius at Philippi in 42 B. C. Antony went to Athens, thence to Egypt to contend with Cleopatra, who captivated him by her beauty. A dispute over the division of the empire caused a new arrangement. Antony took the East, Octavianus the West, and Lepidus, Africa. Antony returned to Egypt and Octavianus incited the Romans against him. He was deprived of his power and war was declared on Cleopatra. A naval engagement took place at Actium in 31 B. C., where Antony and Cleopatra were completely defeated. Antony returned to Egypt and Octavianus followed him. Antony was told falsely that Cleopatra was dead, and he committed suicide in 30 B. C.

APRIES. An Egyptian king of the XXVI. dynasty (589-570 B. C.). He is the Pharaoh-hophra of the Bible. He helped the Jews in their resistance against Babylonia, but could not prevent the fall of Jerusalem. His throne was usurped by Amasis II., who took advantage of a revolt of the troops of Apries.

ARABI PASHA (1837-). Leader of the national party in Egypt in 1882. From a private he rose to be colonel in the Egyptian army; organized a rebellion under the rally of "Egypt for the Egyptians"; became minister of war in 1882; set aside the French-English control in finances of Egypt. England intervened; war was declared; Alexandria bombarded (July 11 and 12, 1882); Arabi was defeated at Tel-el-Kebir (September 13, 1882). He surrendered next day; sentenced to life exile in Ceylon; pardoned in 1900, and returned to Egypt.

ARCADIUS (about 377-408). First emperor of the East (395-408). He was the eldest son of the emperor Theodosius, after whose death the empire was divided into the West and East. He lived a life of luxury and indifference, the affairs being in the hands of Rufinus, the Gaul; Eutropius, the eunuch; and Eudoxia, the wife of Arcadius. The only really great man of the times was Chrysostom.

ARCHON. The highest magistrate in Athens and in other Greek cities. The office was erected after the death of the last king, Codrus, about 1069 B. C. There were nine archons at Athens with a division of duties. At first the office was held for life, later for 10 years beginning 725 B. C. In 683 B. C. it was limited to one year, and in 457 B. C. any citizen was considered eligible for election.

AREOPAGUS. The famous senate established at Athens in very early times. It met on a bare, rocky hill, 350 feet high, west of the Acropolis, in the open air. It had remarkable powers until the reforms of Ephialtes and Pericles, when its power was curtailed, though it was still the most venerated body in Athens.

ARGALL, SIR SAMUEL (about 1580-1626). Deputy governor of the Virginia Colony (1617); captain of a fleet which attacked the Algerine pirates in the Mediterranean (1620); admiral of an Anglo-Dutch fleet against the Spaniards, taking prizes of over half a million dollars (1625); commander of the flagship in Cecil's expedition against the Spanish.

ARISTIDES, called **THE JUST** (550-468 B. C.). Athenian patriot, noted for an unswerving integrity, a trait that led to his banishment in 483 B. C.; was next highest in command at the battle of Marathon, after which he was made archon of Athens; recalled from exile to oppose the Persians under Xerxes, he commanded at the battles of Salamis and Plataea. He exerted himself to save from banishment his rival, Themistocles, and died so poor that he was buried at public cost.

ARTAXERXES. The name of three ancient Persian kings. **ARTAXERXES I., LONGIMANUS.** Son of Xerxes and ruler of Persia (465-424 B. C.). Suppressed an Egyptian revolt (455 B. C.); defeated by the Greeks at Cyprus (449 B. C.). The Peloponnesian War of Greece broke out in his reign (431 B. C.). **ARTAXERXES II., MNEMON** or **GOOD MEMORY.** Grandson of Artaxerxes I. and king of Persia (405-362 B. C.). His brother, Cyrus the Younger, revolted against him and was defeated at the battle of Cunaxa (401 B. C.). **ARTAXERXES III., OCHUS.** Son and successor of Artaxerxes II. (362-338 B. C.). A contemporary of Philip II. of Macedon; subdued Egypt (350 B. C.). Poisoned by Bagoas, an influential favorite.

ARTEMISIA (about 350 B. C.). A queen of Caria; wife and successor of Mausolus. She is noted for her love for her husband, her extraordinary grief at his death, and the splendid monument she built to his memory; hence the word "mausoleum." Portions of some of the fine sculptures which adorned this tomb were discovered in 1857 and are now in the British Museum.

ASHBURTON, ALEXANDER BARING, BARON (1774-1848). For many years the head of the great Baring banking house. He began life as a Whig. In 1835 he was raised to the peerage; in 1842 he was appointed by Sir Robert Peel as special commissioner to negotiate the Ashburton Treaty between Great Britain and the United States, concerning the disputed Maine territory, which threatened to involve the two countries in a war; in 1798 he married the daughter of William Bingham of Philadelphia. He was a liberal patron of the fine arts.

ASQUITH, RT. HON. HERBERT HENRY (1852-). Prime Minister of England and First Lord of the Treasury since 1898. Member of Parliament for East Fife since 1886. Scholar and fellow of Balliol College, Oxford; Craven University scholar; barrister of Lincoln's Inn (1876); queen's counsel (1890); secretary of state for home department (1892-(1895); chancellor of Exchequer (1905-1908); hon. D.C.L. Oxford; hon. LL.D. Edinburgh and Glasgow.

ATHELSTAN (895-940). Grandson of Alfred the Great. The first ruler to take the title of King of England. He was crowned in 925. Athelstan seized Northumbria, and a league of Scots, Welsh, and English was formed against him. This was followed by a more formidable revolt, which was crushed at the battle of Brunanburh (937). He made good laws and improved the condition of his people.

ATTILA. King of the Huns; by Christians called "the Scourge of God." Became king (434), sharing the vast empire in Asia and Europe with his brother, whom he killed (444 or 445); devastated the coasts of the Black and Mediterranean seas. Defeated Theodosius thrice; took 70 cities from Rome; vast possessions south of the Danube paid him tribute; Aetius and Theodoric defeated him in Gaul; the Romans and allies defeated him at Chalons, he losing 300,000 men; he invaded Italy, and Rome was saved only by the intervention of Pope Leo I. When planning a second invasion he died of dysentery (453).

AUGUSTUS (63 B. C.-14 A. D.). At birth his name was Gaius Octavius; when adopted by Julius Caesar, he was called Gaius Julius Caesar Octavianus; by decree of the Senate in 27 B. C. he was named Augustus. The first Roman emperor and grandnephew of Caesar, who adopted him. When Caesar was assassinated in 44 B. C., Octavianus returned to Rome from his studies abroad and found Antony in control. War ensued, and Antony was beaten and fled across the Alps. Supported by Cicero and others Octavianus rose to such power that on the return of Antony he formed the second triumvirate with him and Lepidus. He took Italy, Africa, and Sicily; Antonius took Gaul; and Lepidus, Spain. After the battle of Philippi, a new division was made. Octavianus obtained Italy, and Lepidus, Africa. While Antony was in the power of Cleopatra, Octavianus was building himself up, and war was finally declared against Cleopatra. Octavianus was victorious at Actium, and became sole ruler of the Roman world. He declared universal peace in 29 B. C. In his eleventh consulship (23 B. C.) the Senate made him tribune for life. On the death of Lepidus (12 B. C.) he was made Pontifex Maximus and was supreme ruler of Rome. His reforms were beneficent

and he beautified the city of Rome. His was the Augustan age of literature.

AURELIAN (LUCIUS DOMITIUS AURELIANUS) (about 212-275). Roman emperor (270-275). Successor of Claudius. Captured Palmyra, the capital of Queen Zenobia. Aurelian was killed by his own soldiers, near Byzantium, while on his way to Persia. He was called by the Senate "The Restorer of the Roman Empire."

AURUNGZEBE (1618-1707). The last great emperor of the Mogul dynasty in India. Murdered two of his brothers, imprisoned his father, Shah Jehan (1657), and made himself ruler. His reign was brilliant, and his kingdom covered nearly all of Hindustan.

BABER (1483-1530). Descendant of Tamerlane, grandfather of the great Akbar; founded the Mogul Empire in Hindustan in 1527. His dynasty lasted for three centuries. He invaded India several times, finally in 1525 defeating the sultan of the Afghans and becoming master of the country. He was an able sovereign and soldier, made many improvements, and left a valuable autobiography.

BAEZ (*bah'eth*), **BUENAVENTURA** (1820-1884). President for four terms of the Republic of Santo Domingo (1849-1853); driven out by Santa Anna; president from 1856 to 1858; driven out again; president from 1865 to 1866; again exiled (1867). In 1869 the United States Senate refused to ratify the treaty which he and President Grant drew up for annexation of Santo Domingo. He was the son of a wealthy mulatto.

BAGOT, SIR CHARLES (1781-1843). Governor general of Canada (1842-1843); minister to the United States (1819); ambassador to Russia (1820); to Holland (1824); special ambassador to Austria (1834).

BAHADUR SHAH (about 1767-1862). The seventeenth and last Great Mogul of the dynasty of Tamerlane. At 90 years of age he undertook to restore the empire, took refuge in the tomb of his ancestors in Delhi, was captured by the English, and banished to Rangoon.

BAILLY, JEAN SYLVAIN (1736-1793). A French astronomer; mayor of Paris at the beginning of the French Revolution. Because he ordered a violent mob to disperse he became unpopular and later he resigned. On the triumph of the Jacobins, in 1793, he was arrested; was one of the witnesses at the trial of Marie Antoinette, and was soon after executed under circumstances of extreme cruelty. He was the author of many scientific works and a book of memoirs of the Revolution.

BAJAZET (*baj-a-zet'*) or **BAYAZID I.** (1347-1403). Sultan of the Ottomans; succeeded his father, Amurath I., in 1389. His vast energy and the swiftness of his movements gained for him the surname "Ilderim" or "lightning"; conquered Asia Minor, considerable of Turkey in Europe, and carried hi campaign into Bulgaria, Hungary, Wallachia, and part of Greece; was first in his family to assume the title of sultan. He was desirous of taking Constantinople and defeated a league of the Christian powers commanded by Sigismund, King of Hungary, on the banks of the Danube at Nicopolis, in September, 1395. He is said to have made the boast that his horse would eat on the altar of St. Peter's at Rome. In 1402 he was defeated and made prisoner by Tamerlane just as he was preparing to attack Constantinople. Shut up in an iron cage, he was carried in the train of his conqueror, and about nine months later died in the Tatar camp in Pisidia.

BALDWIN I. (1058-1118). King of Jerusalem; succeeded his elder brother, Godfrey of Bouillon, in 1100; obtained many victories over the Turks, Persians, and Saracens; made himself master of all the important towns on the coast of Syria; distinguished himself in the First Crusade. He was buried on Mount Calvary.

BALDWIN I. (1171-1206). First Latin emperor of Constantinople. Son of Baldwin VIII., Count of Flanders and Hainault. In 1195 he became Count of Flanders. In 1201 he placed his brother in command and went to the Fourth Crusade. On the way he, with others, assisted the Venetians at Zara against the king of Hungary. While there young Alexius, son of Isaac II., Byzantine emperor, asked the aid of the Crusaders to punish his uncle, Alexius Angelus, who had deposed and blinded his father, Isaac II. The latter was restored but Alexius had difficulty in keeping the promises made to the Crusaders and the Venetians. They rose against him and slew him; then took Constantinople and seized the throne. Baldwin was declared emperor in 1204. In the division, Venice took most of the empire, leaving only Constantinople and Thrace to Baldwin. Being unable to cope with the situation he was defeated and taken prisoner in a rebellion of the Greeks and died mysteriously in 1205. He was succeeded by his brother Henry.

BALDWIN II. Seventh Latin emperor of Constantinople (1228-1261). The son of Pierre de Courtenay and nephew of Baldwin I. His reign was disastrous. He spent much of his time in the West seeking aid for his capital. He sold to St. Louis of France some of the most sacred relics of Constantinople. In 1261 his capital was taken by one of the generals of Michael Palaeologus, ruler of Nicaea, and Baldwin fled to Italy. He was the last of the Latin emperors, and was succeeded by the Nicaean emperors.

BALFOUR, ARTHUR JAMES (1848-). A British statesman. In 1874 he entered Parliament, first representing Hertford, and in 1886 the east division of Manchester; president of the local government board (1885); secretary for Scotland (1886); secretary for Ireland (1887-1891); lord rector of Glasgow University (1890); in 1891, chancellor of Edinburgh University, and first lord of the treasury, then leader of the House of Commons. In 1895 he again became first lord of the treasury and leader of the House. He passed the crimes and law acts, secured a free grant for railways, and created the Congested Districts Board; became prime minister July 12, 1902, upon the resignation of Lord Salisbury, but failed to secure a majority in the general election of 1905.

BALMACE'DA, JOSE MANUEL (1838-1891). A Chilian statesman. Early in life he distinguished himself as an orator. In Congress he was foremost advocate of the separation of church and state; in 1884, while premier, he introduced civil marriage; in 1886 he was elected president. He was accused of cruelty and dishonesty in office, and through the efforts of Señor Fuentes, who wished to supplant him and his supporters, he was overthrown (1891) and committed suicide September 18 of same year.

BANKS, NATHANIEL PRENTISS (1816-1894). An American soldier and legislator; born in Waltham, Mass. He began his career as a factory worker, and from that his nickname of the "bobbin boy" clung to him all his life. He studied law and became a member of the state and then the national legislature. In 1856 he was speaker of the House, and was made governor of Massachusetts in 1857. He was a commander in the army in the Civil War, first on the Potomac, then at New Orleans, then at Red River. In 1864 he re-entered Congress, where he remained until 1890. In 1891 he was granted by Congress a pension of $1,200 annually.

BARRETT, JOHN (1866-). Statesman, born in Grafton, Vt. Minister to Siam (1894-1898). Special diplomatic and commercial envoy to Japan, Siam, Korea, Siberia, and India; American plenipotentiary to International Confederation of American Republics at Mexico (1901-1902); Minister to Argentina (1903-1904); Minister to Panama (1904-1905); to Colombia (1905-1906).

BATTA, JOSE (1816-1872). Peruvian soldier and statesman. President of Peru (1868-1872). Led the insurrection which drove Prado into exile (1868). Shot by order of General Gutierrez, minister of war, in a military mutiny.

BATU KHAN (? -about 1255). Leader of the Mongols or Tatars in their invasion of Europe in the thirteenth century. Grandson of Genghis Khan; crossed the Volga (1235); took Riazan (1237); Moscow, Vladimir, and Kiev (1240); perpetrated horrible massacres and atrocities; invaded Hungary (1241); conquered the Siberian Duke and Teutonic Knights at Wahlstatt. His army was named the Golden Horde from the richly embroidered tent of the Khan. His khanate was Kipchak, from the Jaxartes in Turkestan to the limits of Russia.

BEACONSFIELD, BENJAMIN DISRAELI, EARL OF (1804-1881). An English statesman and author; born in London. The crown of his ambition was to become premier. He attained that honor in 1868 at the resignation of Lord Derby, but at the general election he was not returned to power; again elected prime minister in 1874 with a strong majority, he retained the office for six years. During this period

he was raised to the peerage. Parliament was abruptly dissolved in 1880, and the new Parliament had an overwhelming liberal majority; Beaconsfield remained leader of the conservative party. *Endymion*, published shortly after this time, is probably the best known of his literary works.

BEDFORD, JOHN PLANTAGENET, DUKE OF (1390-1435). Brother of King Henry V.; made constable of England in 1403; created Duke of Bedford in 1415. Henry V. wanted him made regent of France, but by act of Parliament he was made protector of the kingdom. His claim for Henry VI., as king of France upon the death of Charles VI., in 1422, involved the two countries in war for some years, but the tide turned against him at the siege of Orléans, which was raised by Joan of Arc. Disappointment hastened his death. Bedford was a patron of literature.

BELL, JOHN (1797-1869). Actively engaged in American politics until 1860, when he was nominated for the presidency by the Constitutional Union Party; member of Congress (1827-1841); speaker of the House in 1834; secretary of war under Harrison in 1841, and was a member of the United States Senate (1847-1859); joined the Confederacy and advised his state to withdraw from the Union in 1861.

BENTON, THOMAS HART (1782-1858). An American statesman and soldier. He was born near Hillsboro, N. C.; made his home in Tennessee. There he studied law and was made a member of the Legislature. In the War of 1812 he raised a regiment of volunteers. He also served on General Jackson's staff. His St. Louis newspaper, which he started after the war, entangled him in several duels. After Missouri was admitted as a state he was chosen United States senator in 1820, and during 30 years of continuous service took a prominent part in public affairs.

BERKELEY, SIR WILLIAM (1610-1677). Colonial governor of Virginia (1641-1650). He was superseded by Cromwell's appointee, Richard Bennet, in 1651; remained in the colony; chosen governor by the General Assembly in 1660. Lost favor with the people and suffered by Bacon's rebellion; was forced to resign in 1660.

BERNADOTTE, JEAN BAPTISTE JULES (1764-1844). French general and afterwards king of Sweden; son of a lawyer; educated for the law, but abandoned his studies for the life of a soldier and politician. He was married in 1798 to Mademoiselle Clary, a sister-in-law to Joseph Bonaparte. A year later he became for a short time minister of war, and when the empire was established was exalted to the office of marshal of France, with the title of Prince of Ponte Corvo. At the death of Prince of Holstein-Augustenburg he was offered the heir apparency to the Swedish crown. Bernadotte accepted with Napoleon's sanction, went to Sweden, abjured Catholicism, and took the title of Prince Charles John. From that time he devoted all his energies to his adopted country, formed a secret alliance with Russia in 1812, and in 1813 took command of the combined armies of northern Germany against France; at the battle of Leipzig contributed largely to the victory of the allied powers. At the death of Charles XIII. he became king of Sweden under the title of Charles XIV. Never during a half century before his accession had Sweden enjoyed the peace and prosperity in which he left her in the hands of his son, Oscar. He fostered agriculture, encouraged commerce, and completed many important public works.

BISMARCK, KARL OTTO EDUARD LEOPOLD, PRINCE VON (1815-1898). Born at Schönhausen. He early entered political life, being always a strong imperialist. The idea of Germany's freedom from foreign control and union under the crown of Prussia originated with Bismarck, but his sincerity and judgment were doubted at first. In 1862 he was made minister of foreign affairs. In 1864 he won general approbation by the conquest and annexation of Schleswig. Next he brought Austria to terms in 1866, in consequence of which his long cherished plan was made possible, and the establishment of a German confederation with Prussia at its head made him the idol of his compatriots. Exasperated by his treatment, Napoleon III. declared war and advanced upon Berlin. To the surprise of all Europe, the French were ignominiously driven back. The threatening powers of France and Austria helpless, the German Empire restored under a Hohenzollern king, Bismarck was installed as chancellor. He reformed the coinage, increased the army, established protection, and repressed socialism. But no deed of his equaled the stupendous feat of reorganizing and building up the empire. After numerous quarrels with William II., he resigned (March 20, 1890). He was the greatest European statesman of the nineteenth century.

BLAINE, JAMES GILLESPIE (1830-1893). An American statesman; born in Brownsville, Penn.; one of the founders of the Republican Party. In 1862 he became a member of the House of Representatives. In 1869 he took the chair as speaker of the House, which office he retained for six years. From 1876 to 1881 he was a member of the Senate. He was secretary of state under Garfield (1880 to 1884). In 1884 he was the Republican candidate for the presidency, but was defeated by Grover Cleveland. He wrote *Twenty Years of Congress*, a work of lasting value to history. Besides this, his best known literary work, we have many others of his writings and speeches on the most important public questions of his day. He removed to Augusta, Maine (1854), and engaged in journalism.

BLAKE, EDWARD (1833-). A Canadian statesman; elected to the Dominion Parliament (1867) and became the leader of the Liberal opposition; premier of Ontario (1871); privy councillor (1874); minister of justice (1875); leader of the Liberal Party (1880); elected to the British Parliament from South Longford, Ireland (1892); member of judicial committee of the Privy Council (1896).

BLAND, RICHARD PARKS (1835-1899). American legislator; born near Hartford, Ky.; practised law in Missouri, California, and Utah, and was interested for some time in mining. From 1873 to 1895 he was a member of Congress, and again from 1897 till his death. In 1896 he was one of the foremost candidates for the presidential nomination in the Democratic National Convention; was noted as the leader of the free silver movement in national House of Representatives. He was the author of the Bland Silver Bill, which was introduced by him in 1878. This bill provided for the coinage of not more than $4,000,000 nor less than $2,000,000 worth of silver bullion a month. The bill was passed in spite of the veto of President Hayes and remained in force until 1890, when it was nullified by the passage of the Sherman act.

BOABDIL (*bo-ab-deel'*) (?- 1536). The last Moorish king of Granada. He dethroned his father, Abu-l-hassan, in 1481, and two years after that was overthrown and taken prisoner by the Castilians in the vicinity of Lucena. He bought his freedom and returned to Granada, where he struggled with his father and with his warrior uncle, El-Zaghal, for the throne. He was expelled from Granada for the last time in 1491 by Ferdinand of Castile and Aragon, and after that lived in Africa, where he was killed in battle in the service of the king of Fez.

BOADICEA, QUEEN OF THE ICENI. A British queen, who, in 60, rose in rebellion against the Romans. Prasutagus, her husband, died in 60 and left his wealth to the Roman emperor and to his own two daughters, thus hoping to protect his kingdom from the rapacity of the Roman emperor; but the plan failed, and the kingdom was plundered and the queen and her daughters were insulted. Boadicea was at first victorious, destroyed over 70,000 Romans, and captured several towns. In a battle the Romans, led by Suetonius Paulinus, were completely victorious, and over 80,000 Britons were slain in 62 Boadicea, in despair, committed suicide.

BONAPARTE, CHARLES LOUIS NAPOLEON, NAPOLEON III. (1808-1873). French emperor, son of Louis Bonaparte; born in Paris. Failed completely in an attempt to take Strassburg (1836); imprisoned in Ham for attempt to bring about an uprising in his favor; escaped (1846) and made his way to England, but returned (1848) and was elected president; re-elected for 10 years in 1851. He married Eugénie, Countess de Montijo, in 1853. During the Franco-German War the emperor took the field and, after his capture at Sedan, was deposed and spent the remainder of his life at Chiselhurst, England.

BONAPARTE, JOSEPH (1768-1844). Eldest brother of Napoleon; born at Corte, in Corsica; elected a member of the Council of Five Hundred (1797); was appointed commander-in-chief of the army of Naples (1804); ruler of the Two Sicilies (1805); king of Naples (1806); transferred to the throne of Spain (1808), but, being unable to suppress the insurgents there, returned to France after the defeat of the French at Vittoria (1813). Joseph

came to the United States after the battle of Waterloo, where for many years he engaged in agriculture at Bordentown, N. J. He returned to Europe (1832), and in 1841 went to Florence, where he died.

BONAPARTE, LOUIS (1778-1846). Third brother of Napoleon; was educated at Châlons; held various positions and afterward became king of Holland (1806), though he was really no more than a governor; returned to Paris (1814), Holland having been incorporated with the French Empire (1810). He had married Hortense Beauharnais (1802), but the union was an unhappy one. Having spent some years in Rome, he retired to Florence (1826).

BONAPARTE, NAPOLEON, NAPOLEON I. (1769-1821). The most consummate master of generalship of modern times; born at Ajaccio, Corsica; attended military school (1779-1784) and at the age of 16 began his military career as sub-lieutenant in the army. At 23 he had advanced to the rank of captain of artillery. The following year he was commandant of artillery, in which position he distinguished himself at the reduction of Toulon, held by the Spanish and English. This success won him a commission as brigadier general. The army was remodeled in the summer of 1794, and he was suspended and put on half pay, the authorities giving as a reason his youth, considering 25 too young for a commander of artillery. However, when an insurrection led by the National Guard broke out in the fall, Napoleon was recalled, and won a brilliant victory after a short but bloody engagement. This made him practically commander-in-chief of the army of the interior. In 1796 he held the command-in-chief of the army of Italy. That same year he married Josephine de Beauharnais. In his first campaign Napoleon displayed a genius for generalship, gaining four victories in a few weeks, conquering Lombardy and capturing Mantua, and almost annihilating three Austrian armies. He then turned his efforts against the pope and compelled him to pay 15,000,000 francs and give up many valuable works of art. After defeating another army from Austria, Napoleon finally concluded a treaty with that country making his success secure. In 1798 he took command of a powerful expedition sent into Egypt for the purpose of striking at the power of Great Britain. There he gained important victories over the Mamelukes and Turkish auxiliaries. Returning to France he overthrew the Directory and was elected first consul. He gained the great victory of Marengo in 1800. In 1801 he established public order, re-established the Catholic religion, and in 1802 made peace with England. He became emperor in 1804 and opened war with England, Russia, Sweden, and Prussia. In 1809 he was divorced from Josephine and a year later married Maria Louisa, daughter of the emperor of Austria. The tide turned against him in 1812, when in the famous Russian campaign he is said to have lost 380,000 men. In 1813 he made a disastrous retreat at Leipzig. In 1814 the combined allies entered Paris, forced him to abdicate, and sent him to Elba, where although held as a prisoner he was granted the sovereignty of that island. However, he returned to France and succeeded in exciting such unbounded enthusiasm that he was able to raise an army of 125,000. But his insatiable ambition had finally overreached itself; and his overwhelming defeat at the hands of the duke of Wellington at Waterloo put an end to his career (1815); sentenced by the allies to banishment, he died a state prisoner on the island of St. Helena. The life of Napoleon presents probably the most noteworthy example in history of military genius guided by a great intellect, spurred by a powerful, indomitable will, and entirely unrestrained by any principles of honor. He was preeminently great in all matters pertaining to government and the art of war. His greatness lies not only in the inception of his colossal schemes, but in the Titanic force he threw into their accomplishment. The man who curbed the Revolution and refashioned the life of France, who rolled back the West toward the East in the greatest movement since the Crusades, and who, by the splendor of his daring, drew the admiration of all and won the hearts of millions, must stand for all time a majestic figure among the great immortals.

BONETON, CHARLES ATHOLL (1841-1899). A Canadian soldier and legislator. In the British army (1858-1868); captured and sentenced to death by the rebels in the Louis Riel rebellion (1870); in the second rebellion (1885) organized Boneton's scouts; appointed Dominion senator (1889); a Liberal.

BOUTWELL, GEORGE SEWALL (1818-1905). American politician and Cabinet officer; born in Brookline, Mass. Leader of the Democratic Party in his state; governor (1851) and re-elected; left the Democratic Party on the repeal of the Missouri Compromise and helped to form the Republican Party (1854); organized the new Department of Internal Revenue (1862); elected to Congress (1863), and twice re-elected; one of the managers for the impeachment of President Johnson; secretary of the treasury (1869-1873); United States senator (1873).

BOWDOIN, JAMES (1727-1790). Governor of Massachusetts (1785); president of the Colonial Council (1775); president of the Massachusetts Constitutional Convention (1778); suppressed Shays's Rebellion; member of the convention that ratified the Federal Constitution (1789). The college in Maine is named for him.

BOWELL, HON. SIR MACKENZIE, K.C.M.G. (1823-). Canadian statesman; Dominion Parliament (1867-1892); minister of customs (1878-1891); minister of militia and defense (1892); minister of trade and commerce (1892-1894); premier (1894-1896); president of the Privy Council (1894-1896); created a knight (1895); leader of the Conservative opposition in the Senate (1896-1897). In 1897 he declared himself perfectly independent of all party leadership. The National Policy was developed and carried into operation during his term in Parliament.

BRADFORD, WILLIAM (1590-1657). An American author; second governor of the Plymouth colony and one of the first settlers of New England; born in Yorkshire, England. The famous compact drawn up on the Mayflower bears his name as one of the signers. He was governor of Plymouth from 1621 until his death, except for five years when he declined the office. He was trusted and honored by all who knew him, and his administration was remarkable for efficiency. His tact in dealing with the Indians deserves special mention. He died in Plymouth, Mass.

BRECKINRIDGE, JOHN CABELL (1821-1875) Vice-president of the United States when James Buchanan was president (1856-1860); born near Lexington, Ky. From 1851 to 1855 he occupied a seat in Congress. In 1860 he ran for the presidency against Lincoln. In 1861 he was in the national Senate; served in the Confederate army through the war; second in command under Early at Shenandoah (1864); secretary of war in the cabinet of Jefferson Davis (January to April, 1865); escaped to Europe; returned in 1868 and practised law.

BRIAN, surnamed **BOROIMHE** (926-1014). King of Ireland; a beloved Irish hero. He ruled for many years with vigor and justice. His reign was one of the most prosperous Ireland had ever seen, but he became involved in war with the king of Leinster, who revolted and asked the Danes to aid him in his uprising. Brian gained a brilliant victory over the combined forces at the battle of Clontarf (April 23, 1014), but was slain in the engagement.

BRIGHT, JOHN (1811-1889). British statesman; the greatest English orator of modern times. His father was a Quaker cotton spinner. He was one of the foremost members of the Anti-Corn Law League in 1839, and, associated with Cobden, was a champion of free trade. His influence upon the conduct of public affairs both in England and abroad is said to have been greater than that of any other man of his time. This was largely due to his great moral power, for his life was exemplary, and his sense of justice keen. He was a vigorous advocate of the northern cause in the American Civil War. In 1885 he and Gladstone disagreed on the question of Home Rule, which led to an open rupture between them.

BROWN, GEORGE (1818-1880). A Canadian statesman; member of Parliament (1852); formed the Brown-Dorion ministry (1858); resigned in three days; member of the Senate (1873); negotiated a commercial treaty with the United States (1874); shot by a discharged employee. Founded the Toronto *Globe* newspaper (1844).

BROWN, JOHN (1800-1859). One of the foremost American opponents of slavery. He bore a conspicuous part in the murderous feuds of the Kansas struggle, having moved to Ossawattomie of that state in 1855 from Torrington, Conn., where he was born. In 1858 he planned to liberate the slaves by seizing the arsenal at Harper's Ferry, Virginia. Having only 18 men he was, of course, soon overcome and captured by the regular troops. He was tried and executed at Charlestown, W. Va. His grave is at North Elba, N. Y. The Harper's Ferry incident, which occurred October 16, 1858, made the name of John Brown famous.

BRUCE, ROBERT (1274-1329). King of Scotland. He submitted for a time to Edward I. In 1299 a regency was appointed, Bruce and his rival, Comyn, at the head. For several years Bruce pretended loyalty to Edward, but in 1306 he murdered Comyn, and after several battles with the English, in some of which he was defeated, he won his cause, the freedom of Scotland, at the battle of Bannockburn (June 24, 1314), against Edward II.

BRUTUS, LUCIUS JUNIUS (flourished 500 B. C.). Roman patriot who overthrew the Tarquins, destroyed the monarchial and substituted the republican form of government in Rome. His character was that of the stern old Roman hero. His sons, detected in a conspiracy, were sentenced to death by him. He fell in battle against the sons of Tarquin.

BRUTUS, MARCUS JUNIUS (85-42 B. C.). A prominent Roman; one of the conspirators against Caesar. His father was slain by Pompey's orders, yet he supported Pompey rather than Caesar. Caesar, after the victory at Pharsalia, pardoned Brutus and made him governor of a part of Gaul. He was made pretor by Caesar in 44 B. C. While holding this office he entered into a conspiracy against Caesar. After the murder of Caesar, Brutus fled to Athens and became powerful in Macedonia. Cassius raised an army in Asia Minor and together they made a stand against Octavianus and Antony at Philippi. The wing commanded by Brutus was victorious over that of Octavianus; while Cassius was beaten back by Antony. Cassius killed himself in despair. When this was reported to Brutus, he took his own life.

BRYAN, WILLIAM JENNINGS (1860-). A prominent American political leader. His birthplace is Salem, Ill. In 1881 he was graduated from Illinois College, after which he studied law at Union College, Chicago. In 1887 he made his home in Lincoln, Nebraska, where he still resides. From 1891 to 1895 he was a member of Congress. In 1896 he was the Democratic candidate for the presidential chair against McKinley. He was the advocate of free and unlimited coinage of silver by the United States in the proportion of 16 to 1 without regard to the action of any other nation. The silver question, in fact, was the dominating feature of this campaign, in which Bryan was defeated. In the Spanish War he was colonel of a regiment of volunteers with headquarters in Florida. In 1900 he again came forward as presidential candidate for the Democratic party. Their platform in this campaign was opposition to trusts, anti-imperialism, and free silver. McKinley again defeated him. When he once more ran for the presidency in 1908, he was defeated by William H. Taft, the Republican candidate. Thus he has the unique distinction of having been three times defeated in the presidential campaign.

BRYCE, JAMES (1838-). An eminent English statesman and writer; a barrister; professor of law at Oxford (1870-1893); member of Gladstone's Cabinet (1886); again in 1892; fellow of the Royal Society; Liberal in politics; visited the United States in 1870, 1881, 1883; British ambassador to the United States (December, 1906).

BULYEA, GEORGE HEDLEY VICARS (1859-). Born at Gagetown, New Brunswick. Educated at grammar school and a graduate of University of New Brunswick (1378). Principal Sunbury Grammar School (1878-1882); came to Winnipeg (1882), to Qu'Appelle (1883); engaged in general business until accepting position of Territorial commissioner in Yukon Territory (1898); defeated as candidate for General Assembly from South Qu'Appelle (1891), but elected (1894, 1896, 1898, 1902). Provincial secretary and commissioner of public works in Northwest Territories. Now lieutenant governor of Alberta.

BUNSEN, CHRISTIAN KARL JOSIAS, CHEVALIER (1791-1860). A distinguished German diplomat, statesman, and writer; born in Korbach; was minister to Switzerland and England, and secretary of embassy at Rome for 12 years.

BUTLER, BENJAMIN FRANKLIN (1818-1893). An American politician and general; born in New Hampshire; was educated for the bar. In 1862 he was military governor of New Orleans, his administration being singularly efficient, the success with which he combated the scourge of yellow fever being specially noteworthy. In 1866 he became a Republican member of Congress, which position he held for several terms. In 1862 he was elected Democratic governor of Massachusetts, but was defeated the following year for the same office. He was the Greenback-Labor and the Anti-Monopolist candidate for the presidential chair in 1884, but was defeated.

CABAL. An unpopular English ministry (1667-1673) in the reign of Charles II., composed of Clifford, Arlington, Buckingham, Ashley, and Lauderdale, the initials of whose names spelled Cabal.

CACERES, ANDRES AVELINO (1836-). President of Peru (1886-1890); Peruvian minister to France and Britain (1891-1894); president of Peru (1894-1895); resigned under pressure and was succeeded by Pierola.

CAESAR, GAIUS JULIUS (100-44 B. C.). A Roman general, statesman, and writer. One of the most remarkable men of all time. He left Rome in 81 B. C. through fear of Sulla, but returned on his death in 78 B. C. After some study he joined Pompey. He held several minor offices in succession and with growing popularity. In 60 B. C. he was elected consul and succeeded in bringing together Pompey and Crassus and formed with them the first triumvirate in that year. In 58 B. C. he went to the provinces of Gaul, which the Senate gave to him, and for nine years conducted those brilliant campaigns upon which so much of his fame rests. He conquered the Helvetii, the Germans under Ariovistus, in 58 B. C.; the Belgi in 57 B. C.; and the Veneti in 56 B. C. In 55 B. C. Crassus went to the East, where he was slain in 53 B. C.; Pompey went to Spain; and Caesar's control of his provinces was extended for five years. He defeated Vercingetorix at Alesia in 52 B. C., and in 51 B. C. reduced the whole of the Aquitani. Pompey had returned from Spain and grew jealous of Caesar's fame, and induced the Senate to order Caesar to lay down his command. Caesar refused unless Pompey did likewise. The Senate would make no conditions and Caesar marched his army across the Rubicon river into Italy, thus defying the Senate. Pompey fled to Brundusium and Caesar followed. Pompey escaped to Greece and in three months Caesar was master of Italy. In the battle of Pharsalia, in 48 B. C., Pompey was defeated and fled to Egypt, where he was murdered. Caesar was made dictator for one year, consul for five years, and tribune for life. He went to Egypt; assisted Cleopatra successfully in the Alexandrine War; overthrew Pharnaces, son of Mithridates; thence to Africa and defeated Scipio and Cato in the battle of Thapsus (46 B.C.). In 46 B.C. he revised the calendar. In 45 B. C. he defeated Gneius and Sextus, sons of Pompey, in the battle of Munda. He was made dictator and prefect for life and consul for 10 years. He entered upon vast designs for the improvement of Rome, but was assassinated on the Ides (15th) of March, 44 B. C., by conspirators led by Brutus, Cassius, and others who were fearful of his growing power and that he might be made king.

CALHOUN, JOHN CALDWELL (1782-1850). An American statesman; born in Abbeville District, S. C.; was graduated from Yale (1804); admitted to the bar (1807); elected to Congress (1811); secretary of war (1817); vice-president (1825-1832); secretary of state (1844); returned to Senate (1845). He was an upholder of slavery, and champion of the rights of individual states against the central government.

CALIGULA, GAIUS CAESAR GERMANICUS (12-41). Third emperor of Rome (37-41). He first adopted a policy of reckless extravagance. In one year he spent the enormous wealth left by Tiberius of 720,000,000 sesterces, or about $28,000,000. He banished or murdered his relatives, excepting his uncle, Claudius, and his sister, Drusilla. He filled Rome with executions and scenes of torture. He declared himself a god and had temples erected to himself. A conspiracy was formed among his guards and he was assassinated in 41.

CALONNE, CHARLES ALEXANDRE DE (1734-1802). French minister of finance for Louis XVI. He tried to finance the nation on unstable principles, for which he was dismissed and exiled.

CALVERT, LEONARD (about 1606-1647). First colonial governor of Maryland (1634-1647); appointed by his brother, Cecil Calvert, Lord Baltimore; they were sons of George Calvert, first Lord Baltimore.

CAMBYSES (? -522 B. C.). King of the united Medes and Persians. He was the son of Cyrus the Great. On the death of his father he made his brother, Smerdis, governor or viceroy of the eastern part of Persia or Iran. He defeated Psamethik III., king of Egypt, in 525 B. C., and made Egypt a Persian province. He conquered Nubia, but failed in his attack upon Ethiopia. An impostor in the meantime appeared as Smerdis, who had been secretly

murdered by order of Cambyses, and the latter hastened home to punish him, but Cambyses died at Ecbatana in 522 B. C. He subjected the Egyptians to outrages, rifling the tombs and slaying the sacred bull, Apis.

CAMERON, JAMES DONALD (1833-). An American politician, generally known as "Don" Cameron; born at Middletown, Penn.; was graduated from Princeton (1852); was president of the Northern Central Railway Company (1866-1874); secretary of war in Grant's Cabinet (1876-1877); member of Senate (1877-1897); in 1880 was chairman of the Republican National Committee.

CAMERON, SIMON (1799-1889). American political leader; born at Maytown (now Donegal), Penn. From 1845 to 1849 he was a Democratic member of the United States Senate, and as a Republican he was again a member of the Senate (1857-1861); in 1861 was appointed secretary of war in Lincoln's Cabinet; United States minister to Russia from January to November, 1862. In 1866 he was again elected to the Senate, but retired in 1877 in favor of his son, James Donald Cameron.

CANNING, GEORGE (1770-1827). British statesman and orator; born in London; entered Parliament (1794); under-secretary for foreign affairs (1796-1801); refused office in the ministry of "all the Talents" (1806), but became foreign secretary in the Tory administration succeeding it (1807). The retirement of Lord Liverpool placed him at the head of the government, but unsupported by Wellington, Peel, and the leading Tories, his premiership lasted only four months.

CANUTE or **KNUT** (about 995-1035). King of England, Denmark, and Norway; son of Sweyn of Denmark. On the death of Edmund Ironside, with whom he had divided the country, he was proclaimed king of England. On the death of his brother, Harold, he also became king of Denmark (1019). He secured his position by the creation of a standing army. In 1028 he invaded and annexed Norway. He died suddenly at Shaftesbury, England, and was buried in St. Peter's Abbey Church in Winchester.

CAPET (*ka-pay'*), **HUGH** (938?-996). Founder of the third Frankish dynasty, which ruled France in the direct line from 987 to 1328 and through collateral branches till the Revolution (1789). The son of a Neustrian noble, he was elected king (987) by the feudal barons in opposition to Karl of Lorraine, the last of the Carlovingians.

CAPETIAN DYNASTY. The French line of kings from 987 to 1328. Louis V., last of the Carlovingian kings, died in 987. Hugh Capet was elected king by the influence of the clergy. He and his descendants held the throne of France for 341 years. The Capetian kings put a stop to the custom of dividing the kingdom among all of the late king's sons and thus preserved the integrity of the empire. They also enforced the Salic law under their own interpretation and shut out all rights of females to the throne. The kings of the Capetian Dynasty were: Hugh Capet (987-996); Robert II. (996-1031); Henry I. (1031-1060); Philip I. (1060-1108); Louis VI. (1108-1137); Louis VII. (1137-1180); Philip II., Augustus (1180-1223); Louis VIII. (1223-1226); Louis IX. (1226-1270); Philip III. (1270-1285); Philip IV. (1285-1314); Louis X. (1314-1316); Philip V. (1316-1322); Charles IV. (1322-1328).

CAPRIVI, GEORGE LEO, COUNT VON (1831-1899). Second chancellor of the German Empire, successor to Bismarck (1890-1894); arranged with Lord Salisbury the Anglo-German partition of East Africa (1890).

CARLETON, SIR GUY, FIRST LORD DORCHESTER (1724-1808). A British soldier; served at Louisburg, Quebec, and Belle Isle; wounded in the siege of Havana (1762). Lieutenant governor (1766) and governor (1775) of Quebec; repelled the attacks of Montgomery and Arnold (1775-1776); defeated Arnold on Lake Champlain and captured Crown Point (1776); superseded by Burgoyne (1777); succeeded Sir Henry Clinton in America (1782); governor of Quebec again (1786-1796.) Under him Canada was divided into Upper and Lower Canada.

CARLOS, DON (1545-1568). Son of Philip II. of Spain; excluded from succession, tried by the Inquisition for conspiracy, and sentenced to death; imprisoned until his death.

CARON, HON. SIR JOSEPH PHILIPPE RENE ADOLPHE (1843-1908). Born in Quebec; B.C.L. McGill University (1865); called to bar (1865); queen's counsel (1879); member of Parliament for Quebec (1873-1891), after which he was returned for Rimouski; represented Three Rivers and St. Maurice (1896); minister of militia (1880-1892); postmaster general (1892-1896). Knight of St. Michael and St. George for services during Riel rebellion (1885).

CARNOT (*kar-no'*), **MARIE FRANCOIS SADI** (1837-1894). President of the French Republic; born at Limoges; minister of public works (1880) and finance (1885); elected president (1887); assassinated at Lyons by an Italian anarchist (1894).

CARROLL, CHARLES (1737-1832). American patriot; born at Annapolis, Md. He was the last survivor of the 56 signers of the Declaration of Independence. During the Revolution he was a member of the Continental Congress (1776-1779); Federalist member of the United States Senate (1789-1791).

CARTWRIGHT, SIR RICHARD JOHN (1835-). Canadian statesman, lawyer, and banker; born at Kingston, Ontario. Member of Parliament (1863) as a Conservative; Liberal in 1870; minister of finance in the Mackenzie Cabinet (1873-1878); minister of trade and commerce in the Laurier Cabinet (1896); member of the Anglo-American Joint High Commission (1898).

CARVER, JOHN (1575?-1621). Leader of the Pilgrim Fathers who took refuge in Holland (1607-1608. He came to Massachusetts on the Mayflower and was the first governor of the Plymouth Colony (1620-1621). He was re-elected (1621), but died of sunstroke one month afterwards.

CASIMIR-PERIER, JEAN PAUL PIERRE (1847-). Ex-president of the French Republic; born in Paris. He was premier in 1893, succeeding Carnot as president in June, 1894, but resigned in 1895.

CASS, LEWIS (1782-1866). American statesman; born in Exeter, N. H. Served under Hull in 1812; was chief witness against him; served under Harrison (1813); governor of the Territory of Michigan (1813); secretary of war in Jackson's Cabinet (1831); minister to France (1836); United States senator (1845); nominated for president (1848); re-elected to Senate (1849); secretary of state in Buchanan's Cabinet (1857-1860).

CASSIUS LONGINUS, GAIUS. One of the assassins of Cæsar. In 44 B. C. he sided with Pompey against Cæsar though holding the office of pretor from Cæsar. He was promised the governorship of Syria for the following year. Fretting under the beneficence of Cæsar, he planned his murder. He won over Brutus to his views and on the Ides (15th) of March, 44 B. C., murdered Cæsar in the Senate. He fled to Asia Minor, made himself master of Syria, joined forces with Brutus, and met the army of Octavianus and Antony in Philippi, Macedonia. In the battle the wing commanded by Cassius was beaten by that of Antony, and Cassius in despair committed suicide (42 B. C.). His example was followed by Brutus.

CASTLEREAGH, ROBERT STEWART, VISCOUNT (1769-1822). Second marquis of Londonderry; minister of war under Pitt (1805). Intensely unpopular, he committed suicide at his seat, North Cray Place, in Kent.

CASTRO, CYPRIANO (1863-). President of the Republic of Venezuela from 1899 until December, 1908. He was the founder of a political party called the "Castristas," and took part in the rebellion against President Palacio (1892); in 1898 Andrade was made president, and Castro then became a real power in the government. The policy of the new president becoming unbearable, Castro successfully took the field against him and assumed the office of chief executive himself (October 24, 1899). In 1902 the Venezuelan Congress elected Castro president to complete Andrade's unexpired term. The dissolution of the Castro government was prevented in 1902 only by the timely defeat of the revolutionists near Victoria (October 13), and immediately following this, the president was obliged to face the claims of Great Britain and Germany, the settlement of which was left to The Hague Arbitration Court. (See history chart.) The revolutionists forced him to abdicate (December, 1908), and Juan Vicente Gomez succeeded him.

CASWELL, RICHARD (1729-1789). First governor of the state of North Carolina (1776-1778) and (1785-1787); commanded the minutemen at the victory of Moore's Creek (February 27, 1776).

CATHERINE I. (1682-1727). Empress of Russia. Succeeded her husband, Peter the Great, in 1725.

CATHERINE II., THE GREAT (1729-1796). Empress of Russia; daughter of a Prussian field marshal; born at Stettin; became sole ruler on the death of her husband, Peter III. She was an energetic sovereign and her reign is only second in importance to that of Peter the Great. She founded the Academy and wrote several comedies. She waged war with Turkey (1772-1792) and with Sweden (1790), and as a result of these and the three partitions of Poland she extended her dominions.

CATHERINE OF ARAGON (1485-1536). Queen of Henry VIII. of England, and daughter of Ferdinand and Isabella of Spain; divorced (1533). She was an important factor in the Reformation in England.

CATHERINE DE' MEDICI (1519-1589). Queen of France; daughter of Lorenzo de' Medici; married Henry, Duc d'Orleans, afterwards Henry II. of France.

CATILINE (LUCIUS SERGIUS CATILINA) (about 108-62 B. C.). A Roman noble who conspired against the republic. Governor of Africa in 67 B. C., he aspired for the consulship but was disqualified for maladministration of affairs in his province. He formed a conspiracy of young Roman nobles. This was revealed to Cicero, then consul, by Fulvia. Cicero was to be assassinated as a first step. He was kept so well informed of every step that he was able to protect himself. On November 6, 63 B. C., a meeting of the conspirators was held and new plans evolved. Cicero frustrated them. On November 8, Catiline appeared in the Senate and Cicero launched forth the famous oration against Catiline, exposing the minutest details of the plot. Catiline tried to answer but was mocked. He fled, his fellow conspirators were arrested, and, in the following year, Catiline was defeated and slain by a Roman army.

CATO, MARCUS PORCIUS, THE ELDER (234-149 B. C.). A Roman statesman. Son of a plebeian farmer, he remained a farmer till induced to go to Rome, where he quickly distinguished himself as a lawyer and was finally elected consul (195 B. C.). In 184 B. C. he was chosen censor and given the surname Censor for his thorough work in instituting reforms. In 175 B. C. he was sent to Carthage as mediator but returned, declaring that city Rome's most formidable rival. Thereafter all his speeches in the Senate concluded with "Carthage must be destroyed."

CATO, MARCUS PORCIUS, THE YOUNGER (95-46 B. C.). Roman statesman; in youth a soldier; became questor (65 B. C.); elected tribune (63 B. C.); delivered a famous speech against Cæsar's influence in the conspiracy of Catiline; always an enemy of Cæsar.

CAVAIGNAC (*kah-van-yak'*), **LOUIS EUGENE** (1802-1857). French soldier and politician. In the revolution of 1848 he was made governor general of Algeria, and established a dictatorship till the risings were quelled. He was defeated by Louis Napoleon in the presidential election.

CAVOUR (*kah-voor'*), **CAMILLO, COUNT DI** (1810-1861). The regenerator of Italy; born at Turin; became premier in 1852, and strove hard to unify his country. The first Italian Parliament met at Turin in 1861, three months before Cavour's death.

CHAMBERLAIN, JOSEPH (1836-). English statesman; born in London; thrice mayor of Birmingham before he was returned for Parliament in 1876. Since then he has been a conspicuous figure in English public life. After the split in the Liberal ranks over Gladstone's Home Rule Bill, he coöperated with the Conservative government. In 1887 he was one of the commissioners sent to Washington in connection with the Canadian fisheries dispute. In 1895 he was appointed colonial secretary, and saw the passing of the Australian Commonwealth Act (1900). His visit to South Africa after the Boer War produced good results. His chief legislative successes are the Bankruptcy Act (1883) and the Workmen's Compensation Act (1897). He retired from the Cabinet in 1903. He was instrumental in founding the Birmingham University (1900), and became its first chancellor.

CHAPLEAU, SIR JOSEPH ADOLPHE (1840-1898). A Canadian politician of French birth; filled several Cabinet offices in the Parliament of Quebec; secretary of state in the Dominion Parliament under Sir John Macdonald (1882-1892); minister of customs (1892); lieutenant governor of Quebec (1893-1897). Perhaps the most brilliant French-Canadian orator.

CHARLEMAGNE or CHARLES THE GREAT (742-814). King of the Franks after 768 and emperor of Rome from 800 to 814. He was the son of Pipin the Short. He took the eastern or Germanic parts of his father's empire in 768 and his brother took the western part. The brother, Karlman, died in 771 and Charlemagne took the whole empire. He thus shut out the young sons of his brother. Their mother fled to Desiderius, king of the Lombards. This brought on war and after a 10 months' siege of Pavia Desiderius was compelled to retire to a monastery. In 777 Charlemagne proclaimed himself king of the Lombards; confirmed the donation of lands by Pipin to the pope. He had crossed the Alps twice into Italy to reach his enemies. He invaded Spain in 778 and while returning to put down a rebellion of the Saxons his rear guard was attacked and almost annihilated in the pass of Roncesvalles, where Roland, the hero of a voluminous literary legend, fell. He completed the conquest of Spain and in 800 was crowned emperor of the West by the pope at Rome. In 787 he completed the conquest of Lombardy. In 804 he conquered the Saxons, with whom he had waged a long war. His attainments in the promotion of art, literature, religion, and civilization mark him as one of the most illustrious men of the Middle Ages and of all time. He was buried at Aix-la-Chapelle and was succeeded by his son, Louis the Pious.

CHARLES I., CHARLES STUART (1600-1649). King of Great Britain and Ireland; married the French princess, Henrietta Maria; succeeded to the throne (1625). For 11 years he governed without Parliament, levying "tonnage and poundage" (1629), granting monopolies, and exacting fines. His two chief advisers were Laud (archbishop of Canterbury) and Strafford. The latter was impeached by the Long Parliament (1640). The long struggle between the king and Parliament ended in civil war, and the final trial and execution of the king.

CHARLES II., CHARLES STUART (1630-1685). King of Great Britain and Ireland; crowned at Scone, January 1, 1651; invaded England in August, but was routed by Cromwell at Worcester. He was recalled to the throne of his father (1660). In 1662 he married Catherine of Braganza. The Test Act of 1673 was aimed at the king's favoritism of Catholics. The trumped-up plot of Titus Oates (1678-1680) and the Rye House Plot (1683) brought many to the block.

CHARLES IV. (1316-1378). Holy Roman emperor (1346-1378). Son and successor of John of Luxemburg, king of Bohemia, who fell in the battle of Crécy (1346). In 1346 he was declared emperor by five princes to supplant the excommunicated emperor, Louis IV. The latter died in 1347. In 1356 he issued the Golden Bull prescribing a new form of election of the king of the Romans. In 1376 he had his son, Wenceslaus, elected emperor. He founded, with the help of the archbishop of Prague, the University of Prague, on the model of that of Paris, in 1348.

CHARLES V. (1500-1558). Emperor of Germany; king of Spain as Charles I. He summoned the Diet of Worms (1521) to check the advance of Luther's teachings. He soon was at war with his great rival, Francis I. of France and Pope Clement VII., and in 1527 sacked Rome and took the pope prisoner. The Diet of Augsburg (1530) led to the formation of the Smalkaldic league of Protestant princes. A threatened invasion by the Turks compelled him to conciliate the Protestants. He defeated Barbarossa and captured Tunis (1535), setting free thousands of Christian slaves. Defeated by the Protestants under Maurice of Saxony, he agreed to the treaty of Passau (1552) and to the peace of Augsburg in 1555. In the following year he abdicated in favor of his son Philip.

CHARLES V., THE WISE (1337-1380). King of France (1364-1380). Son of John II., the Good. On his father's capture at Poitiers by the Black Prince, Charles took the regency of France. The peasants made a desperate effort to deliver themselves from the power of the nobles. This insurrection is known as the Jacquerie (1358). The peasants laid hundreds of castles in ruins, murdered the nobles, and practised every atrocity. The nobles combined and the peasants were defeated with terrible slaughter by Charles the Bad of Navarre. In two weeks 20,000 were slain. This retaliation went on for two years. Charles became king in 1364. He did much to consolidate his empire and to drive out the English. He founded the Bibliothèque Royale and built the Bastille to keep the turbulent citizens of Paris in order.

CHARLES VI. (1368-1422). King of France (1380-1422). Son and successor of Charles V. During his minority he was in the care of his four uncles, of whom the duke of Anjou was regent. In 1388 Charles took the government into his own hands and ruled well until he became insane. A regent was appointed and civil war broke out again. The nation was divided into the parties of Orléans and Burgundy. They each at times called in the aid of the English. Henry V. took advantage of the conflict and won the victory of Agincourt that left France almost helpless in 1415. Massacres and civil war waged until 1420, when, by the treaty of Troyes, Charles disinherited his son and accepted Henry V. as his successor. On his death in 1422 most of France was in the hands of the English.

CHARLES VII. (1403-1461). King of France (1422-1461). Son and successor of Charles VI. All France north of Paris was in the hands of the English, who proclaimed as king Henry VI. of England, then only 18 months old, with the duke of Bedford as regent. In 1427 the French obtained their first successes. In October, 1428, the English besieged Orléans, the most important city held by Charles. In 1429 the French were defeated at Harengs. Then Joan of Arc appeared and raised the siege of Orléans in 1429; Charles was consecrated king at Rheims in the same year; the English gradually lost their possessions; and the duke of Burgundy, their ally, went over to Charles. In 1436 Charles entered Paris and the English gradually lost all of the French possessions except Calais. Charles, during the rest of his reign, vastly improved the condition of his empire.

CHARLES VIII. (1470-1498). King of France (1483-1498). Son and successor of Louis XI. In 1494 the duke of Milan solicited aid from Charles against Alfonso of Naples. In 1495 he conquered the country. The League of Venice was formed against him by the pope, Maximilian I., Ferdinand of Aragon, Venice, and Milan. The army tried to prevent his return to France, but Charles broke through in safety. This interference of the French in Italy, which began in Charles's reign, lasted 400 years, until Victor Emmanuel drove the last foreigner out in 1870.

CHARLES XII. (1682-1718). King of Sweden from 1697. Russia, Denmark, and Poland combining against him, he besieged Copenhagen, compelled Denmark to sue for peace, and defeated the Russians. Invading Poland, he forced King Augustus to abdicate. He then marched into Russia, but was routed at Pultowa, and fled for a time to Turkey. He next attacked Norway, but was slain at the siege of Frederikshald.

CHARLES THE BALD (823-877). King of France (843-877). As Roman emperor he was Charles II. He was the son of Louis the Pious and grandson of Charlemagne. The wars between the sons of Louis the Pious were settled by the treaty of Verdun in 843, and Charles received the western part of the kingdom, which may be called from that time the Kingdom of France. His government was weak, the power being in the hands of the nobles; the Northmen ravaged the coasts with impunity; yet on the death of Emperor Louis II. Charles received the crown as emperor of Rome.

CHARLES MARTEL or **CHARLES THE HAMMER** (689-741). Son of Pipin of Heristal and mayor of the palace under the last of the Merovingian kings of the Franks. He was made mayor of the palace on the death of his father in 714. He conquered the west Franks and became ruler of all the Franks. He is most famous for his wars against the Saracens, who settled in Spain and attempted to cross the Pyrenees and conquer the rest of Europe. He overthrew them in 732 in a great battle near Poitiers in which their chief, Abd-er-Rahman, fell. He defeated them again in 738 and took Languedoc from them. He left his kingdom to his two sons, Karlmann and Pipin the Short.

CHITTENDEN, THOMAS (1730-1797). First governor of Vermont (1778-1789), and again (1790-1797). Member of the State Constitutional Convention (1778).

CHRISTIAN IX. (1818-1906). King of Denmark (1863-1906); succeeded Frederick VII. Granted Iceland a new constitution (1874). His daughter, Alexandra, is the queen of Edward VII. of England. He was succeeded by his son, Frederick VIII.

CICERO, MARCUS TULLIUS (106-43 B. C.). The greatest orator of Rome and one of the most famous statesmen. Studied law and oratory and traveled abroad; elected questor in 76 B. C.; delivered his six orations against Verres, and was elected consul in 63 B. C. He frustrated the conspiracy of Catiline (see CATILINE); was charged by his enemies with putting citizens to death without trial and was obliged to leave Rome and live in Thessalonica in 58 B. C. He was recalled in 16 months, and, while opposed by his own party, was courted by Pompey and Caesar. After the battle of Pharsalia he joined Caesar. In the civil war he supported Octavianus, and denounced Antony in his Philippics. When the triumvirate of Octavianus, Lepidus, and Antonius was formed, Cicero was proscribed and his life was sought. While trying to escape in a covered litter, old and infirm, he was overtaken by soldiers and, without resistance, offered his neck to the executioners.

CINCINNATUS, LUCIUS QUINCTIUS. A famous Roman patrician. When the consul, Lucius Minucius, was surrounded by the Aequi, Cincinnatus was called from his simple farm life to act as dictator. He saved the consul, and, after a dictatorship of 16 days, retired again and took up his simple life. He was again, at the age of 80, called as dictator in an emergency and suppressed a threatened uprising of the plebeians (439 B. C.).

CINQ-MARS (*sank-mar'*), **HENRI, MARQUIS DE** (1620-1642). A favorite of Louis XIII. of France. He conspired against Richelieu; was detected, condemned, and beheaded. He is the hero of Alfred de Vigny's novel, *Cinq-Mars*.

CLAUDIUS I., TIBERIUS CLAUDIUS DRUSUS (10 B. C.-54 A. D.). Roman emperor (41-54). He was proclaimed emperor by the officers of the guard who assassinated Caligula. He began the pernicious policy of paying the troops, which ultimately gave the empire into the soldiers' control. His reign was at first mild, but on the discovery in 42 of a conspiracy against him, he gave himself over to the advice and control of his wife, Messalina, and some favorites, who practised extortion and cruelty. Claudius made several buildings, including the Claudian Aqueduct, which occupied 30,000 laborers 11 years. The conquest of Britain began under his personal command. He caused his wife, Messalina, to be executed and married his niece, Agrippina. Under her influence he deprived his son of his inheritance and adopted Nero. On a suspicion that he was going to treat Nero in the same way, his wife poisoned him with mushrooms. He was deified after death.

CLAY, HENRY (1777-1852). American orator and statesman; born in Hanover County, Va.; admitted to the bar (1797); elected to Kentucky legislature (1803); filled out the unexpired term of John Adair in the United States Senate (1806-1807); elected to the House of Representatives (1811) and was re-elected speaker four times. In 1824 he was a candidate for the presidency, and in 1832 was again defeated as the candidate of the Anti-Jackson Party; was again in the Senate (1831-1842); presidential candidate (1844); re-elected senator (1848). He was known as "The Great Pacificator," and was one of the greatest orators America ever produced.

CLEOMENES III. (? -220 B. C.). The last great statesman of Greece. He became king of Sparta about 235 B. C. His efforts toward reform were directed to abolish the office of ephors, restore the kingship, and by reforms to make Sparta the leading power in Greece. He fought the Achaean League with varying success; carried out part of his scheme, but after his great defeat at Sellasia in 221 B. C. by the combined forces of the League and the Macedonians, he fled to Egypt. Here he tried to bring about a rebellion of his own people, but failing in this he took his life.

CLEOPATRA VI. (68-30 B. C.). Queen of Egypt and the most fascinating woman of all time. She was the daughter of Ptolemy XIII., Auletes. She succeeded to the throne in 51 B. C. and shared the government with her younger brother, whom she afterward poisoned. She captivated Caesar and, later, Antony. Rome declared war on her and she and Antony were defeated in the sea fight of Actium in 31 B. C. She fled to Egypt and Antony followed. Octavianus, afterwards Augustus, went to Egypt. Cleopatra failed to captivate him and after the death of Antony, fearing that Octavianus would take her to Rome in triumph, she poisoned herself.

CLINTON, DE WITT (1769-1828). American political leader; born at Little Britain, N. Y.; admitted to the bar in 1789; member of the United States Senate (1802-1803); thrice mayor of New

York, and again state senator (1806-1811); lieutenant governor of New York (1811-1813). He was the chief promoter of the Erie Canal, which for long was derisively known as "Clinton's Ditch."

CLIVE, ROBERT, LORD (1725-1774). The creator of the Indian Empire; born at Styche, near Market Drayton. At 18 he went to India and entered the service of the East India Company. He rose from ensign to general by his marvelous energy and skill; won several victories over the French; and in 1757, at the head of only 3,000 British troops, he routed Siraj-ud-Daula and his army of 65,000. He was appointed governor general of India (1765). Two years later he returned to England in broken health.

CLOVIS or **CHLODWIG** (about 481-511). Founder of the kingdom of the Franks. He overthrew the Romans and the Gauls in 486, near Soissons, and extended his conquests to the Loire. In 493 he married Clotilda of Burgundy, a Christian princess. In 496, in battle with the Alemanni, being hard pushed, he vowed to accept Christianity if successful. On his victory he kept his vow, and on Christmas Day he and 3,000 followers were baptized. He defeated and slew Alaric II., king of the Visigoths, at Vouillé and added much to his dominions (507-510). He made Paris his capital and died there in 511. His kingdom was divided among his four sons.

CLOVIS III. (657-695). King of the Franks. Until he came of age he reigned under the tutelage of Pipin of Heristal, mayor of the palace.

COBB, HOWELL (1815-1868). American statesman; born in Georgia; represented Georgia in Congress, and was elected speaker in 1849; was governor of his native state, and secretary of the treasury under Buchanan; resigned on secession of Georgia; was president of the Confederate Congress, and a major general of the Southern army.

COBDEN, RICHARD (1804-1865). An English statesman and economist, known as the apostle of free trade. First brought into public notice by his efforts to abolish the Corn Laws in which, after seven years' hard work, he was successful; elected member of Parliament (1841). His uprightness of character gained for him the respect of continental nations, as well as of his own country, but he declined all civic honors.

CODDINGTON, WILLIAM (1601-1678). American colonist; born in Boston, Lincolnshire, England. Came to Plyomuth in 1630, and was one of the 19 settlers on Aquidneck Island, afterward Rhode Island. He governed this settlement from 1651 to 1655, and again from 1674 until his death.

CODRUS. The last king of Athens. He is supposed to have lived about 1060 B. C. The Dorians invaded Attica; the oracle declared that the city of Athens would be saved if its ruler perished by the hand of the enemy. Codrus, in the disguise of a peasant, entered the Dorian camp and was slain in a quarrel of his own seeking. His son, Medon, was the first archon chosen for life.

COLBERT (*kol-bair*), **JEAN BAPTISTE** (1619-1683). Son of a French wool merchant; rose to be comptroller general of finance. He virtually laid the foundation of the French navy. **COLBERT, JEAN BAPTISTE, MARQUIS DE SEIGNELAY,** his son (1651-1690), succeeded him, as minister of marine and raised the efficiency of the navy considerably.

COLFAX, SCHUYLER (1823-1885). American statesman; born in New York City; represented Indiana in Congress and became speaker (1863-1869); was vice-president of the United States from 1869 to 1873. His reputation was impaired by the Crédit Mobilier scandal, and he failed to obtain a renomination.

COMMUNE OF PARIS (1792). A rebellious civic government in Paris (August, 1792). Through the personal pressure of its leaders it gained immediate ascendency in the Assembly, and finally became the instrument of the violent element of the Revolution and dictated the policy of France.

COMMUNE OF PARIS (1871). The organized mob which had control of Paris from March 18 to May 27. It occurred immediately after the German army left Paris on March 3. The Communists were called Reds. With the help of the National Guard they took possession of the city. The authority of the National Assembly sitting at Versailles was declared null; 150,000 men under Marshal MacMahon besieged Paris and wrested the control from the Communists backed by 100,000 well-trained troops. Towards the last, the Reds resorted to violence. The house of M. Thiers was destroyed, the Vendôme Column torn down, buildings, including the Palace of the Tuileries, were burned, hostages were massacred, and the fight ended in the cemetery known as Père-la-Chaise on May 27.

CONGER, EDWIN HURD (1843-1907). American diplomatist; born in Illinois; elected to Congress (1884) and twice returned as a Republican; minister to Brazil from 1891 to 1895 and again in 1897; transferred to China in 1898, where he figured in the Chinese crisis of 1900, and narrowly escaped death at the hands of the Boxers.

CONKLING, ROSCOE (1829-1888). American political leader, orator, and lawyer; born at Albany, N. Y.; was a representative in Congress (1859-1863 and 1865-1867), and was a member of the Senate (1867-1881). He and his colleague, Thomas C. Platt, resigned in 1881 because President Garfield appointed William H. Robertson, an anti-Conkling man, collector of the port of New York, without consulting them. He afterwards practised law in New York City.

CONRAD II. (about 990-1039). First German emperor of the Franconian line, and emperor of the Romans (1024-1039). He added the duchy of Burgundy to the empire. The Truce of God, a decree which set apart certain days and seasons when no fighting must be engaged in, did much towards consolidating his rebellious empire. Peace and authority were finally restored in 1033. He died at Utrecht.

CONRAD III. (1093-1152). First German emperor of the house of Hohenstaufen; elected by the anti-papal faction of the German princes (1138); son of Frederick of Swabia. The duchy of Franconia was given to him by Henry V. in return for his help during the civil war. Internecine troubles between the Ghibellines, of which he was the head, and the Guelfs under Henry the Proud of Bavaria and Saxony, never gave him leisure to be crowned in Rome. In 1147, as a result of St. Bernard's preaching, a vast crusade with Conrad at its head set out for the Holy Land, but it ended disastrously.

CONSTANTINE I., THE GREAT (FLAVIUS VALERIUS AURELIUS CONSTANTINUS) (272-337). A Roman emperor from 306 to 337. He served under Diocletian in Egypt, under Galerius in Persia. When Diocletian and Maximian abdicated in 305, Chlorus and Galerius retained the power. Constantine was the son of Chlorus, and Galerius was jealous of him. He sought to expose him to all possible danger in hope of getting rid of him. Constantine joined his father, who controlled the West, and when the father died at York in 306 he named his son his successor. In the jealous quarrel that ensued there were no fewer than six emperors in the field at once. Constantine overcame Maximian and his son, Maxentius, in the West. When Galerius died in 311, Licinius became sole emperor of the East. Constantine and Licinius quarreled, and in 323 Licinius was defeated and Constantine became sole ruler of the Roman world. He then moved the seat of government from Rome to Constantinopolis (modern Constantinople), the former Byzantium, whence he ruled the vast empire until his death in 337. He was a Christian, having been baptized a short time before his death. He called the Council of Nice (Nicaea) in 325 and presided at its first sitting.

CONSTANTINE XIII., PALAEOLOGUS. Last of the Byzantine emperors and last of the Palaeologi (1404-1453). The son of Manuel II. Though an intelligent and capable ruler his position was hopeless. Mohammed II. was preparing for the final assault on Constantinople and Constantine's appeal to Christendom was unavailing. After a long siege the city was captured on May 29, 1453. Constantine was slain in the battle around the gates of the city. Mohammed gave his body fitting burial.

CONSUL. An office in the government of Rome. The office was created in 509 B. C. on the expulsion of the Tarquins. They were two in number. They held the entire power of the state both at home and abroad. Each was responsible for the acts of both. Gradually their power was limited and other offices created to relieve them. The tenure of office was for one year and the year was named after the consul. They led the army, presided at the meetings of the Senate, at elections, and at public festivals. They wore a white toga with a purple band as a badge of office. The consul sat in a curule chair and was attended by a band of 12 men, called lictors, armed with the fasces, or ax bound with a bundle of rods. At first the office was limited to the patrician order,

but the Licinian Rogations provided, among other things, that one of the consuls should be a pleb. In 342 B. C. both consulships were thrown open to the plebs, but it was not until 215 that both consuls were plebs, and one of these was quickly put out of office. In 162 B. C. both consuls were plebs and retained office. With the establishment of the empire under Augustus the office was abolished.

CONVENTION, for forming the constitution of the United States, met at Philadelphia, May 14, 1787, under the presidency of George Washington, and submitted the result to the various states on September 17. Rhode Island was the only colony not represented. This is the only national constitutional convention that has ever been held in the United States, and its members, among whom were Benjamin Franklin, James Madison, Alexander Hamilton, Roger Sherman, and Rufus King, are revered as the "Fathers of the Constitution."

CORIOLANUS GAIUS or **GNAEUS MARCIUS.** A famous Roman patrician who for his opposition to the plebeians and their tribunes was impeached and banished. He went to live with the Volsci, a neighboring tribe. He led them against Rome (491 B. C.), and at the moment of victory yielded to the prayers of the Roman matrons, headed by his mother and his wife, Volumnia, and her two children. He withdrew his forces and retired to private life.

CORTELYOU, GEORGE B. (1862-). Secretary of the United States treasury under Roosevelt; born in New York; was graduated at the Hempstead (L. I.) Institution (1879) and at the State Normal School, Westfield, Mass. (1882); was principal of a preparatory school of New York (1885-1889), and subsequently private secretary to various officials. He first was assistant secretary and afterwards secretary to President McKinley, being reappointed by President Roosevelt (1901); served as first secretary of the Department of Commerce and Labor (1903-1904); postmaster general of the United States (1905-1907); secretary of the treasury (1907-1909).

CORWIN, THOMAS (1794-1865). American political leader and orator; born in Bourbon County, Ky.; successively a member of Congress (1830-1840), governor of Ohio, United States senator (1844-1850), secretary of the treasury (1850-1853), and United States minister to Mexico (1861-1864). "The most famous stump-speaker of his time."

COSTIGAN, HON. JOHN (1835-). Born at St. Nicholas, P. Q. Educated at Ste. Anne's College. Registrar of deeds for county of Victoria and judge of Superior Court of Common Pleas; elected to represent Victoria in the Legislature (1861-1866). After the Confederation (1867) elected to House of Commons, where he retained his seat to 1898. Was an earnest advocate of the Catholics of New Brunswick in the school question in that province, eventually having anti-Catholic provision expunged. Identified with Home Rule for Ireland. Minister of inland revenue (1882-1892); secretary of state (1892-1894); minister of marine and fisheries and member of government to the retirement of Conservative party (1896). Chief promoter and president of Tobique Valley Gypsum Mining and Manufacturing Company (1893); president of Kootenay Cariboo Mining and Investment Company.

COX, SAMUEL SULLIVAN (1824-1889). American statesman and author; born at Zanesville, Ohio; representative of Ohio in Congress (1857-1865) and of New York (1869-1873, 1875-1885, and 1886-1889); United States minister to Turkey (1885-1886). In appreciation of his efforts to secure the passage of a bill through Congress the letter carriers erected a statue of him in New York City. From a gorgeous article he wrote in the *Ohio Statesman*, he received the sobriquet of "Sunset Cox."

CRASSUS, MARCUS LICINIUS (? -53 B. C.). A Roman triumvir. He helped Sulla at the battle of the Colline Gate in 82 B. C., when the fate of the Marian party was sealed. He crushed Spartacus and the gladiators in 71 B. C., and in 70 B. C. was made consul with Pompey, whom he hated. Crassus was the most wealthy of the Roman citizens and Cæsar courted him. While consul, Crassus gave a dinner to the people, which was spread on 10,000 tables, and distributed to each person a supply of corn for three months. Plutarch says Crassus had 7,000 talents (about $8,260,000); Pliny says his lands were worth 8,000 talents ($9,440,000). In 60 B. C. he formed with Pompey and Cæsar the first triumvirate. In 55 B. C. as consul with Pompey he obtained the province of Syria, and prepared a campaign there. He was defeated by the Parthians and betrayed into a conference with the general, Surenas, by whom he was slain.

CROCKETT, DAVID (1786-1836). American pioneer, politician, and humorist; born at Limestone, Tenn.; member of Congress (1827-1829 and 1831); took part in the Texan War and was killed in the Alamo (March 6, 1836). His oft-quoted motto was, "Be sure you are right, then go ahead."

CROESUS (*kre'sus*) (590-546 B. C.). Last king of Lydia; son of Alyattes; renowned for his vast wealth; declared war on Cyrus, king of Persia, the oracle of Delphi assuring him that he would destroy a great empire, but his own empire paid the penalty. He was defeated and captured.

CROKER, RICHARD (1843-). New York politician and leader of Tammany (1886-1902); succeeded John Kelly; conducted mayoralty campaigns of Hugh Grant (1889), Thomas F. Gilroy (1893), and Robert Van Wyck (1897); supported Bryan for president (1900); retired after Seth Low's election (1902); freeman of Dublin (1908).

CROMWELL, OLIVER (1599-1658). The great protector; born at Huntingdon, England. At the outbreak of the Civil War he joined the Parliamentary forces as a cavalry captain (1642) and rose to be the greatest English military leader of the time, as was demonstrated at Marston Moor (1644), Newbury (1644), Naseby (1645), Preston (1648), Dunbar (1650), and Worcester (1651). He was equally distinguished as a statesman, and safeguarded English liberties. He signed the death warrant of Charles I. (1649), and was elected protector. Summoned to Scotland, when Charles II. had been proclaimed king, he defeated the Scots at Dunbar (1650) and at Worcester (1651). He dissolved Parliament in 1653 and relied upon the support of the army.

CYRUS THE GREAT. The founder of the Persian Empire and the conqueror of Babylon (600-529 B. C.). He was the son of Cambyses and grandson of Astyages, whose kingdom he overthrew, and gained the mastery of Media before 550 B. C. He vanquished Crœsus, king of Lydia, in 546 B. C.; conquered Babylon, sending Nabonidus into exile and putting his son, Belshazzar, to death in 539 B. C. He set the captive Jews at liberty in 537 B. C. He fell, fighting, in 529 B. C. in a war against either the Scythians or an Indian tribe. The details of his reign are recorded upon the famous cuneiform cylinder found a few years ago. Xenophon made him the hero of his Cyropædia, a famous historical romance.

DALE, SIR THOMAS (? -1619). A colonial governor of Virginia (1611,1614-1616), whose administration was noted for pitiless severity. His laws were known as "Dale's Code." and the colonists referred to the years 1611-1616 as their "five years of slavery."

DALLAS, ALEXANDER JAMES (1759-1817). An American politician; born in the island of Jamaica; educated in Great Britain, and removed to Philadelphia (1783). Secretary of the treasury in Madison's cabinet (1814-1816); secured the passage of an act to incorporate a new United States bank (1816); was secretary of war as well as of the treasury (1815-1816).

DALLAS, GEORGE MIFFLIN (1792-1864). American statesman and diplomat; United States senator from Pennsylvania (1831-1833); attorney general of Pennsylvania (1833-1835); American minister to St. Petersburg (1837-1839); vice-president of the United States (1845-1849); cast the deciding vote for the tariff bill (1846); minister to England (1856-1861).

DANA, FRANCIS (1743-1811). An American jurist and statesman; born in Charlestown, Mass. Elected to the Continental Congress (1776); chairman of the committee to submit plans for the reorganization of the army (1778); member of the committee to consider the conciliatory proposals from Lord North (1778); official secretary abroad to John Adams (1779-1781); minister to Russia, but not recognized by Catherine (1781-1783); elected to the Continental Congress (1784); justice of the Supreme Court of Massachusetts (1785); delegate to the Annapolis Convention (1786); delegate to the Constitutional Convention at Philadelphia (1787); chief justice of Massachusetts Supreme Court (1791-1806).

DAN'DOLO, ENRICO (1108-1205). Doge of Venice (1192); member of one of the 12 great families of Venice. He helped the Fourth Crusade with money

and ships, and was present at the siege of Constantinople. He is the "blind old Dandolo, the octogenarian chief, Byzantium's conquering foe" of Byron's *Childe Harold*.

DANE, NATHAN (1752-1835). American jurist and legislator; born in Ipswich, Mass. Member of the Massachusetts House of Representatives, Continental Congress, and the Massachusetts Senate; member of the Hartford Convention (1814); contributed $15,000 toward the founding of Harvard Law School and the Dane professorship was named in his honor. Whether he or Manasseh Cutler deserves the credit of drawing up the ordinance for the government of the Northwest Territory is much debated.

DARIUS I. or **DARIUS HYSTASPES.** Darius is the title of several Persian kings and is used much the same as Pharaoh or Caesar by the Egyptians and the Romans respectively. Darius Hystaspes, the first of the line, reigned from 522 to 486 B. C. He led a plot to murder Smerdis and gained the throne. Under him the kingdom was divided into 20 satrapies or provinces ruled over by satraps. Inscriptions record nine or ten rebellions against Darius. He besieged Babylon unsuccessfully for two years, after which his general, Zopyrus, took it in 516 B. C. by stratagem. He began the great rock inscription at Behistun in 514 B. C. and thus recorded the chief events of his reign. In 513 B. C. he crossed the Bosporus with 700,000 men on a bridge of boats and reached the Danube in an unsuccessful campaign against the Scythians. He sent 80,000 men to conquer Thrace. In 501 B. C. the Ionian cities in Asia Minor revolted; the Athenian forces helped them; Sardis was burned and Darius resolved to invade Greece to punish them. In 492 B. C. he sent Mardonius with a fleet to attack Thrace and Macedonia and at the same time directed a fleet against Greece. The fleet was shipwrecked and dispersed. In 490 B. C. he tried again, but his army was defeated by the Athenian force under Miltiades at Marathon and the fleet was also beaten. While preparing for a third attempt, Darius died in 486 B. C., and was succeeded by his son, Xerxes.

DARIUS II., OCHUS or **NOTHUS.** The son of Artaxerxes I., Longimanus. He removed from the throne of Persia Sogdianus, another son of Artaxerxes, who had gained the throne by murdering Xerxes II., in 424 B. C., and reigned until 404 B. C. The events of his ignoble reign are not creditable, as he was controlled by court favorites and by his wife, Parysatis. Tissaphernes, the satrap of Asia Minor, and Cyrus the Younger, son of the king, exercised great power in the affairs of Greece during the Peloponnesian War.

DARIUS III., CODOMANNUS. The great-grandson of Darius II. He came to the throne in 336 B. C. Early in his reign Alexander the Great of Macedon defeated him at Issus (333 B. C.), capturing his mother, wife, and three children. He was again beaten by Alexander at the battle of Gaugamela near Arbela in 331 B. C., after which Darius fled to Ecbatana; thence he went to the northern provinces, where he was seized by Bessus, the satrap of Bactria. Alexander in a fit of generosity went to attack Bessus and to relieve Darius. Bessus fled, and, on the refusal of Darius to accompany him, stabbed him. The scouts of Alexander found Darius dying. Alexander had him buried in the royal tomb. With his death the Persian Empire came to an end.

DAUNOU, PIERRE CLAUDE FRANCOIS (1761-1840). French statesman; born at Boulogne-sur-mer; entered the Congregation of the Oratory (1777); member of National Convention (1792); opposed execution of Louis XVI.; refused to support proscribing of Girondists. Imprisoned and narrowly escaped death. First president of the Council of Five Hundred.

DAVIES, LOUIS HENRY (1845-). Canadian statesman; born in Charlottetown, P. E. I. Premier and attorney general of Prince Edward Island (1876); member of the Dominion Parliament since 1882; one of the British counsel before the International Fisheries Commission at Halifax (1877).

DAVIS, JEFFERSON (1808-1889). An American statesman and president of the Confederate States; born in Kentucky; was graduated at West Point (1828); took part in the Black Hawk and Mexican wars; Mississippi member of the United States Senate (1847-1851). In 1851 he ran unsuccessfully for the governorship of Mississippi; was secretary of war in Pierce's Cabinet (1853-1857); re-elected to Senate (1857). He was preëminently the spokesman of the Southern States, of which he was elected provisional president (1861) and definitely elected for six years (1862). He held office throughout the Civil War; was captured near Irwinville, Ga., on May 10, 1865, and for two years imprisoned in chains at Fortress Monroe, awaiting trial for treason. He was released on bail, but the proceedings against him were abandoned. He passed the remainder of his life in retirement. He published the *Rise and Fall of the Confederate States* (1881). His widow (*née* Howells) wrote his biography.

DAY, WILLIAM RUFUS (1849-). American statesman; born at Ravenna, Ohio. Judge of the Court of Common Pleas (1886); secretary of state to succeed John Sherman (1898); chairman of the United States Peace Commission at Paris to arrange terms of peace with Spain (1898); judge of the United States Circuit Court (1899); associate justice of the United States Supreme Court (1906).

DECEMVIRS. The name was given to various bodies of magistrates in ancient Rome. The most famed decemvirs drew up "the laws of the Twelve Tables" (about 450 B. C.), which were engraven on 12 tables of metal, and these form the basis of all later Roman law. Their authority was absolute for three years, until the insurrection caused by Claudius's treatment of Virginia compelled them to resign.

DELAWARE or **DE LA WARR, THOMAS WEST, THIRD BARON** (1577-1618). Colonial governor of Virginia; born in Hampshire, England; succeeded to the peerage in 1602; in 1610 was appointed the first governor of Virginia and captain general for life. The state, bay, and river of Delaware perpetuate his memory.

DEMETRIUS I., POLIORCETES (about 337-283 B. C.). A Macedonian king (294-287 B. C.). Was defeated by Ptolemy at Gaza; won a victory over Cilles in Syria; freed Athens from the rule of Cassander in 307 B. C.; defeated Ptolemy in a naval battle at Cyprus; laid unsuccessful siege to Rhodes in 305 B. C.; was defeated at Ipsus by Seleucus and Lysimachus in 301 B. C. In 295 B. C. he recovered Aegina, Salamis, and Athens, which had been taken from him. In 294 B. C. he murdered Alexander, brother of Antipater, and took the throne of Macedonia, but was later driven out by Pyrrhus. He finally surrendered to Seleucus, with whom he remained a prisoner until his death in 283 B. C. He was noted for the completeness of his preparation in war and sieges.

DENNISON, WILLIAM (1815-1882). An American politician, "War Governor" of Ohio; born in Cincinnati. Governor of Ohio (1860-1864). At one time when 11,000 troops were called for, Governor Dennison raised over 30,000. From 1864 until 1866 he was postmaster general in the cabinets of Lincoln and Johnson. One of the earliest of the prominent politicians to join the Republican Party and was chairman of the Republican National Convention in 1864.

DEPEW, CHAUNCEY MITCHELL (1834-). American lawyer, railroad president, politician, and orator; born in Peekskill, N. Y. In the State Assembly (1861-1862); secretary of state for New York (1863-1865); president of the New York Central (1885-1898); United States senator (1899).

DERBY, EDWARD GEOFFREY SMITH STANLEY, FOURTEENTH EARL OF (1799-1869). A celebrated English orator and statesman, "The Rupert of debate"; was Irish secretary in Earl Grey's ministry. When Peel proposed to amend the Corn Laws he became leader of the Protectionists and the Conservative Party; was premier in 1852, 1858, and again in 1866; resigned in favor of Disraeli (1868).

DESSALINES (*day-sa-leen'*), **JEAN JACQUES** (1758-1806). The first emperor of Haiti; an African negro; assassinated by Christophe and Pétion; was the favorite officer of Toussaint l'Ouverture, and succeeded him in command in 1804; appointed governor general for life; afterwards had himself crowned emperor and became a cruel despot.

DEWDNEY, EDGAR (1835-). Canadian statesman; born in England; went to British Columbia (1859); member of local Parliament (1868); member of Dominion Parliament (1872-1879); Indian commissioner until 1881; lieutenant governor of the Northwest Territory (1881-1888); minister of the interior and superintendent of Indian affairs (1888-1892); lieutenant governor of British Columbia in 1892.

DE WITT, JAN (1625-1672). Dutch statesman; born at Dort; became grand pensionary of the United Provinces of the Netherlands (1653). During the war with England his influence waned, and the Orange

party he had so strenuously opposed elected Prince William of Orange as Stadtholder. With his brother, Cornelius, he was murdered during a popular tumult.

DIAZ (*dee'az*), **PORFIRIO** (1830-). Mexican soldier and statesman; born at Oaxaca; enlisted in the army during the war with the United States, but saw no active service; studied law in the Institute of Arts and Sciences, Oaxaca, where he afterwards became professor of Roman law. He commanded a battalion in the revolt against Santa Anna (1854); became chief of a brigade in the War of the Reform (1859); was promoted to general during the War of the Intervention, and was taken prisoner on the capture of Puebla by the French (May, 1863). He escaped and was made commander in chief; defeated Marquez and secured the surrender of Mexico City (June 21, 1867), which marked the end of Maximilian's Empire. In 1872 and 1876 he led the revolutionary forces or "Porfiristas" against the government. In November, 1876, he was made provisional president, and in April, 1877, was elected for a term ending 1880. Ineligible for immediate re-election, he gave place to his secretary, General Gonzalez, but was again made president (1884), and the constitution having been amended he was continuously re-elected without opposition until 1904. One of the greatest statesmen of the age, he has given Mexico a new international standing, and his presidency marks an epoch of progress and pacification.

DIDO. A queen of Carthage in the north of Africa. She was the daughter of Agenor or Belus, a king of Tyre. His successor, Pygmalion, brother of Dido, murdered her husband, Sichaeus. She fled from Tyre with her husband's treasure, accompanied by many Tyrians, and founded the city of Carthage. Vergil makes Aeneas stop at Carthage and relate to Dido his misfortunes at Troy. She is there represented as killing herself on a funeral pyre through grief at her unrequited love for Aeneas. It is now believed that Carthage was built more than 150 years before the founding of Rome.

DIEMEN, ANTON VAN (1593-1645). A Dutch administrator; rendered conspicuous service in the Dutch Indies and was made governor general. The name Van Diemen's Land (Tasmania) was given by Abel Tasman to the island discovered by him in 1642, while voyaging on behalf of Van Diemen.

DILLON, JOHN (1851-). An Irish politician and agitator; born in Dublin. He was the son of John Blake Dillon (1816-1866), who was a prominent member of the Young Ireland Party. Young Dillon joined the Parnellite movement and in 1880 was elected to Parliament from Tipperary. He was imprisoned in 1881-1882 and again in 1891 for violent language inciting the Irish tenants to lawlessness. In 1885 and again in 1892, 1895, 1897, and 1900 he was elected from East Mayo. He succeeded Justin McCarthy as chairman of the Irish Nationalist Party (1896-1899).

DINGLEY, NELSON, JR. (1832-1899). American congressman; born in Durham, Maine. Editor of the Lewiston *Journal* (1856-1886); in the state Legislature (1862-1873); speaker (1863-1864); governor (1874-1875); in Congress from 1881 until his death. He was the framer of the tariff bill of 1897, which bears his name.

DIOCLETIAN (GAIUS AURELIUS VALERIUS DIOCLETIANUS) (245-313). A Roman emperor (284-305). He was proclaimed emperor by his soldiers on the murder of Numerianus. To repel the incursions of the barbarians he associated with him colleagues in the government so that there were in all four emperors at one time: Maximian, controlling Italy and Africa from Milan; Diocletian taking the East with Nicomedia as his seat; Constantius, Britain, Gaul, and Spain, from Treves; and Galerius, Illyricum and the valley of the Danube, from Sirmium. After much harassing rule, Diocletian abdicated and compelled Maximian to do likewise in 305. During the last two years of his rule he yielded to the advice of Galerius and permitted the horrible persecution of the Christians for which his reign is noted.

DIONYSIUS THE ELDER (431-367 B. C.). Tyrant of Syracuse; made himself tyrant of the city in 406 B. C.; captured Rhegium (387 B. C.) and ruled the southern corner of Italy. Under his rule Syracuse became one of the most brilliant of the Grecian cities.

DIONYSIUS THE YOUNGER (396-330 B. C.). Successor of his father, Dionysius the Elder; was forced out of Syracuse by Dion and ruled in Locri; regained Syracuse in 346 B. C., but his subjects sought aid of Corinth against his despotic rule. Died a prisoner in Corinth.

DIX, JOHN ADAMS (1798-1879). American statesman and soldier; born at Boscawen, N. H. Served through the War of 1812; was a prominent member of the Albany Regency; member of the Assembly of New York (1842); United States senator (1845-1849); secretary of the treasury under Buchanan (January to March, 1861); major general of volunteers (1861); minister to France (1866-1869); governor of New York (1873-1875).

DOGE. A title corrupted from the Latin word for duke, borne by the head of the government in Venice and Genoa. Paola Lucia Anafesto, the first doge of Venice, was elected in 697. The office disappeared in Venice with its fall in 1797. Simone Boccanera, elected in 1339, was the first doge of Genoa. The office was abolished in 1797, when Genoa fell into the hands of the French.

DOLE, SANFORD BALLARD (1844-). A Hawaiian statesman; born of American parents in Honolulu; admitted to the bar in Boston, Mass.; judge of the Supreme Court of Hawaii (1887-1893); when the kingdom was overthrown (1893) he became president of the provisional government; president of the Hawaiian Republic (1894). President Cleveland's intention of restoring Queen Liliuokalani was defeated by Dole. In 1898 he was a member of the commission for suggesting legislation for Hawaii; and in 1900, after annexation, was governor.

DOMITIAN (TITUS FLAVIUS DOMITIANUS) (51-96). Roman emperor (81-96); was the son of Vespasian and younger brother of Titus. The earlier years of his rule were marked by beneficence and wisdom; but through the failure of campaigns, especially against the Dacians, he grew embittered and ruled cruelly and tyrannically. He drove nearly all good men from Rome; paid the soldiers enormously; and pacified the people with expensive games and gladiatorial combats. His cruelties caused a rebellion against him in which he was assassinated.

DONGAN, THOMAS, EARL OF LIMERICK (1634-1715). A colonial governor of New York; born in County Kildare, Ireland. Appointed governor of New York (1682); granted a charter to the city of New York and another to Albany, which remains the basis of municipal rights.

DORION, SIR ANTOINE AIME (1818-1891). A Canadian politician; born in Sainte Anne de la Perade. Member of the Canadian Assembly for Montreal (1854-1861) and for Hochelaga (1862-1867); member of the Dominion Parliament (1867-1874); leader of the Rouge or French-Canadian Liberals; held several cabinet offices; after 1874 was chief justice of Quebec; knighted in 1877.

DOST MOHAMMED KHAN (1793-1863). Ameer of Afghanistan (1826-1863), founding the present dynasty. Although not well treated by the British government he finally allied himself with it, supporting it in all frontier politics involving Russia and Persia.

DOUGLAS, STEPHEN ARNOLD (1813-1861). American statesman; born in Brandon, Vt. He represented Illinois in both houses of Congress, and was a member of the Senate from 1847 to his death. His re-election in 1858 was unsuccessfully contested by Lincoln. In 1860 the democratic Convention being divided on the slavery question, he was nominated by the moderates while John C. Breckinridge represented the extremists, he obtaining the largest popular vote next to Lincoln. When the South seceded he came to the support of Lincoln's government. "There can be no neutrals in this war," he said. His small stature and indomitable pluck gained him the title of "The Little Giant."

DRACO. An Athenian legislator who put into form, about 621 B. C., the common law of Athens. As the penalties seemed severe to later ages it has been said that his laws were written not in ink but in blood. Draco is said to have died in a theater in Aegina from suffocation by the garments of the people thrown upon him as a mark of respect.

DUDLEY, JOSEPH (1647-1720). A colonial governor of Massachusetts (1702-1715); son of Governor Thomas Dudley; born at Roxbury, Mass, and was graduated from Harvard in 1665.

DUDLEY, THOMAS (1576-1653). Second colonial governor of Massachusetts; born in Northampton, England. Came to the Massachusetts Bay Colony (1630) as deputy governor under Winthrop (1630-

1643); governor of the colony four times (1634, 1640, 1645, and 1650); was the chief founder of Newtown (now Cambridge, Mass.), and took an active part in founding Harvard (1636). His daughter was Anne Bradstreet, the poetess.

DUFFERIN AND AVA, FREDERICK TEMPLE HAMILTON BLACKWOOD, MARQUIS OF (1826-1902). British statesman and diplomat. Governor general of Canada (1872-1878); ambassador to Russia (1878-1881); to Turkey (1881-1884); governor general of India (1884-1888); ambassador to Italy (1888-1891); to France (1891-1896).

DUNSMUIR, HON. JAMES (1851-). Was owner of Esquimalt & Nanaimo Railway and sold it to the Canadian Pacific Railway with 1,500,000 acres of land; still owns 40,000 acres in British Columbia. Late premier and president of Executive Council of British Columbia, and has been lieutenant governor of British Columbia since 1906.

DUPLEIX (*du-plaiks*), **JOSEPH FRANCOIS** (1697-1764). Governor of the French Indies. He was the chief antagonist of the British in India, where he tried to secure the ascendency of the French, but Clive vanquished him completely and he was recalled by Louis XV. (1754) and ended his days in poverty.

DURHAM, JOHN GEORGE LAMBTON, FIRST EARL OF (1792-1840). British statesman and governor general of Canada (1838). Exceeded his powers in rebellion; censured by House of Lords; left office without being recalled or receiving royal consent. Important changes advocated by him later indorsed.

EDMUND IRONSIDE (about 981-1016). English king; son of Ethelred II.; great opponent of Canute and the Danes. At his father's death the Danes proclaimed Canute king, but the people favored Edmund; defeated by Canute at Assandun or Ethandun. The kingdom was divided, but, Edmund dying, Canute became sole king.

EDMUNDS, GEORGE FRANKLIN (1828-). American legislator, and author of the "Edmunds Act," or Anti-Polygamy Act of 1882, and another similar act of 1887. Member of the Electoral Commission (Hayes-Tilden) of 1877; United States senator from Vermont (1866-1891); president pro tem during Arthur's administration.

EDWARD THE CONFESSOR (about 1004-1066). King of England. He was the elder son of Ethelred the Unready. His mother, Emma, was married to Canute and thus Edward was the half-brother of Hardecanute, the last of the Danish kings of England. Edward lived in Normandy during the Danish possession of England. On the death of Hardecanute in 1042, Edward was chosen king. Earl Godwin was the real power during the reign. Edward passed his time in study and in religious works. He caused Westminster Abbey to be built. As his life had been spent in Normandy, his reign really prepared England for the Norman Conquest which immediately followed.

EDWARD, or EADWARD, THE MARTYR (about 963-979). King of England (975-979). Son and successor of King Edgar. The principal character during his reign was St. Dunstan, archbishop and statesman (925-988). Edward was assassinated in 979, probably at the instigation of his stepmother, Elfrida, who desired her son, Ethelred, to be king.

EDWARD I. (1239-1307). King of England (1272-1307). The eldest son and successor of Henry III. He was taken prisoner with his father at the battle of Lewes (1264), but escaped and defeated his enemies at the battle of Evesham (1265). He went to the Crusades (1270), and reached home in 1274, two years after his father's death. He waged war for 10 years with the Welsh, during which the famous Prince Llewellyn was slain. It ended in the annexation of Wales (1282). He next undertook the conquest of Scotland, in which he was opposed by Robert Bruce and Sir William Wallace. He carried off from the castle of Scone the famous stone upon which kings were crowned and which now stands in Westminster Abbey. While the king was on his way to chastise Bruce, he was taken ill and died. Edward was a great ruler and introduced sound financial, legal, and legislative reforms.

EDWARD II. (1284-1327). King of England (1307-1327). Son and successor of Edward I. On his father's death he gave up the conquest of Scotland. His early reign was contemptible and he became involved in a quarrel with his nobles over unworthy favorites. In 1314 Edward invaded Scotland with a large army and was met and defeated by Bruce with a small army at Bannockburn. In 1319 he concluded a peace with the Scotch for two years. He then became involved in another quarrel with his nobles and was taken prisoner. After a period of imprisonment he was murdered in Berkeley Castle in 1327. Edward II. was the first Prince of Wales, created in 1301.

EDWARD III. (1312-1377). King of England (1327-1377). Son and successor of Edward II. His mother and Mortimer ruled the kingdom until 1330, when Edward seized Mortimer and put him to death and imprisoned his mother, Queen Isabella. The Scots were defeated at Halidon Hill (1333). The Hundred Years' War began in 1337. Edward claimed the throne of France through descent from his mother, Isabella, daughter of Philip the Fair, whose sons were all dead. The French pleaded the Salic law and war began. The French were defeated at Cressy or Crécy (1346), where Edward the Black Prince showed remarkable bravery. Calais was reduced by the English and a nine months' truce concluded. In England the Scots were defeated at Neville's Cross (1346) and David II. taken prisoner. In 1356, at Poitiers, the English under the Black Prince defeated the French, and King John of France was taken prisoner.

EDWARD IV. (about 1442-1483). King of England (1461-1483). Son of Richard, Duke of York, who was the grandson of Edward III. His father was killed in the battle of Wakefield Green (1460). After routing the Lancastrian forces at the battle of Mortimer's Cross (1461), he marched to London and was crowned king. He defeated the Lancastrians at Towton (1461). He gave offense to the nobles by his marriage and Warwick raised an army which drove him out of England and Henry VI. was restored (1469). Edward returned in 1471 and met Warwick's forces at Barnet, where Warwick was defeated and slain. There was a steady growth of the constitution in this reign. Printing and silk making were introduced. Direct pleading in courts was adopted.

EDWARD V. (1470-1483). King of England (though never crowned). He was the son of Edward IV. and was 13 when his father died. He was taken care of by his uncle, Richard, Duke of Gloucester, who made himself protector of the kingdom. He confined Edward and his younger brother, the duke of York, in the Tower, where they were smothered by the uncle's commands. In the reign of Charles II., skeletons were found at the foot of the White Staircase in the Tower which were recognized as those of the young princes.

EDWARD VI. (1537-1553). King of England (1547-1553). Son of Henry VIII. and Jane Seymour. The First Prayer Book of the Church of England was compiled during his reign; the Scots were defeated at Pinkie (1547); Edward left the crown to Lady Jane Grey.

EDWARD VII. (1841-1910). King of Great Britain, Ireland, and British Dominions beyond the Seas (1901-1910); emperor of India; eldest son of Queen Victoria and the Prince Consort; born at Buckingham Palace, November 9, 1841. In 1860 he visited Canada and the United States, his visit to Washington's tomb creating a deep impression. Two years later he visited the Holy Land, and on March 10, 1863, married Princess Alexandra of Denmark. During his mother's long reign the Prince's career was one of great public activity and usefulness, while he frequently acted for the Queen in ceremonial and other public duties. In 1869 he visited Egypt and Ireland. In November, 1871, he was stricken with typhoid fever, and his life was for a time despaired of. He visited India in 1875 and Ireland in 1885. On the death of Queen Victoria (January 22, 1901) he became king. His numerous visits to the Continent did much to foster international good will. The Anglo-French *entente cordiale* is mainly due to his personal efforts, while his visit to Germany in the beginning of 1909 did much to bring about a better understanding between the two nations. The king's unfailing tactfulness and diplomacy obtained for him the title of "Edward the Peacemaker."

EDWIN or EADWINE (585?-633) King of Northumbria; son of Aella, king of Deira. Through his wife Ethelburga's influence he was baptized in 627, and Christianity rapidly spread. He was the founder of Edinburgh. He was slain at Heathfield, Yorkshire, while opposing the combined armies of Penda, king of the Mercians, and Cadwallan, king of Gwynedd.

EGBERT (? -839). A king of the English. In 802 he became king of the West Saxons (Wessex). Between 825 and 829 he conquered the other kingdoms of England and compelled them to acknowledge him as their overlord. He thus became the first king of all England. Toward the latter part of his reign he was involved in war with the Danes. He was defeated by them in 835, but in 837 was victorious over them.

EGMONT, LAMORAL, COUNT OF (1522-1568). Flemish soldier and patriot; born in Hainault, Flanders; distinguished himself at the court of Charles V., and was made captain general of Flanders. For refusing to take part in the suppression of the Huguenots, he was seized by the duke of Alva and beheaded at Brussels. Goethe has made him the hero of one of his tragedies.

ELECTORAL COMMISSION. A body consisting of Justices Clifford, Strong, Miller, Field, and Bradley; Senators Edmunds, Morton, Frelinghuysen, Thurman, and Bayard; and Representatives Payne, Hunton, Abbott, Garfield, and Hoar, by act of Congress (January 29, 1877), to settle the disputed votes of Florida, Louisiana, Oregon, and South Carolina in the presidential election of 1876 between Hayes and Tilden. By a vote of 8 to 7 the election was given to Hayes.

ELGIN, JAMES BRUCE, EIGHTH EARL OF (1811-1863). An English statesman; governor general of Canada (1847-1854); settled the free trade and fishery questions with the United States; consummated the Tientsin Treaty with China (1858); postmaster general of England; viceroy of India (1862 until his death).

ELIZABETH (1533-1603). Queen of England; daughter of Henry VIII. and Anne Boleyn; ascended the throne on the death of Mary (November 17, 1558). Her reign was one of the greatest in history. She placed the Protestant religion on a sure footing, repulsed the Armada, promoted exploration and colonization, and was a great patron of letters. Mary, Queen of Scots, was executed, having been proved privy to a plot against Elizabeth. The reign is celebrated for the mighty outburst of intellectual energy, represented by the immortal names of Shakespeare, Spenser, Marlowe, Raleigh, Sidney, and Bacon.

ELIZABETH PETROVNA (1709-1762). Empress of Russia; daughter of Peter the Great and Catherine I.; succeeded to the throne (1741). She aided Maria Theresa in the War of the Spanish Succession, and in the Seven Years' War frequently defeated Frederick the Great. She was able, and on occasion energetic, literature and art owing much to her patronage.

ELLENBOROUGH, EDWARD LAW, FIRST EARL OF (1790-1871). An English statesman; entered Parliament (1813); appointed governor general of India (1841), but recalled in 1844. Subsequently he was made first lord of the Admiralty and Indian minister by Lord Derby. He was one of the most distinguished orators of his day.

ENDICOTT, JOHN (1588-1665). One of the founders, and for many years a governor, of the colony of Massachusetts; born at Dorchester, England. In 1628 he led a band of settlers to Naumkeag (Salem), Mass. He gave way in 1630 to John Winthrop, and led an expedition to Block Island against the Pequots (1636); was deputy governor in 1641-1643, 1650, and 1654; governor in 1644, 1649, 1651-1654, and 1655-1665; elected president of the United Colonies of New England in 1658. He was a Puritan of the extreme type, but an able administrator.

EPAMINONDAS (about 418-362 B. C.). A Greek statesman and general; born in Thebes. He was commander in chief of the Theban army in the Theban war with Sparta. With 6,000 men he defeated a much larger force of Spartans at the battle of Leuctra (371 B. C.), and overthrew the supremacy of Sparta In 370 B. C. Epaminondas and Pelopidas unsuccessfully invaded Sparta. This expedition was followed by another in 368 B. C. and by a third in 366 B. C. Again in 362 B. C. he led a fourth against Sparta supported by strong allies, yet in the face of great odds Sparta was defeated in the battle of Mantinea, though Epaminondas fell in this battle. He was one of the best and noblest of all Greek characters.

ERIC I. OF SWEDEN (died about 854). He was especially noted for the protection which he extended to the Christians during his rule at the suggestion of Saint Ansgarius.

ERIC EDWARDSON or **SAINT ERIC.** King of Sweden (1150-1160). Christianized upper Sweden and built a number of churches and monasteries. He undertook a crusade against the Finns, which was the beginning of the long feuds between the countries. He compiled laws known as Saint Eric's Lag in which the rights of women were set forth.

ERIC XI. King of Sweden and Denmark (1222-1250). The most important events of his reign were the successes against the Finns; the imposition of celibacy upon the clergy by the synod of Skenninge (1248); and the invasion of Russia, which was checked by Alexander Newski in 1241. Birger Jarl rose to be the chief power in the state, and on the death of Eric, Waldemar, son of Birger Jarl, was crowned king.

ERIC OF POMERANIA (1382-1459). King of Norway, Sweden, and Denmark. (See MARGARET.) On the death of Margaret Eric's utter disregard for treaties, oaths, and promises led to dissensions among his subjects. In 1438 the Danes renounced their allegiance and chose Christopher of Bavaria as their king. In 1439 Sweden withdrew and Scandinavia was a scene of rebellion and bloodshed for many years. Eric fled to Gothland and for 10 years was a pirate. He had married Philippa, daughter of Henry IV. of England, and treated her cruelly.

ESARHADDON. A king of Assyria; son and successor of Sennacherib (680-668 B. C.). He avenged his father's death upon his two brothers and after a struggle of one year gained the throne. He marched successfully against the Chaldeans; captured and razed the city of Sidon; failed in his siege of Tyre; and, after two campaigns, took Egypt and erected it into an Assyrian province. He died while on his way to chastise the Egyptians for rebelling. He was succeeded by Asurbanipal.

ESPARTE'RO, JOAQUIN BALDOMERO, DUKE OF VITTORIA (1792-1879). A Spanish statesman and general who operated most successfully against the Carlist forces, and for his expulsion of Don Carlos from Spain (1839) became Duke of Vittoria and Morella and grandee of Spain; became military dictator (1841). His government was marked by great ability and energy, but was overthrown (1843), and Espartero driven into exile. Upon the abdication of Queen Isabella, he refused to become a candidate for the throne of Spain (1870).

ESTERHA'ZY DE GALAN'THA. An ancient Hungarian family, two branches, Zerházy and Illyeshazy, appearing as early as 1238. The first to become noted was **NICHOLAS** (1582-1645), palatine of Hungary, a strong supporter of the Counter-Reformation. Later **PAUL IV., PRINCE ESTERHAZY** (1635-1713), won distinction as field marshal of Austria at Saint Gotthard (1664), Vienna (1683), Buda (1686), and in the wars against the Turks. He died a prince of the empire. **NICHOLAS JOSEPH** (1714-1790), grandson of Paul IV., was privy councilor, field marshal, and several times ambassador; fought bravely during the Seven Years' War in Silesia. He was an ardent supporter of the arts and sciences. **NICHOLAS IV., PRINCE ESTERHAZY** (1765-1833), grandson of Nicholas Joseph, became prominent in diplomatic affairs; refused Napoleon's offer of the crown of Hungary (1809). **PAUL ANTHONY** (1786-1866); Austrian ambassador at Dresden (1800), Rome (1814), and London (1815-1842). **MORITZ COUNT ESTERHAZY** (1807-1890) diplomat and statesman, was also prominent.

ETHELBERT (552?-616). King of Kent; converted to Christianity by Augustine (597); drew up the first written Saxon code of laws, and so brought about a successful rebellion against himself under Raedwald.

ETHELRED II., THE UNREADY (about 968-1016). King of England (978-1016). His reign was marked by almost continuous warfare with the Danes, who began to plunder the coasts in 980. In 991 he bought them off; in 994 with the aid of Olaf, king of Norway, they besieged London. From 997 to 1000 they ravaged the coasts of Kent, Sussex, and Wessex. In 1000 Ethelred made war upon Normandy and was defeated by Duke Richard II., with whom he made peace. He also made peace with the Danes in the same year, but on the pretext that they were plotting against him, he ordered all of the Danes in England to be massacred on November 13, 1002. Sweyn, king of Denmark, sought swift revenge, and kept up a war for four years. In 1007 Ethelred bought them off In 1009 his fleet was wrecked in a storm. Another peace was bought in 1012. In 1013 Sweyn, with a

large fleet, attacked London, but turned off to Bath, where he was accepted as king by the people. London also acknowledged him and Ethelred fled to Normandy. Sweyn died in 1014 and Ethelred was recalled on promise of ruling better. He defeated Canute in the same year. In 1015 Canute returned with a larger army and Ethelred died as Canute was about to attack London.

EUGENIE (*eu-zhay'nee*) **(EUGENIE MARIA DE MONTIJO)** (1826-). Ex-empress of the French and wife of Napoleon III.; born in Granada, Spain; filled the office of regent at three different times in absence of Napoleon in the army (1859, 1865, 1870). In the eyes of many historians she was the sole cause of the downfall of the Second Empire. During the Franco-German War she was forced to flee to England (1870). Her only son, the Prince Imperial, was slain in the Zulu War.

EVERETT, EDWARD (1794-1865). American statesman and educator; born at Dorchester, Mass.; was appointed Eliot professor of Greek in Harvard (1815); was editor of the *North American Review* (1820-1824). He became successively a representative in Congress, governor of Massachusetts, and United States minister to Great Britain. In 1846 he became president of Harvard, and in 1852 secretary of state. He resigned in June, 1854. He was a celebrated orator of the old school, his best-known orations being the one on Washington and the Gettysburg Oration (delivered November 15, 1863).

EWING, THOMAS (1789-1871). American jurist and political leader; born near West Liberty, Virginia; was a whig member of the United States Senate from 1831 to 1837; secretary of the treasury (1841); first secretary of the interior (1849-1850); again elected to the Senate in 1850-1851. He was a supporter of Lincoln's war policy in 1861-1865.

FA'BIUS MAXIMUS, QUINTUS CUNCTATOR or **"THE DELAYER"** (? -203 B. C.). Roman consul five times and censor twice; was appointed dictator after the defeat of the Romans by Hannibal at Lake Trasimenus (217 B. C.). His tactics of harassing the enemy during the Second Punic War while avoiding a general engagement and so allowing Rome to strengthen her forces gave rise to the term "Fabian policy."

FAIRBANKS, CHARLES WARREN (1852-). American lawyer and politician; vice-president of the United States (1905-1909); born in Union County, Ohio; was graduated from Ohio Wesleyan University (1872); removed to Indianapolis, Ind. (1874); United States senator (1897-1905); member of United States and British Joint High Commission which met at Quebec (1898) to adjust Canadian questions.

FALIERI, MARINO (about 1275-1355). A Venetian doge, elected to office at 80 years of age. Incited a rebellion to overthrow the state and massacre the aristocracy because of, as he thought, an insufficiently punished insult to his young wife by a member of the nobility. Convicted of high treason and beheaded.

FALLIERES, CLEMENT ARMAND (1841-). Eighth president of France (1906). Of peasant parentage; became a lawyer; elected to Chamber of Deputies (1876); minister of the interior (1882, 1883, and 1887); minister of public instruction (1883-1885 and 1889-1890); minister of justice (1887-1888 and 1890-1892); senator (1890) and re-elected (1897); president of the Senate (1899); re-elected for eight successive terms.

FARINI, LUIGI CARLO (1812-1866). Italian statesman and historian. Exiled to France (1843); general secretary in Liberal Cabinet (1847); director general of sanitary department; minister of public instruction (1851); proclaimed dictator at Modena (1859); influenced strongly a united Italy (1860), ranking with Garibaldi and Cavour in the long struggle; minister of the interior; asked to form a new ministry (1862). His history of the *Roman State* (1853) established his reputation as a historian.

FAURE, FRANCOIS FELIX (1841-1899). President of France (1895-1899); succeeded M. Casimir-Périer. The Fashoda affair and the beginning of the Dreyfus retrial agitation occurred during his otherwise quiet administration.

FERDINAND I. (1503-1564). Holy Roman emperor (1556-1564). Second son of Philip of Austria and the younger brother of Charles V. of Germany, who was Charles I. of Spain. On the abdication of Charles V., Ferdinand succeeded. He was an enlightened ruler; succeeded by his son, Maximilian II.

FERDINAND II. (1578-1637). Holy Roman emperor (1619-1637). Grandson of Emperor Ferdinand I. and son of Charles, Duke of Styria. He formed with Maximilian the Catholic League; king of Bohemia (1617); king of Hungary (1618). The Thirty Years' War began in this year. The chief blot on Ferdinand's name is the assassination of Wallenstein, of which he was, at least, privy. He left a heritage of war to his son, Ferdinand III.

FERDINAND III. (1608-1657). Holy Roman emperor (1637-1657). Son and successor of Ferdinand II. King of Hungary (1625); king of Bohemia (1627). Succeeded Wallenstein in command of the forces (1634); defeated the Swedes and their allies at Nördlingen (1634). He was succeeded by his son, Leopold I.

FERDINAND V. (1452-1516). Founded the Spanish monarchy. Joint sovereign with his wife, Isabella. The year 1492 was the most brilliant of his reign, marking not only the discovery of America by Columbus, but also the entry of Ferdinand and Isabella into Granada and the end of the Moorish occupation.

FERDINAND I. (1861-). Tsar of Bulgaria since October 5, 1908; born at Vienna; youngest son of Prince Augustus of Saxe-Coburg. Parliament chose him to succeed (1887) Alexander of Battenberg as prince, but the great Powers and Turkey did not recognize his sovereignty until March, 1896. Taking advantage of the Turkish Revolution (1908), Bulgaria renounced its allegiance to Turkey and became independent. Ferdinand assumed the title of "tsar."

FERRY (*fay-ree'*), **JULES FRANCOIS CAMILLE** (1832-1893). A French statesman; born at Saint Dié (Vosges); member of National Defense government (1870) and mayor of Paris; minister to Athens (1872-1873); minister of public instruction (1879). He brought in a bill against Jesuitic instruction, and so took the first step toward the final expulsion of the order. He became premier in 1880, and again as minister of education (1882) passed an act making primary education compulsory and gratuitous; became again premier in 1883, when his schemes of colonial expansion involved the nation in a war in Madagascar and Tongking, and brought about the defeat of his ministry in 1885. From 1893 to his death he was president of the Senate.

FESSENDEN, WILLIAM PITT (1806-1869). American statesman; born in Boscawen, N. H.; elected United States senator (1854); opposed the Kansas-Nebraska Bill; secretary of the treasury (1864) during the blackest financial period in the history of the country. Gold was at 280, a paper dollar was worth 34 cents, and the government had just withdrawn a loan from the market which it could not float. Fessenden issued the "seven-thirty" bonds. Gold fell to 199 and Fessenden went back to the Senate. He voted in favor of Johnson's acquittal on his impeachment. He was one of the leaders in the Senate during the early Reconstruction period.

FIELDING, HON. WILLIAM STEVENS (1848-). Born in Halifax, Nova Scotia. Liberal member for Halifax county (1882); provincial secretary and treasurer (1882); resigned to attend to editorial duties (1884); formed new cabinet and became provincial secretary. Minister of finance and member of House of Commons (1896); introduced new tariff policy, advocating preferential trade with Great Britain (1897), and later the measures imposing a surtax on German products in consequence of German action adverse to Canada. Vice chairman Ottawa Reform Convention (1893); Vice president Maritime Provinces Liberal Association (1895); president St. George's Society.

FISH, HAMILTON (1808-1893). American statesman; son of Nicholas Fish (1758-1833), a revolutionary soldier; born in New York City; entered Congress (1842); became governor (1848); member of Senate (1851-1857), first as a whig and then as a republican. He opposed the Kansas-Nebraska Bill of 1854; was secretary of state in Grant's Cabinet (1869-1877), and was one of the Joint High Commission that negotiated the Treaty of Washington (1871), and assisted in the arbitration of the Alabama Claims.

FISHER, CHARLES (1808-1880). A Canadian statesman. Member of the New Brunswick Cabinet (1837); of the Executive Council (1848-1857); consolidated and codified the statutes (1852); attorney general (1854-1861 and 1866); one of the representatives of British North America in London when articles of confederation of the provinces into the

Dominion of Canada were arranged (1867); judge of the Supreme Court of New Brunswick until his death.

FLAMININUS, TITUS QUINCTIUS (228?-174? B. C.). Roman consul and general; defeated Philip V. of Macedon in the decisive battle of Cynoscephalæ (197 B. C.) and earned the title of "The Liberator" of the Greeks. In 192 B. C. he proceeded against Antiochus, king of Syria, but returning the following year, he was made censor.

FLAMINIUS, GAIUS (? -217 B. C.). Roman general and consul, famous in the Gallic and Hannibalic wars. He also built the Via Flaminia and the Circus Flaminius at Rome. He was defeated and slain by Hannibal's forces at the battle of Lake Trasimenus, in which 15,000 of his troops perished.

FLAVIAN EMPERORS. Vespasian and his two sons, Titus and Domitian.

FLOYD, JOHN BUCHANAN (1807-1863). Confederate leader; born at Blacksburg, Va. State legislator (1847-1849); governor of Virginia (1850); secretary of war (1857-1860). Confederate brigadier general; in command at Fort Donelson, fled, leaving General Buckner to surrender.

FORGET, HON. AMEDEE EMMANUEL (1847-). Born in province of Quebec; called to bar (1871); secretary Manitoba Half-breed Commission (1875); member Public Board of Education for Territories; Indian commissioner (1895); lieutenant governor of Northwest Territories (1898-1905); first lieutenant governor province of Saskatchewan, in office since 1905.

FORSYTH, JOHN (1780-1841). An American politician; born in Fredericksburg, Va. Attorney general of Georgia (1808); elected to Congress (1812, 1814, and 1816); United States senator (1818-1819); United States minister to Spain (1819), where he negotiated the sale of Florida; re-elected to Congress (1822 and 1824); governor of Georgia (1827-1829); United States senator (1829-1834); secretary of state under Jackson and Van Buren (1834-1841).

FOSTER, CHARLES (1828-1904). An American politician and Cabinet officer; born near Tiffin, Ohio. Elected to Congress (1870-1879); governor of Ohio (1879-1884); secretary of the treasury in Harrison's Cabinet to succeed William Windom.

FOSTER, GEORGE EULAS (1847-). A Canadian politician; born in Carleton, New Brunswick. Professor of history and classics in the University of New Brunswick (1871-1879); public lecturer on temperance and sociology; elected to the House of Commons (1882) from Kings County; minister of marine and fisheries in the Macdonald government (1885) and prepared Canada's brief to present to the commission at Washington on the deep-sea fisheries dispute; minister of finance (1888-1896).

FOSTER, JOHN WATSON (1836-). American diplomatist; born in Pike County, Indiana; was graduated at Indiana State University (1855); admitted to the bar; fought in Civil War and became colonel; edited the Evansville *Daily Journal* and was postmaster of that city (1869-1873); minister to Mexico until 1880, to Russia until 1881, and to Spain from 1883-1885; secretary of state in 1892-1893; member of the Anglo-Canadian Commission (1898). He is the author of *A Century of American Diplomacy, American Diplomacy in the Orient,* and *Arbitration and The Hague Court.*

FOUQUIER-TINVILLE (*foo-ke-ay' tan-veel'*), **ANTOINE QUENTIN** (1747-1795). Public accuser of the Revolutionary Tribunal during the Reign of Terror, performing his duties with pitiless severity; as free from personal bias as proof against corruption. Bravely met his own death by guillotine (May, 1795).

FOX, CHARLES JAMES (1749-1806). English statesman; born in London. Entered Parliament in 1768 as a tory, but from 1774 to 1782 was the leader of the whigs, and strongly opposed to Lord North's American policy. In 1783 he formed a short-lived coalition ministry with Lord North, and from 1784 he was in opposition. Burke describes him as "the most brilliant and accomplished debater that the world ever saw."

FRANCIA, JOSE GASPAR RODRIGUEZ (1757-1840). Dictator of Paraguay; born at Asuncion; practised as a barrister; in 1811 became secretary to the newly established government of Paraguay. In 1813 he became one of the consuls, and on the death of Yegros, his colleague, sole ruler. From 1817 until his death he was dictator of the republic. He was opposed to all foreign intercourse and to all religion.

FRANCIS I. (1494-1547). King of France; son of Charles of Angoulême; born at Cognac, France; succeeded Louis XII., who died without male issue (1515). He became involved in a series of wars with Germany; was defeated and captured at the battle of Pavia (1525); signed the Treaty of Madrid (1526); and of Crespy (1544). He sided with the Protestants abroad, while persecuting them in his own kingdom. His son, Henry II., succeeded him.

FRANCIS II. (1544-1560). King of France; succeeded his father, Henry II., in 1559 and reigned one year. In 1558 he married Mary, Queen of Scots.

FRANCIS JOSEPH I. (1830-). Emperor of Austria since 1848; son of the Archduke Francis. A revolution was in progress at the time of his accession, and war with Hungary soon broke out. But the emperor subdued the enemy, at the same time defeating the Italian insurgents. Austria lost Lombardy to the Italians (1859), and after Sadowa (1866) was forced to give Venetia to Italy. The differences between Austria and Hungary were settled by forming the Austro-Hungarian state (1867). The emperor's son having died (1889), the heir to the throne is Francis Ferdinand, son of the emperor's brother. Through his personality he has held the Austria-Hungary Empire together under most discouraging political conditions. The country has enjoyed most marked industrial success.

FRANKLIN, BENJAMIN (1706-1790). An American statesman, diplomatist, and author. He was born at Boston; son of a tallow-chandler; the 15th of 17 children; apprenticed to his brother, James, as a printer (1719); eventually settled in Philadelphia and founded the *Pennsylvania Gazette* (1728), and began to publish *Poor Richard's Almanac* (1732), which for 25 years made "Poor Richard" a household word. In 1730 he married Deborah Read of Philadelphia, who died in 1774. In 1736 he was appointed clerk of the General Assembly of Pennsylvania, and in 1750 was elected a member of the Assembly. He was postmaster of Philadelphia (1737), and from 1753-1774 was one of the two deputy postmaster generals for North America. He held many posts of public trust, while his scientific discoveries gained him an international reputation. Honors were showered upon him, both at home and abroad, and he was the most conspicuous figure in the America of his day. His last public act was the signing of an anti-slavery petition to Congress. He died April 17, 1790, mourned by the entire nation. Franklin's literary reputation rests mainly on his unfinished *Autobiography.* His chief contributions to science are his various electrical discoveries and his invention of the lightning conductor. He rendered the greatest service to his country by his skill in diplomacy, especially while acting as plenipotentiary abroad.

FREDERICK I., BARBAROSSA or **REDBEARD** (1121-1190). Holy Roman emperor (1152-1190). Nephew and successor of Conrad III. as king of the Germans. After securing order in Germany he sought to re-establish the imperial power in Italy. On receiving the Lombard crown he went to Rome and set Adrian IV. in the papal chair and was crowned emperor. In 1158 he besieged and took Milan; in 1159 began the long contest between Frederick and the pope, Alexander III., the successor of Adrian IV. In 1160 he took Crema; in 1161 and 1162 he took and razed to the ground Milan. He set up Victor IV. as an antipope. After many triumphs he was defeated at Legnano by the Lombards, and in 1183, by the Peace of Constance, he gave many privileges to the Lombard cities. In 1177 he made peace with Pope Alexander III. and resumed the contests with the Guelphs. In 1189, with a prospect of peace, he resigned his empire to his son, Henry, and set out with 100,000 men for the Holy Land. After some victories he was drowned in a small stream in Cilicia.

FREDERICK II. (1194-1250). King of Sicily (1197-1250) and Holy Roman emperor (1215-1250). Grandson of Frederick I., Barbarossa, and son of Henry VI. He caused the deposition of Otho IV. in 1214 after the battle of Bouvines and was crowned king in 1215, and emperor in 1220. He organized his Italian possessions, founded the University of Naples, and patronized literature and the arts. He set out in 1227 on a crusade, but returning in three days under pretense of illness was excommunicated by the pope. In 1228 he set out again, made a 10 years' truce with Saladin, took Jerusalem and the land about Jaffa and Nazareth, and crowned himself king of Jerusalem. The rest of his reign was spent in a struggle with the Lombards and the papacy.

FREDERICK III. (1415-1493). Holy Roman emperor (1440-1493). As king of Germany he had the title of Frederick IV. He was elected to succeed Albert II. in 1440. His long reign of 53 years was uneventful. From his time the imperial dignity remained permanently in the House of Austria. He was succeeded by his son, Maximilian I.

FREDERICK I. (1657-1713). First king of Prussia; succeeded his father, the "Great Elector," in 1688. He founded the University of Halle (1694) and extended the dominions of Prussia.

FREDERICK II., THE GREAT (1712-1786). King of Prussia; born in Berlin; succeeded in 1740; invaded Silesia, almost the whole of which was ceded to him by Maria Theresa (1742). In 1756 he invaded Saxony and so began the Seven Years' War against the allied armies of Austria, France, and Russia. His forces were decimated, and on the death of Elizabeth of Russia, France grew tired of the struggle, and Austria, not caring to continue singlehanded, signed the treaty of Hubertsburg in 1763, by which Frederick was allowed to retain his kingdom intact. During the ensuing period of peace he devoted himself to the development of the country. In the first partition of Poland (1772) he managed to acquire West Prussia. He cultivated the French language and authors in preference to German, and was a friend and admirer of Voltaire. He was a voluminous writer himself, but wrote chiefly in French.

FREDERICK WILLIAM (1620-1688). Elector of Brandenburg; known as the "Great Elector"; born at Berlin; succeeded his father (1640). He ranks next to Frederick the Great as the chief founder of the Prussian monarchy; he established the University of Duisburg and the Royal Library at Berlin. On ascending the throne he found an empty exchequer and a country devastated by Swede and Imperial troops during the Thirty Years' War. He brought order out of chaos, and prosperity from ruin; suffered several wars and hard reverses, but by 1680 was at peace and prospering. After the revocation of the Edict of Nantes 20,000 French Protestants were received; he encouraged immigration from Holland; increased population; introduced many industries; opened canals; established a system of posts; beautified Berlin.

FRELINGHUYSEN, FREDERICK THEODORE (1817-1885). American politician; born in Millstone, N. J.; admitted to the bar (1839); United States senator (1866-1869 and 1871-1877). He was a member of the Electoral Commission and secretary of state under President Arthur (1881-1885).

FREMONT, JOHN CHARLES (1813-1890). American explorer; born at Savannah, Ga.; explored Des Moines River (1841) and the Rocky Mountains (1842). In 1846 he arrived in California and soon afterwards a number of American residents captured the town of Sonoma from the Mexicans. This is known as the "bear-flag revolt." During the war with Mexico he was court-martialed for disobedience and had to leave the service. In 1848 he made his fourth expedition to discover a direct route to California. He was governor of Arizona (1878-1881), and in April, 1890, was made major general and put on the retired list.

FRONTENAC, LOUIS DE BUADE, COMTE DE (about 1621-1698). The greatest French governor of New France (now Canada). Succeeded De Courcelles as governor (1672); convened the clergy, nobles, and commons, and established formal government at Quebec. Quarrels ensued with the Jesuits, Intendant Falon, and the governor of Montreal. Frontenac was recalled by the king (1682), but was restored in 1689 and held office till his death. He dealt tactfully with the Indians, restrained the Iroquois, and defeated Sir William Phips at Quebec (1690).

FRYE, WILLIAM PIERCE (1831-). American legislator; born at Lewiston, Maine. Elected to Congress (1871) and re-elected five times; entered the Senate (1881) as Blaine's successor; re-elected in 1883, 1889, 1895, and 1901; president pro tempore (1896); permanent presiding officer after Hobart's death (1899) and again on McKinley's death (1901); member of the Peace Commission at Paris at the close of the Spanish-American War (1898).

GABINIUS, AULUS (? -about 47 B. C.). A Roman politician. Tribune of the plebs (66 B. C.); passed the famous Gabinian law which gave Pompey command of the war against the pirates; pretor (61 B. C.); consul (58 B. C.); supported the banishment of Cicero; proconsul in Syria (57 B. C.); invaded Egypt and set Ptolemy Auletes on that throne against the command of the Senate (55 B. C.); on his return to Rome, though defended by Cicero, he was banished; recalled by Caesar (49 B. C.); died in Illyricum.

GADSDEN, CHRISTOPHER (1724-1805). American patriot; born in Charleston, S. C.; was educated in England; delegate to the international convention held in New York City (1765) to protest against the Stamp Act; member of first Continental Congress, Philadelphia (1774); commissioned colonel at outbreak of the Revolution; made brigadier general (1776); prisoner at Fort Augustine for two months; exchanged (1781); elected governor of South Carolina (1782), but refused to serve because of age and infirmities.

GADSDEN, JAMES (1788-1858). American diplomatist; born in Charleston, S. C.; served with distinction in the War of 1812 and in the Seminole War (1818), in which he was aide-de-camp to General Jackson; United States minister to Mexico (1853); negotiated the Gadsden Purchase, which determined the boundary between Mexico and the United States.

GAGE, LYMAN JUDSON (1836-). American financier and statesman; born in Deruyter, N. Y.; removed to Chicago (1860); president of directors of the World's Fair (1892); secretary of the treasury under McKinley (1897); resigned (1902) and was succeeded by Leslie M. Shaw.

GAGE, THOMAS (1721-1787). English general and colonial governor of Massachusetts (1774-1775); in 1763 was made commander in chief of the British forces in America. He returned to England (1772), but in 1774 was ordered to Boston, where he enforced the Boston Port Bill and other obnoxious regulations, thus provoking the rebellion. On news of the battles of Lexington and of Breed's Hill reaching England, he was recalled, and sailed from Boston (October 10, 1775). In April, 1782, he was promoted general.

GAGERN (*gah'gern*), **HEINRICH WILHELM AUGUST, BARON VON** (1799-1880). German statesman; born at Bayreuth; was elected president of the National Assembly which met at Frankfort (May 18, 1848) and did much to promote the unification of Germany. He served as major in the Schleswig-Holstein War (1850). He died at Darmstadt.

GALBA, SERVIUS SULPICIUS (3 B. C.-69 A. D.). Roman emperor from June, 68, to January, 69. He was a prominent military officer under Caligula, Claudius, and Nero, conducting German campaigns. He was made emperor by the soldiers on the death of Nero. He offended them by not giving the customary donations and in other ways. A rebellion arose against him and as he crossed the Forum to quell it he was cut down by the soldiers.

GALLATIN, ALBERT (1761-1849). An American statesman and financier; born at Geneva, Switzerland. In 1789-1790 he was a member of the Pennsylvania Constitutional Convention. In 1793 his election to the United States Senate was declared void; served in the House of Representatives (1795-1801); secretary of the treasury (1801-1813). He was one of the foremost financiers of America. From 1816 to 1823 he was United States minister to France, and in 1826-1827 minister to Great Britain; was president of the National Bank of New York (1829-1839).

GALLISSONNIERE, ROLAND MICHEL BARRIN MARQUIS DE LA (1693-1756). Governor general of Canada under the French (1747-1749); successor of Beauharnais. He planned a chain of forts in the Mississippi valley to connect Louisiana and Canada, of which a few were built. He also advanced a colonization scheme in the Ohio valley to check the progress of the English colonies. This he was unable to carry out for lack of colonists. In 1756 he defeated the English fleet off Minorca, which caused the court-martial and execution of Admiral Byng.

GALT, SIR ALEXANDER TILLOCH (1817-1893). Canadian statesman and financier; inspector general of finances in the Cartier-Macdonald Cabinet until 1862; finance minister in the Tache-Macdonald Cabinet (1864-1866); the first finance minister of the Dominion of Canada (1867-1868); high commissioner of Canada to England (1880-1883).

GAMBETTA, LEON (1838-1882). French statesman; born at Cahors. An extreme republican, he was minister of the interior in the first provincial government. Escaping from besieged Paris (1870) in

a balloon, he conducted the war from Tours, having full dictatorial powers. He was the most influential man in France, and became premier in 1881, but resigned after 66 days (1882).

GARFIELD, JAMES RUDOLPH (1865-). United States Cabinet officer; born at Hiram, Ohio; son of James A. Garfield, twentieth president of the United States; was graduated at Williams College (1885); admitted to the bar (1888); was a member of the Ohio Senate (1896-1899); and became secretary of the interior (1907), serving until the expiration of President Roosevelt's term.

GATES, SIR THOMAS (? -about 1621). The first regular colonial governor of Virginia under the Virginia Company; one of the incorporators of the first Virginia charter (1606); as first deputy governor he sailed for Virginia in 1609.

GENET (*zha-na'*), **EDMOND CHARLES EDOUARD** (1765-1834). A French diplomat. After service in several French embassies to European courts he was transferred in 1793 as "minister plenipotentiary to the Congress of the United States." He came with the avowed purpose of stirring up war with Great Britain. Encouraged by a warm reception he began to solicit privateers against English commerce and to fit out an expedition to take Louisiana from Spain. Washington and Jefferson refused to be drawn into the affair and warned him to desist. After setting them at defiance they took a firm hand with him and the French government recalled him. He was afraid to return home, and settled in New York.

GENGHIS KHAN (1162-1227). A Mongol chief and conqueror. He succeeded his father when only 13. Some chiefs refused to acknowledge him and a long war resulted, and Genghis was obliged to seek shelter with Ungh Khan, who gave him command of his army and his daughter in marriage. Through his success in arms his master's jealousy was aroused, and Genghis fled back to his own people, where he arrived safely with 5,000 cavalry. He raised an army and defeated Ungh Khan, who in turn fled. After the defeat of some jealous Tatars he became master of all Mongolia. He conquered the northern part of China, scaled the Great Wall in 1211, and entered Peking in 1215. In 1219 he continued his conquest of Asia, and in the following years overran Persia, Russia, and the whole of southern Asia.

GENSERIC (? -477). King of the Vandals. In 429 he invaded Africa, and all Africa west of Carthage fell into his hands in the quarrel between Actius and Boniface. In 439 he made Carthage the capital of his dominions. He also took Sicily, Sardinia, and Corsica. He encouraged Attila to attack Rome. In 455, at the invitation of Eudoxia, widow of Valentinian, he marched against Rome to avenge her on Maximus. He took the city, gave it up to a 14 days' pillage by his men, and took the empress and her two daughters prisoners. Genseric died in 477 at the height of his power, which gave him the title to the greatest of all of the kings of the Vandals.

GEORGE I. (1660-1727). King of Great Britain and Ireland (1714-1727); son of Ernest Augustus, elector of Hanover, and Sophia, daughter of Frederick, elector of Palatine, who married Elizabeth, daughter of James I. His preference for Hanover made him unpopular in England. The failure of the Jacobite rebellion (1715) and the strong foreign policy of Stanhope, Walpole, and Townshend, strengthened the new dynasty. The development of cabinet government was a feature of his reign.

GEORGE II. (1683-1760). King of Great Britain and Ireland; succeeded his father (1727); during the Austrian Succession War (1740-1748) he fought in the battle of Dettingen (1743). This was the last battle at which an English king was present. He defeated the Young Pretender at Culloden (1746) and secured victories over the French in Canada and India.

GEORGE III. (1738-1820). King of Great Britain and Ireland; son of Frederick Louis, eldest son of George II.; born in London; ascended the throne in 1760. The imposition of the American Stamp Act, and the obstinacy of George and his ministers, drove the American colonies to rebellion. Pitt, the prime minister, formed the triple alliance between England, Holland, and Prussia (1788). In 1793 France declared war with England, which ended in the defeat of Napoleon at Waterloo (1815). The Irish rebellion of 1798 brought about the union of England and Ireland in 1801. The king became insane in 1811 and his son, George IV., acted as regent.

GEORGE IV. (1762-1830). King of Great Britain and Ireland (1820-1830); eldest son of George III. His secret marriage with Mrs. Fitzherbert was declared illegal, and in 1795 he married Caroline of Brunswick (died 1821). He became regent in 1811, and the following year England was at war with America. In 1828 the test and corporations acts were repealed, and in 1829 the Catholic emancipation bill was passed.

GEORGE V. (1865-). "The Sailor King." King of Great Britain, Ireland, and the British possessions beyond the seas; emperor of India; second son of King Edward VII. and Queen Alexandra; born June 3, 1865. Educated at the royal naval academy, he was rapidly promoted, becoming captain in 1893, when his brother's death made him Duke of York; Prince of Wales (1901). He married Princess Mary Victoria of Teck, June 6, 1893; became king May 6, 1910.

GEORGE I. (1845-). King of Greece (1863-). Second son of King Christian IX. of Denmark. Before his accession he was known as Prince William of Denmark. King Otto of Greece was deposed by the National Parliament in 1862 and the following year the Prince was chosen King of the Hellenes by the same body at Athens with the consent of the great powers, ascending the throne as George I.

GERMAIN, GEORGE SACKVILLE, VISCOUNT SACKVILLE (1716-1785). English soldier and politician. Fought in command under Marlborough until his refusal to obey Ferdinand's orders at the victorious battle of Minden (1759), for which he was dismissed from the army by George II. George III. restored him to the Privy Council and he began to ardently support Lord North. As secretary of state for the colonies (1775-1782), he had charge of the conduct of the war in America and did much to imbitter the colonists by his harsh measures, by employing mercenaries and Indians, and by his determined opposition to all peaceful measures.

GIBSON, HON. JOHN MORISON (1842-). Educated at Central School, Hamilton, and at Toronto University, gaining Prince of Wales prize, medals in classics and modern languages; LL.B. with gold medal (1869); LL.D. (1903); called to bar of Upper Canada (1867); provincial secretary of Ontario (1889); commissioner of crown lands (1896); attorney general (1899-1905); made queen's counsel (1890); bencher of Law Society of Upper Canada (1899); honorary lieutenant colonel of 13th regiment (1895); colonel commanding 13th brigade Canadian militia (1903); president Dominion Rifle Association 14 years; won Prince of Wales prize at Wimbledon (1879); commander Canadian rifle team to Wimbledon (1881), and to Bisley (1907). President of Canadian branch Red Cross Society; honorary aide-de-camp to Earl of Aberdeen and Earl Minto when governors general of Canada, and very prominent in many other national matters. Lieutenant governor of Ontario since 1908.

GIRONDISTS. Named after department of Gironde in France. The moderate republican party of the French Revolution; condemning the Reign of Terror, many being arrested for alleged conspiracy against the republic. Among those guillotined were Brissot, Verniaud, Gensonné, Sillery, Madame Roland.

GLADSTONE, WILLIAM EWART (1809-1898). British statesman; born in Liverpool; was educated at Eton and Christ Church; entered Parliament (1833) as member for Newark. His talents and oratorical powers marked him out for leadership and responsibility. He held many ministerial appointments, but none with greater distinction than that of chancellor of the exchequer. From 1867 to his death he was leader of the Liberal party, and his name was always identified with free trade, equitable taxation, manhood suffrage, and popular education. He first became prime minister in 1861, the leader of the opposition being his powerful rival, Disraeli. In 1886, during his third premiership, he introduced and almost carried the Home Rule Bill for Ireland. This caused a split in the Liberal party. In 1892, during his fourth and last ministry, he carried the amended bill through the Commons, but it was thrown out by the lords. He retired from office, March 3, 1894. His works include *Studies on Homer*; *Gleanings from Past Years*, being eight volumes of literary and political essays contributed to the *Quarterly Review* and other periodicals; and *Speeches* and *Letters*. The best life of Gladstone is written by John Morley (1902). Gladstone was the greatest of the Victorian statesmen, and his political life was inspired by the loftiest sense of public duty. His foreign policy was weak,

and his domestic measures were not always well advised, but no one ever doubted the sincerity of his aim or his devotion to his countrymen. The British working classes in particular owe him a lasting debt of gratitude.

GODWIN or **GODWINE** (? -1053). An earl of the West Saxons. He was Canute's most powerful official (1020); practically made Edward the Confessor king and thereafter was the leader of the English against the Norman nobles. In 1051 the Normans complained that the citizens of Dover had ill-treated some of their friends; Edward ordered Godwin to punish them; on Godwin's refusal the king outlawed him and he fled to Flanders. In 1052 he sailed with a force against the king and compelled him to yield.

GOEBEL, WILLIAM (1856-1900). American politician; born in Sullivan County, Penn.; removed to Covington, Ky. State senator (1887-1898); in 1897 secured the passage of the "Goebel Bill," which placed appointment of election officials in the hands of a commission. It was aimed to secure democratic control of the state. The bill was passed over the veto of Governor Bradley and declared constitutional by the Supreme Court. In the contest for governor in 1899, Goebel was a candidate. W. S. Taylor, the Republican candidate, was declared elected by a majority of 2,300 votes. Goebel contested the election, and, as a result of the political excitement, was shot. Next day the Democratic members of the legislature declared him elected, and the oath of office was administered to him on January 31st.

GONZALEZ, MANUEL (1833-1893). Mexican soldier and president; fought against the European invaders in 1861, and became brigadier general in 1867. He was secretary of war under Diaz (1878), and became president (1880). In 1884 he resigned in favor of Diaz, and afterwards became governor of Guanajuato.

GORDON, JOHN BROWN (1832-1904). American soldier and politician; born in Upson County, Ga. In the Confederate army he rose to the grade of lieutenant general and was in command of one wing of Lee's army at the surrender at Appomattox. United States senator (1873-1880 and 1891-1897); one of the Democratic leaders and an eloquent speaker; governor of Georgia (1887-1890).

GORMAN, ARTHUR PUE (1839-1906). United States senator; born in Maryland. A conspicuous leader of the Democratic party for over 30 years. Senator (1881-1899 and 1903-1906). Led the opposition to the Force Bill (1889) and was one of the remodelers of the Wilson Tariff Bill (1894). He made a study of the canal projects across the isthmus and favored the Nicaraguan route.

GORTSCHAKOFF (*gort-cha-kof*), **PRINCE ALEXANDER MICHAILOVITCH** (1798-1883). Russian statesman; born at St. Petersburg; Russian ambassador at Stuttgart and Vienna (1854-1856); appointed chancellor in 1863 and was for many years the most influential minister in Europe. He promoted the Franco-Russian agreement, which Bismarck met by the triple alliance.

GOULBURN, HENRY (1784-1856). An English statesman. He held several cabinet positions and was one of the peace commissioners at the close of the War of 1812. He was highly respected by all parties during his honorable career.

GRACCHUS, GAIUS SEMPRONIUS (159-121 B. C.). Roman statesman. After his brother's murder, he returned from Spain to Italy; made questor (126 B. C.) and began to avenge his brother's death; tribune in 123 B. C. and again in 122 B. C., he sought to enforce his brother's laws and to extend the franchise to the Italian allies. The aristocracy plotted secretly against him and he was pursued. All hope of escape being cut off, he caused his faithful slave to kill him.

GRACCHUS, TIBERIUS SEMPRONIUS (163-133 B. C.). Brother of the preceding. Roman statesman. Took part in the destruction of Carthage (146 B. C.); tribune of the people (133 B. C.), and introduced a land bill to relieve their sufferings and concerning a fairer distribution of wealth. In a riot at the ensuing elections Gracchus was slain.

GRANGER, GIDEON (1767-1822). An American politician; born in Suffield, Conn. Appointed postmaster general of the United States by Jefferson, which post he held for 13 years. He was the first to suspect Burr, in 1804, of a conspiracy with the Federalists.

GRATIAN (GRATIANUS AUGUSTUS) (359-383). Roman emperor (367-383). Eldest son and successor of Valentinian I. During his father's life he shared the government of the West with him. When he became sole ruler on the death of his father he took his brother, Valentinian II., as his colleague. Gratian took Gaul, Spain, and Britain; Valentinian, though only four years old, took the rest of the West; and Valens held the East. When Valens was killed by the Goths, Gratian took the East and recalled Theodosius from Spain and appointed him colleague in 379. Persecutions of pagans and heretic Christians marked his reign and made him unpopular. Maximus was proclaimed emperor by the legions in Britain. Gratian was defeated by him near Paris, and was killed at Lyons, whither he had fled.

GREVY (*gray-ve'*), **FRANCOIS PAUL JULES** (1807-1891). French statesman and third president of France. He was elected a deputy in 1868, and became president of the National Assembly (1873). In 1876 he was made president of the Chamber of Deputies, and succeeded MacMahon as president of the republic in 1879, being re-elected in 1885. He resigned in 1887 on account of the scandal connected with his son-in-law, Wilson, who was charged with trafficking in decorations.

GREY, EARL (1851-). Governor general of Canada (1904-). Member of Parliament for South Northumberland (1880-1885); for Tyneside (1885-1886); succeeded to the peerage (1894); administrator for British South Africa Company's Territories (1896-1897); director of the company (1898).

GREY, LADY JANE (1537-1554). "The nine days' queen" of England; born at Bradgate, Leicestershire; great-granddaughter of Henry VII.; married Lord Guilford Dudley, son of the duke of Northumberland. The latter proclaimed her queen on the death of Edward VI. (1553), but the usurpation was short-lived and Mary was proclaimed on July 19, 1553. The ill-fated Lady Jane and her husband were beheaded in the Tower (February 12, 1554).

GROW, GALUSHA AARON (1823-1907). American politician; born at Ashford, Conn. Member of Congress from Pennsylvania (1851-1863); speaker (1861-1863); congressman (1894-1904).

GUATEMOTZIN (*gwah-tay-mot-seen'*) (?1497-1525). The last Aztec emperor of Mexico (1520-1525); nephew of Montezuma II. At the fall of the city of Mexico he was taken prisoner by the Spaniards, and tortured and executed by order of Cortez.

GUSTAF V. (1858-). King of Sweden since December 8, 1907; born in the Castle of Drottningholm; first son of King Oscar II. Studied law at the University of Upsala (1877-1878), traveled extensively, and resumed study in the university (1889); entered the army (1875) and gradually rose in rank until he became lieutenant general (1892) and general (1898). From 1884 to 1891 he was vice-king of Norway; married Princess Victoria (1881), daughter of Frederick William Louis, grand duke of Baden. He succeeded Oscar II. as king.

GUSTAVUS I. (VASA) (1496-1560). King of Sweden; ascended the throne (1523); introduced the Reformation into Sweden; freed the country from the monopolies long enjoyed by the Hanseatic League, and established a navy.

GUSTAVUS II. (ADOLPHUS) (1594-1632). King of Sweden (1611-1632); son of Charles IX.; defeated the Polish and Russian invaders; went to the aid of the Protestant league in Germany and defeated Tilly at Breitenfeld, near Leipzig (September 17, 1631). He was killed in the hour of victory at the battle of Lützen (November 16, 1632), in which he was opposed to the famous Wallenstein.

GUSTAVUS III. (1746-1792). King of Sweden (1771-1792). He regenerated his country, though his extravagances alienated many of his subjects. He declared war against Russia without consulting Parliament, and in 1790 almost annihilated the Russian fleet at the battle of Svensksund. He was assassinated in 1792.

GUSTAVUS IV. (1778-1837). King of Sweden; came to the throne in 1792, the duke of Sudermania being regent during the king's minority. He lost Finland to the Russians, and his subjects finally deposed him (May, 1809). He died at St. Gall in Switzerland.

HAAKON VII. (1872-). King of Norway (1905-). The second son of Frederick, king of

Denmark. Elected king by the Storthing of Norway on the separation from Sweden; married Maud, third daughter of King Edward VII. of England.

HADRIAN (PUBLIUS AELIUS HADRIANUS) (76-138). Roman emperor (117-138). Governor of Syria (117); proclaimed emperor (117); made peace and governed justly. Built Hadrian's Wall in Britain; the Temple of Venus in Rome; the Mausoleum (i. e., Castle of St. Angelo); the Aelian Bridge; founded Adrianople.

HAGGART, HON. JOHN GRAHAM (1836-). Born in Perth, Ont.; mayor of Perth (1867-1869-1871); elected for South Lanark to House of Commons since 1872. Postmaster general (1888-1902); department of railways and canals (1892-1896). Leader of Ontario Conservatives in Parliament (1892); completed construction of Sault Ste. Marie Canal, the final link in the mighty chain of Canadian canals connecting the Great Lakes with the St. Lawrence.

HALE, JOHN PARKER (1806-1873). Statesman; born in Rochester, N. H.; admitted to bar (1830); elected to state legislature (1832); United States district attorney for New Hampshire (1834-1841); congressman (1843-1845); United States senator (1847-1865), excepting an interval of two years; minister to Spain (1865-1869).

HAMILTON, ALEXANDER (1757-1804). One of the greatest of American statesmen; born on the island of Nevis, West Indies; entered Columbia University (1773) and early attracted attention by several pamphlets of a political nature. He was a lieutenant colonel under General Washington (1777-1781); was a member of the Continental Congress (1782-1783), of the Annapolis Convention (1786), of the Constitutional Convention in Philadelphia (1787), and of Congress (1787-1788). As United States secretary of the treasury he helped to mold the country's policies. After the definite formation of parties, he became leader of the Federalists. His support of Jefferson in 1800 increased the hatred existing between him and his rival, Aaron Burr. A trivial occasion led to a duel between the two men in which Hamilton was mortally wounded.

HAMLIN, HANNIBAL (1809-1891). An American statesman; born in Paris Hill, Me. Practised law and was a member of the Maine legislature (1836-1840 and 1847), of the lower house of Congress (1843-1847), of the United States Senate (1848-1857); became governor of Maine (1857); was vice-president of the United States (1861-1865); sat in the Senate (1869-1881); and from 1881 to 1883 was minister to Spain.

HANCOCK, JOHN (1737-1793). American statesman; born in Quincy, Mass.; was graduated from Harvard (1754) and inherited a considerable fortune from his uncle (1764); was a member of the Massachusetts general court (1766-1772), of the Continental Congress (1775-1780 and 1785-1786), where he served as president (1775-1777). His name appears in a bold hand on the Declaration of Independence. He was the first governor of Massachusetts under the new constitution (1780-1785 and 1787-1793), and president of the convention (1788) which met to consider the new Federal constitution.

HANNA, MARCUS ALONZO (1837-1904). American politician; born in Lisbon, Ohio. In 1896 he secured the nomination of William McKinley for president and he himself became the chairman of the Republican National Committee. Appointed senator (1897) to succeed the late John Sherman; elected in 1898. One of the most influential advisers of the administration.

HARCOURT, SIR WILLIAM VERNON (1827-1904). English statesman; born at Nuneham Park, Oxford. From 1869 to 1887 he was professor of international law at Cambridge. Was home secretary and cabinet minister (1880-1885), chancellor of the exchequer (1886 and 1892-1895), and leader of the House of Commons (1894) on Gladstone's retirement. His death-duties budget (1894) is his greatest achievement. He was knighted in 1873.

HARDECANUTE, HARDACNUT, or **HARTHACNUT** (about 1019-1042). King of England and Denmark; the son and successor of Canute. At the death of his father (1035) he was under-king of Denmark. The English Witan decided that Harold, half-brother of Hardecanute, should have the south and that Hardecanute should have only Wessex. As Hardecanute was slow in taking his kingdom, it all went to Harold in 1037. On the latter's death, in 1040, it all passed to Hardecanute.

HARDINGE, RT. HON. SIR CHARLES (1858-). Viceroy of India (1910). Entered diplomatic service (1880); served successively as secretary of embassy at Constantinople, Berlin, Washington, Sofia, Bucharest, Paris, Teheran, and St. Petersburg till 1903; assistant under-secretary for foreign affairs (1903-1904); ambassador at St. Petersburg (1904-1906); and permanent under-secretary for foreign affairs (1906-1910).

HAROLD. Name of two kings of England. **HAROLD I.** (? -1040), surnamed **HAREFOOT.** Became joint ruler with Hardecanute (1035); but the prolonged absence of Hardecanute in Denmark led the people to give over his share of the kingdom to Harold, who became sole king (1037). **HAROLD II.** (?1021-1066). Became king in 1066; was the second son of Earl Godwin. In 1066 he defeated the Norsemen at Stamford Bridge, but a few days later was defeated and slain by William, duke of Normandy, at Senlac.

HARUN-AL-RASHID (? -809). Caliph of Arabia and the fifth of the line of the Abbassides. He succeeded his elder brother, Al-Hadi, in 786. Under him the capital, Bagdad, became the most flourishing city of the times. He is best known as the caliph around whom center the tales of the Arabian Nights. His success was due to the ability of the grand vizier, Yahya, of the family of the Barmecides. The caliph grew envious and distrustful of them, and put the vizier and his four sons to death. After this rebellions spread throughout the caliphate, and while on his way to check a formidable one at Khorassan in 809, he was attacked by apoplexy and died.

HASTINGS, WARREN (1732-1818). An English statesman;. governor general of India; born at Churchill, in Oxfordshire. In 1769 he went to India for a second time, and in 1772 became president of the supreme council of Bengal. The administration of Hastings was vigorous and successful, and on his return to England (1785) he was received with acclaim. But the whigs questioned his methods, and his impeachment, which began in 1788, extended over seven years, and finally ended in his acquittal. He devoted the remainder of his life to literature.

HAY, JOHN (1838-1905). American statesman and diplomat; born in Salem, Ind. Law student with and private secretary of President Lincoln; editorial writer on the New York *Tribune* (1870-1875) and later editor-in-chief; first assistant secretary of state under Hayes (1879-1881); ambassador to Great Britain (1897); secretary of state (1898), which office he held until his death. Though a prominent public man he never once held an elective office.

HAYNE, ROBERT YOUNG (1791-1839). American statesman; born in St. Paul's Parish, Colleton District, S. C. He was admitted to the bar (1812); was attorney general of his state (1818-1822); served also in other important positions. He is best remembered for his brilliant debate with Webster on the "States' Rights" question. In 1832 he was elected governor of South Carolina and, though he firmly supported his state, was strongly opposed to the violent methods of the extreme nullificationists.

HEAD, SIR EDMUND WALKER (1805-1868). English governor general of Canada; born near Maidstone, Kent; was educated at Winchester and Oxford, was a fellow of Merton College (1830-1837), and in 1847 was made lieutenant governor of New Brunswick. During his term (1854-1861) as governor general of Canada, the clergy reserves and seigneurial tenures were done away with, the Victoria bridge at Montreal built, and Ottawa made the capital.

HEAD, SIR FRANCIS BOND (1793-1875). An English colonial governor. Lieutenant governor of Upper Canada (now Ontario) (1835-1837). Opposed the union of the Canadas, which he interpreted as a desire for annexation with the United States, and by his lack of tact and ignorance of the conditions was largely responsible for the rebellion of 1837.

HEARST, WILLIAM RANDOLPH (1863-). An American journalist and politician; born in San Francisco, Cal. In 1886 he became editor of the San Francisco *Examiner*; bought the New York *Journal* (1895); and in 1900 began to publish the Chicago *American*. Elected to the United States House of Representatives (1902 and 1904). In 1905 he was nominated for mayor of New York City, but was defeated by George B. McClellan. In 1906 Hearst was nominated for governor of New York, but was defeated by Charles S. Hughes.

HEINSIUS, ANTOON (1641-1720). Dutch statesman; born at Delft; was the actual governor of Holland under William of Orange. He is remembered for his obstinacy in dealing with Louis XIV. of France, of whom he made humiliating demands in behalf of the alliance of Holland on the one hand, and Great Britain, Denmark, Hanover, Austria, Prussia, and Savoy on the other. He was the last to sign the Peace of Utrecht.

HENDRICKS, THOMAS ANDREWS (1819-1885). American statesmen; born near Zanesville, Ohio. Member of Congress from Indiana (1851-1855); United States senator (1863-1869); governor of Indiana (1873-1877); candidate for vice-president with Tilden (1876), and elected vice-president with Grover Cleveland (1884), but died on November 25, 1885.

HENGIST (? -488). Traditional Jutish chief. It is said that, at the invitation of Vortigern, he landed on the Isle of Thanet (449) to aid in the expulsion of the Picts and Scots. He later turned against the Britons, and in 457 became king of Kent.

HENRY I. (1068-1135). King of England (1100-1135). The fourth son of William the Conqueror. In 1091 William Rufus and Robert took his possessions away from him and drove him into exile. When William Rufus was found dead, Henry went at once to England, seized the royal treasure, was crowned king and issued a charter of rights, which was the basis of Magna Charta. He recalled Anselm, archbishop of Canterbury, and married Matilda, daughter of Malcolm Canmore of Scotland, thus greatly pleasing the Saxon people. Robert of Normandy made war upon his brother and Henry was obliged to surrender all of his possessions in Normandy and pay a bounty to Robert in 1101. War broke out between them again in 1104 and they met at Tenchebrai, in France, and Robert was defeated and held as a prisoner in Cardiff Castle until his death. The holding of Robert's possessions in France brought about frequent wars, but these had much to do with the amalgamation of the races in England, and great strides were taken in this reign towards a union of the Saxons and Normans. Henry lost his favorite son, William, in 1120.

HENRY II. (1133-1189). King of England (1154-1189). Son of Matilda and grandson of Henry I. His father was Geoffrey Plantagenet. Henry was the first of the line of Plantagenet kings. He succeeded Stephen by the Treaty of Wallingford. He gained large possessions in France by inheritance and by marriage; in fact, his French territory was greater than that of the French king. Henry sought to repair the damage done by the civil war in Stephen's reign. He soon became involved in quarrels with the clergy. A direct consequence of this was the murder of Thomas à Becket, the archbishop of Canterbury, in 1162. Henry did penance publicly for this crime. Ireland was conquered by him in 1157. The latter part of his life was troubled by the rebellions of his sons. In the course of one of these the king died and was succeeded by his son, Richard Coeur de Lion.

HENRY III. (1207-1272). King of England (1216-1272). The eldest son of John, whom he succeeded when only nine years old. The affairs were administered by the earl of Pembroke until 1219, then by Stephen Langton and Hubert de Burgh. In 1258 the barons, led by Simon de Montfort, rose against him and forced from him concessions known as the Provisions of Oxford. The king got back his power and annulled the provisions in 1264. "The Mise of Lewes" followed the battle of Lewes in 1264, when the king was defeated and captured. By this the king's power was greatly limited and Simon de Montfort tried to secure a new constitution for England. A parliament was summoned, which was attended by knights and representatives of the shires, and is known as the first Parliament of England. Statute laws date from Henry's time, the Provisions of Merton being the first enactment on the English statute book.

HENRY IV. (1367-1413). King of England (1399-1413). The eldest son of John of Gaunt, the fourth son of Edward III. He was banished by Richard II. in consequence of a quarrel with the duke of Norfolk in 1398. In 1399 John of Gaunt died and King Richard II., breaking his promise, confiscated all of his estates. The son landed in England and, as Richard was returning from Ireland, took him prisoner, caused his abdication in 1399, and took the throne in his place. He put down a rebellion of the Welsh under Owen Glendower (1400); defeated the Scotch at Homildon Hill in 1402; overthrew the Percy rebellion at Shrewsbury in 1403, when the famous Percy, Harry Hotspur, was slain.

HENRY V. (1387-1422). King of England (1413-1422). Son and successor of Henry IV. Conducted a war with France in which he took the town of Harfleur and gained the battle of Agincourt against enormous odds in 1415; took Normandy in 1417, and Rouen in 1419. While undertaking a third campaign against France he was taken ill and died at Vincennes in 1422. His son, Henry VI., succeeded him.

HENRY VI. (1421-1471). King of England (1422-1461). Son and successor of Henry V. He was declared king of England when only a few months old, and king of France a few weeks later. The duke of Bedford was regent. In 1421 Joan of Arc caused the defeat of the English in France, and the country gradually passed out of English control. By 1451 Calais was the only English possession in France. The king lost his mind at times and affairs were in a bad way. In 1450 the men of Kent, under the leadership of Jack Cade, rose in rebellion and demanded that the duke of York be placed at the head of the government. In 1455 the first battle of St. Albans was fought between the king's forces and those of the duke of York. This was the first battle of the Wars of the Roses, or the long struggle between the House of Lancaster, to which Henry VI. belonged, and that of York, led by Richard, duke of York. Henry was taken prisoner in this battle. He was again captured at the battle of Northampton (1460). It was then agreed that Henry should keep the crown but that York should be his successor. Margaret, the wife of Henry, was angered that her son should be shut out, so she raised forces and the battle of Wakefield Green was fought in 1460 and the duke of York slain. Edward, earl of March, York's son, raised a force and fought the battle of Towton in 1461 and was crowned king as Edward IV. Other engagements followed, and Margaret caused Edward to be driven out of England and Henry restored. Edward returned the same year (1471) and Henry was recaptured and murdered.

HENRY VII. (1457-1509). King of England (1485-1509). He was the son of Edmund Tudor, earl of Richmond, and Margaret, granddaughter of John of Gaunt, from whom he derived his claim to the throne. He defeated Richard III., of the house of York, at Bosworth Field in 1485 and Richard was slain in battle. Several uprisings by Yorkists in his reign accomplished nothing. The royal power increased rapidly in this reign. The Star Chamber was instituted for the detection and punishment secretly of powerful nobles. Henry kept out of foreign wars and devoted himself largely to increasing his power and in amassing a fortune. North America was discovered by John Cabot in this reign.

HENRY VIII. (1491-1547). King of England (1509-1547); second son of Henry VII.; married Catherine of Aragon; defeated the French at Guinegate, and the Scotch at Flodden (1513). Until 1529 Wolsey was a power almost as supreme as the king himself. In actual warfare Henry sided with Francis I. of France, though in diplomatic transactions he often favored Emperor Charles V.; there were many interviews, one of the most noted of which was the "Field of the Cloth of Gold." Failing to receive the pope's consent to a divorce from Catherine, Henry deposed Wolsey, made himself head of the Church of England, and in 1533 married Anne Boleyn. Cranmer was made archbishop of Canterbury, monasteries were abolished, and all subjects made to take oath of allegiance to the king. Henry, actuated only by personal motives, did not realize that he had forever broken papal power in England. Anne Boleyn was executed (1536) and Henry married Jane Seymour, who died (1537); married Anne of Cleves (1540); divorced shortly after, and married Catherine Howard, who was executed (1542); married Catherine Parr (1543), his sixth wife. During his last years Henry endeavored to establish his authority in Ireland, and was at war with Scotland and France (1542-1546). The succession was granted by Parliament to his children, Edward, Mary, and Elizabeth.

HENRY I. (about 1008-1060). King of France (1031-1060). Son of Robert II. and grandson of Hugh Capet. Henry assisted William of Normandy (William the Conqueror) in bringing the Norman nobles to terms, though he afterwards became jealous of him. His great work was in holding the kingly authority against that of the powerful nobles.

HENRY II. (about 973-1024). Holy Roman emperor (1002-1024). Grandson of Henry I. and successor of Otho III. During his absence in Italy, Boleslav Chrobry (the Brave) of Poland invaded his kingdom and annexed some territory. Though defeated, he continued war on Henry until terms of peace were made. He and his wife, Kunigunde, were canonized in 1146.

HENRY III. (1017-1056). Holy Roman emperor (1039-1056). Son of Conrad II.; was crowned, 1039. He was obliged to face rebellions and to settle disputes in many parts of his empire. Under him there was great progress and he did much to strengthen and to improve affairs in the church.

HENRY IV. (1050-1106). Holy Roman emperor (1056-1106). The son and successor of Henry III. He became king when only six years old and the nobles and clergy who had been held in check by Henry III. sought to gain privileges by force. Revolts took place and Germany was in a state of anarchy. In 1073 Hildebrand was elected pope under the title of Gregory VII. A decree was passed by the church claiming sole right of investiture or appointment of bishops and other church dignitaries. Henry contested this right, and after a struggle he went to Canossa and waited as a penitent for three days barefooted in the courtyard for absolution from the pope. This action, while humiliating to Henry, really averted a union of the church and the nobles, and was diplomatic. Henry was afterward taken prisoner in a rebellion and forced to abdicate. He died shortly after.

HENRY V. (1081-1125). Holy Roman emperor (1106-1125). Son and successor of Henry IV. Appointed after Conrad had forfeited his right to the throne by rebellion. Pope Paschal II. demanded that he give up the right of investiture, which Henry refused to do. In 1110 he invaded Italy with 300,000 men. The pope agreed that the church should give up its lands and property in Germany if the emperor would give up the right of investiture. This was agreed to. The Romans opposed the crowning of Henry as emperor and the pope and the cardinals were taken prisoners. Then the pope recognized the right of investiture and Henry was crowned. As soon as he had crossed the Alps on his way home, the pope renounced the treaty and Henry was excommunicated. Germany was then plunged in civil war. In 1116 Henry went back to Italy, drove Paschal from Rome, and after his death had Gregory VIII. elected pope. The papal party then set up Gelasius as pope and Henry allayed the opposition to him in Germany. Pope Calixtus II., who succeeded Gelasius in 1119, compromised the situation and the struggle was closed for a time by the Treaty of Worms (1122). Henry was succeeded by Conrad III.

HENRY, PATRICK (1736-1799). American patriot and orator; member of the Continental Congress; twice governor of Virginia. From very humble beginnings, and after failure in business he became a lawyer; won fame for his speech in the "Parsons' Cause"; opposed the Stamp Act, and by his eloquence stirred up Virginia to action in the War of Independence. He was the first speaker of the General Congress at Philadelphia.

HENRY OF FLANDERS. Second Latin emperor of Constantinople, brother of Baldwin I. He reigned (1205-1216), and was succeeded by Pierre de Courtenay.

HENRY THE FOWLER (876-936). King of the Germans (919-936). The son of Otho, duke of Saxony. He succeeded his father in 912, and on the death of Conrad I., the German king in 919, he was chosen king by the Franconian and Saxon nobles. In 925 Lotharingia, or Lorraine, came over to Henry's side. The Hungarians had long made inroads upon Germany, and in 924 Henry was obliged to buy a truce with them for nine years of peace. He took part of this time to prepare and train his army. When he thought it was ready he tried it against some Danes and Slavs. He then refused payment of the annual tribute to the Hungarians. They made war upon him and he defeated them in Thuringia so badly that they did not venture into Germany for several years thereafter. Henry gathered around him the powerful nobles and made himself secure through their influence.

HEPTARCHY, THE SAXON. Name given to the kingdoms in England established by the Angles and Saxons. The union, which began in the sixth century and continued till Egbert ruled alone (829), is said to have consisted of Kent, Sussex, Wessex, Essex, Northumbria, East Anglia, and Mercia. The tribe which was strongest put forward a leader, who was recognized as king until his supporters were overthrown by a more powerful tribe. Thus the person who was most powerful became monarch.

HILL, AMBROSE POWELL (1825-1865). A Confederate soldier; born in Culpeper County, Va. Served through the Mexican and Florida Seminole wars; saved the day for the South at Antietam (1862). His troops at Chancellorsville mistook Jackson's brigade for Federals and fired the fatal volley that killed Jackson. He led a corps at Gettysburg and was killed at Petersburg.

HILL, DAVID BENNETT (1843-). A Democratic politician, prominent in New York state; born at Havana, N. Y. Lieutenant governor of New York with Cleveland, whom he succeeded (1885) until 1891; United States senator to succeed Evarts (1891); defeated for governor by Levi P. Morton (1894).

HITCHCOCK, ETHAN ALLEN (1835-1909). A United States Cabinet officer; born in Mobile, Ala.; completed his education at a military academy in New Haven, Conn. (1855); settled in St. Louis and engaged in mercantile business until 1860, when he went to China to enter the commission house of Olyphant & Co.; retired from business (1872), having been a partner in the above company since 1866; returned to the United States (1874); held many positions of importance; was United States minister (1897-1898), and first ambassador (1898-1899) to Russia; was appointed secretary of the interior by President McKinley, holding the position until 1907.

HOAR, GEORGE FRISBIE (1826-1904). American legislator; born in Concord, Mass. Member of the Free-Soil party and of the Republican party. Congressman (1869-1877); United States senator (1877 till his death); member of the Electoral Commission (1877); presided over the Republican National Convention which nominated Garfield (1880); always opposed "imperialism."

HONORIUS, FLAVIUS (384-423). Emperor of the West (395-423). Second son of Theodosius. On the death of Theodosius the empire was divided between Honorius, who took the West with Rome as his capital, and Arcadius, who took the East with Constantinople as his seat. Honorius, being only 11 years old, was put under the guardianship of Stilicho, who was all his life the real ruler of the West. In 401 Alaric, king of the Visigoths, invaded Italy, and after two battles with Stilicho was obliged to withdraw; attacked (405) with like result. Stilicho, losing favor, was murdered at Ravenna (408), and Alaric again invaded Italy, Rome escaping by ransom, to be taken next year, Attilus being made emperor for a brief period. Rome was ravaged by Alaric's army (410) but freed by his death (410). Honorius now associated with Constantius. Spain, Gaul, and other fine provinces were lost to Rome during this reign.

HOUSTON, SAM (1793-1863). American soldier and statesman; born near Lexington, Virginia. In 1813-1814 he served under General Jackson against the Creek Indians; later studied and practised law in Tennessee, and was a representative in Congress (1823-1827); was governor of Tennessee (1827-1829); removed to Texas and became commander-in-chief of the revolutionary forces there (1835); was president of Texas (1836-1838, 1841-1844). After the annexation of Texas he was United States senator (1846-1859), and governor of Texas (1859-1861), of which position he was deprived because he would not support the Confederacy.

HOWE, JOSEPH (1804-1873). Canadian statesman; born at Halifax, N. S. From his election to the Provincial Legislature in 1836 he became the most conspicuous figure in Nova Scotia. He was the successful champion of responsible government. He was a member of the Executive Council; speaker of the Assembly (1840); secretary of state for the Dominion (1870); and governor of Nova Scotia (1873).

HUGHES, CHARLES EVANS (1862-). Governor of New York (1907-1910). Practising lawyer (1884-1891 and 1893-1906); lecturer of law (1891-1893) at Columbia, Cornell, and New York law schools; appointed associate justice in United States Supreme Court (1910).

HUTCHINSON, THOMAS (1711-1780). The last royal governor of the Province of Massachusetts Bay (1771-1774). He was acting governor during the "Boston Massacre" (March 5, 1770). He was succeeded by General Gage, who was military governor.

IBRAHIM (*ib-rah-heem'*) **PASHA** (1789-1848). Viceroy and general of Egypt; born at Cavalla, Roumelia. In 1810 he crushed a rebellion of the Arabs in upper Egypt, and in Arabia suppressed the Wahabis.

In the Greek war of independence he supported the Turks; took Navarino, Tripolitza, and, after a memorable defense, Missolonghi (1326). In 1831 he invaded Syria, soon making himself master of the whole of that country; but he was eventually compelled by the powers to relinquish his claim on the conquered territory. In 1848 he was made viceroy of Egypt.

II KAMON NO KAMI (1815-1861). A Japanese statesman who was largely instrumental in throwing Japan open to foreign trade and intercourse. He assisted Commodore Perry in 1853 in his diplomatic errand and forced the signing of the treaty with the United States. He was assassinated and his memory was execrated for some years among his own people.

INGALLS, JOHN JAMES (1833-1900). An American statesman; born in Middleton, Mass. Removed to Kansas (1858); member of the state senate (1862); United States senator (1873-1891); president pro tempore of the Senate (1887-1891); defeated by the Democratic-Populist forces. A fluent speaker, brilliant at repartee, and an excellent parliamentarian.

IRON CROWN OF LOMBARDY. The golden (not iron) crown of the Lombards still kept in the Church of St. John the Baptist at Monza. It is composed of six pieces, and ornamented with 22 jewels, 26 golden roses, and 24 enamels. The small circle inside is of iron, said to be made from a nail used at the Crucifixion, and given to the Lombard Princess Theodelinda by Pope Gregory I. The motto on the crown is "God has given it to me; beware who touches it." It has been used in crowning all Lombard kings, also German emperors as kings of Italy. Napoleon crowned himself with it at Milan, in 1805. Later it was carried to Venice, but in 1886 was restored to Monza.

ISAAC I., COMNENUS (? -1061). Byzantine emperor (1057-1059). First of the Comneni emperors.

ISABELLA I., THE CATHOLIC (1451-1504). Queen of Castile and León; born at Madrigal; succeeded to the throne on the death of Henry IV., in 1474. The war with Portugal ended in her favor (1479); the conquest of Granada was successfully completed; and the Inquisition carried on with fanatical earnestness. The queen is best remembered for her acquiescence in the plans of Columbus.

ISABELLA II. (1830-1904). Queen of Spain (1833-1868). Daughter of Ferdinand VII. The Salic Law was set aside to permit her to succeed her father. Her mother, Maria Christina, was regent. Don Carlos, her uncle, should have succeeded Ferdinand, and a rebellion in his favor raged with violence in 1840. In consequence of a rebellion in 1868, Isabella fled to France and, in 1870, she abdicated in favor of her son, Alfonso XII. He came to the throne in 1875, after the brief reign of Amadeus of Savoy and the failure of the republic under Castelar.

ISABELLE OF FRANCE (1292-1358). Queen of England, wife of Edward II., whom her adherents deposed, and with whose assassination she is charged. Her son, Edward III., ordered her arrest, and she died after 20 years' incarceration.

ISMAIL PASHA (1830-1895). Viceroy (1863) and khedive (1867) of Egypt. During the American Civil War he amassed great wealth in cotton. He encouraged the building of the Suez Canal. While his schemes for the aggrandizement of Egypt were ambitious, his extravagance plunged the country into such financial distress that France and England interfered (1879) and the sultan deposed Ismail Pasha and Prince Mohammed Tewfik was proclaimed khedive. Ismail received an annual pension of £50,000 and left the country.

ISRAEL. The first king of the Hebrews was Saul. He ruled successfully, but soon became jealous of David, who, introduced into the king's court as a minstrel, fascinated every one. When Saul died by his own hand, David defeated the king's son, Ishbosheth, and was anointed king of Israel (about 1030 B. C.). He captured Jerusalem, conquered the neighboring peoples, and when he died (993 B. C.) was succeeded by his son, Solomon. The new king's rule was so lax and his expenditures so extravagant that, on his death (about 953 B. C.), rebellion broke out which resulted in the formation of two Hebrew kingdoms, Israel and Judah, Jeroboam becoming king of the former. Israel later fell under the hand of Tiglath-pileser II., often termed the founder of the Second Assyrian Empire; but on the death of this powerful monarch, Israel revolted against Assyrian rule. Sargon the Later proceeded against Jerusalem, completely destroying the city (722 B. C.), and exiled the people, thus forever scattering the tribes of Israel.

ITAGAKI (1838-). Japanese statesman known as the "Rousseau of Japan." An ardent advocate of government for his country based upon those of the United States and England; held many Cabinet offices. He opposed the government of Ito based upon that of Germany. A Christian and a church officer.

ITO, HIROBUMI (1840-1909). A Japanese statesman. Studied the coinage of the United States and obtained the adoption of the decimal system in Japan and the establishment of a mint at Osaka (1871). As minister of public works, he had the first railroad of Japan built from Yokohama to Tokyo (1872). He secured the adoption of foreign dress. In 1889 the constitution prepared by him was adopted. As premier (1892-1895) he carried the nation through the Chino-Japanese War; recalled to the premiership in 1898 he directed the Japanese against the Boxer uprising in China. He was active during the Russo-Japanese War. Called the "Bismarck of Japan" and the "Father of the Constitution." Assassinated.

ITURBIDE (*e-toor-be'day*), **AUGUSTIN DE** (1783-1824). A revolutionary leader and emperor of Mexico. Unsuccessful in his efforts for an independent monarchy under the rule of a Spanish Bourbon, he was himself emperor from 1822-1823, and crowned with the title of Augustin I. (July 21, 1822). Exiled, he went to Europe. Returning to Mexico (1824), in the false belief that a hearty welcome awaited him, Iturbide was arrested, condemned as a traitor, and shot at Padilla.

IVAN III., THE GREAT (1440-1505). King of Russia and the founder of the present monarchy. He was the son and successor of Vasili the Blind, and came to the throne in 1462. His achievements were: the consolidation of the Russian Empire; the expulsion of the Tatars; the union with the Byzantine Empire by his marriage with Sophia Palaeologus, niece of the last emperor. In 1481 he defeated the Tatars and began the release from the chain which had bound Russia for two centuries and a half. He opened diplomatic relations with other European countries by the exchange of envoys. He was succeeded by his son, Vasili or Basil.

IVAN IV., THE TERRIBLE (1531-1584). Czar of Russia; was king after 1533, but did not really begin to rule until 1543. He began his reign with many notable improvements, and in the course of about 10 years completely destroyed the Tatar power. The imprisonment of the councilors, Silvester and Adatcheff, led to an uprising in favor of these men. It was 1572 before the country was restored to order, and during this time the punishments inflicted by Ivan justly won him the sobriquet, "The Terrible." In 1582 Ivan was defeated by the Poles, lost Polotsk and his conquests on the Baltic, and completed the conquest of Siberia. His acts of cruelty are unsurpassed in history, though they were often committed during fits of passion, which he afterwards regretted.

JACOBINS. Name given to the members of a political party which appeared in France during the Revolution. The policy of the Jacobins was at first moderate, but during the Revolution it became decidedly extreme, and the party became one of the most important influences in the country. Among its members were Marat, Danton, and Pétion. The club ended (1794) with the fall of Robespierre, its most influential supporter.

JACOBITES (from the Latin *Jacobus*, "James"). The name given after 1688 to the supporters of the exiled Stuarts. James II. was forced from the English throne in 1688, and his death occurred (1701), before any serious steps were taken to restore him. His son, James III., the "Old Pretender," then assumed his father's claims and, after the rebellion in Scotland and in the north of England (1715), went to England, but was sent back to France. In the rebellion of 1745, Charles, the "Young Pretender," son of James III., was at first successful. But with his overthrow at Culloden (1746), the cause of the Stuarts was gradually given up.

JAMES I. OF ENGLAND AND VI. OF SCOTLAND (1566-1625). Son of Mary, Queen of Scots, and Darnley; born in Edinburgh Castle. During his minority Moray and Morton were the chief regents. He ruled alone after 1581. In 1603 James succeeded to the crown of England and Ireland. His wish to rule absolutely, and to tolerate the Roman Catholics, soon brought him in opposition to the House of Commons. In 1619 James's son-in-law was made king of Bohemia as Frederick V. In the Thirty Years' War which followed, James refused to aid Frederick and the Protestants on the continent. Hoping now to restore

Frederick to the palatinate by diplomatic means, he made every effort to bring about a marriage between the Infanta of Spain and Prince Charles. In this he failed, the outcome of his efforts being war with Spain. James was one of the most learned men of his time.

JAMES II. (1633-1701). King of England (1685-1688). Son of Charles I. He was duke of York and Albany, and succeeded his brother, Charles II. Suppressed the rebellion raised by the duke of Monmouth, James's son, and caused his execution. The Bloody Assizes, presided over by the infamous judge, Jeffreys, followed, in which 320 persons were hanged. The Declaration of Indulgence, allowing freedom of worship, was issued in 1687, and was followed by a second in 1688. The clergy disobeyed the command to read the second in churches, and seven bishops entered a protest. James committed them to the Tower, but the court acquitted them. William, prince of Orange, was sent for by leading men to come and take the throne, which he did. James fled after the Battle of the Boyne (1690) and lived in France.

JIMMU TENNO. The first ruler of Japan; said to have held the throne from 660 to 581 B. C. He is the reputed founder of the present line of rulers. The Japanese reckon from the era of Jimmu, who is said to have lived 137 years.

JOHN, surnamed **LACKLAND** (1167-1216). English king (1199-1216). Hated by the nobles, they and France supported Arthur, his nephew, as rightful heir to the throne. War ensued, England losing Normandy, Touraine, Maine, Anjou, and Poitou. Deposed by the pope (1212); submitted to the pope (1213); defeated at Bouvines (1214); forced by barons to sign the Magna Charta (1215).

JOHN I., ZIMISCES (925-976). Byzantine emperor (969-976); appointed by his uncle, Nicephorus Phocas, as military governor; waged successful war against Saracens; murdered his uncle and mounted the throne. Defeated the Russians, Saracens, and Bulgarians. Supposed to have been poisoned.

JOHN II., THE GOOD (1319-1364). King of France (1350-1364); defeated at Poitiers, captured and taken to London; released under Treaty of Bretigny (1360). When his son, the duke of Anjou, broke his parole, and left England, John voluntarily surrendered; died in London (1364).

JOHN III. or **JOHN SOBIESKI** (1624?-1696). King of Poland; was youngest son of James Sobieski, governor of Cracow. In 1665 he was made grand marshal and general of the Polish armies. He retook several cities from the rebellious Cossacks. In 1673 he gained the memorable battle of Khotin, near the Dniester, in which the Turks lost 28,000 men. On the death of Michael in the same year he was elected king of Poland, and shortly afterward compelled the Turks to sue for peace. He died in Warsaw.

JOHN VI., PALAEOLOGUS (1332-1391). Emperor of Constantinople (1341-1391). Son and successor of Andronicus III. During his reign the Turks made great advances, took Adrianople, and tribute was paid to them in 1370.

JOHN VII., PALAEOLOGUS (1390-1448). Son and successor of Manuel II. Byzantine emperor (1425-1448). Being hard pressed by the Turks, he induced the popes to assist him against them on promise of a union of the Greek and Western churches. He attended the Council of Florence in 1439, where the union was brought about. The Greeks refused to sanction the union, yet the West sent assistance against the Turks, which was not effective. John was succeeded by his brother, Constantine XI.

JOLY DE LOTBINIERE, HON. SIR HENRI GUSTAVE (1829-1908). Born in France; studied law in Canada; called to Quebec bar (1855); queen's counsel (1878); returned to House of Commons and Provincial Assembly (1867-1874); remained in the local assembly leading the opposition; premier (1878); resigned (1879), and until 1883 again led opposition. Retired on disapproval of Liberal course on Riel question; returned to Parliament (1896). Controller of inland revenue (1896); lieutenant governor of British Columbia (1900-1906). Is Honorary D.C.L., LL.D., and Knight of St. Michael and St. George. Twice declined seat in Senate. Much interested in agriculture, horticulture, and forestry. In 1888 was authorized to add De Lotbinière (his mother's name) to that of Joly.

JONES, ANSON (1798-1858). A president of the republic of Texas; born at Great Barrington, Mass. He settled as a physician in Texas in 1833; member of the second Texan Congress (1834); minister to the United States (1835); secretary of state by Houston (1841); elected president (1844); turned over the government to J. Pinckney Henderson, the first governor under the Constitution of the United States (1846).

JOSEPH I. (1678-1711). Holy Roman emperor (1705-1711); born at Vienna; became king of Hungary (1687) and king of the Romans (1690). With the aid of Holland, Savoy, and England, a successful war was carried on against Louis XIV. The duke of Marlborough and Prince Eugène led the allied forces.

JOSEPH II. (1741-1790). Holy Roman emperor (1765-1790). In 1772 he signed, together with the sovereigns of Prussia and Russia, a treaty by which Poland was divided among them, and in 1780, at his mother's death, inherited the Austrian throne. Established religious toleration; abolished feudal serfdom.

JOSEPHINE (1763-1814). French empress; married the Vicomte de Beauharnais, who was executed during the Reign of Terror (1794). Two years later she married Napoleon I., but the union was dissolved (1809) that Napoleon might marry Maria Louisa of Austria, a step taken to further the emperor's political ambitions.

JUAREZ (*hoo-ah'reth*), **BENITO PABLO** (1806-1872). President of Mexico; born in Oajaca; was governor of the state of Oajaca (1847-1852); secretary of the interior and chief justice (1857); president (1858). A civil war, which completely exhausted the treasury, at once broke out. In 1861 the president's suspension of payment of public debts led to an expedition against Mexico in which England, France, and Spain took part. The result was that Maximilian, of Austria, became emperor of Mexico. Maximilian was shot (1867); Juarez then regained and held the presidency until his death.

JUGURTHA (? -104 B. C.). King of Numidia in Africa. He tried to enlarge his kingdom by attacking his cousin, Adherbal, against the advice of Rome, which was then friendly to him. He attacked Adherbal in Cirta (112 B. C.) and put to death a number of his Roman followers. Rome declared war, but by bribery he baffled the Romans for some years. The consul, Caecilius Aemilius, whom he could not bribe, defeated him in 109 and 108 B. C. Marius followed up the wars and Jugurtha was given up to the Romans (106 B. C.). He was imprisoned for two years in Africa; exhibited a captive in Rome at the triumph of Marius (104 B. C.); thrown into a dungeon and starved to death.

JULIAN THE APOSTATE or **CLAUDIUS JULIANUS** (331-363). Roman emperor (361-363). Renounced Christianity.

JUSTINIAN I. (FLAVIUS ANICIUS JUSTINIANUS (483-565). Emperor of the Byzantine or Eastern Roman empire (527-565). Justin I., his uncle, took him to Constantinople and educated him and rapidly advanced him until in 527 he made him colleague as emperor. A few months after, Justin I. died and Justinian occupied the throne alone. His reign was the most brilliant in the history of the Byzantine Empire. Belisarius and Narses, as the generals, did much to make it so. He conquered the Vandals in Africa; drove the Goths out of Italy; withstood the Persians; and survived the attacks of the Huns on the north. He built extensively, especially the church of St. Sophia, and made a great name through the compilation of laws known as the Code of Justinian and which were published under the name of the Pandects in 534. These were followed by the Institutes of Justinian.

KENDALL, AMOS (1789-1869). American politician; born at Dunstable, Mass. One of Jackson's chief advisers and the leading spirit in the "Kitchen Cabinet"; postmaster general (1835). He introduced many reforms, including the post office money-order system.

KING, RUFUS (1755-1827). American politician; born at Scarborough, Me.; was graduated at Harvard (1777); was member of the Confederation Congress (1784-1787), of the Constitutional Convention (1787), and of the United States Senate from New York (1789-1796, 1813-1825) as a Federalist; served as minister to Great Britain (1796-1803, 1825-1826); was a candidate for the vice-presidency (1804 and 1808), and for the presidency (1816).

KING, WILLIAM RUFUS (1786-1853). American statesman; born in Sampson County, N. C.; was a member of the North Carolina House of Commons (1808-1809) and Democratic representative in Congress (1811-1816); removed to Alabama (1818); was United

States senator from that state (1819-1844); minister to France (1844-1846); again senator (1846-1853); elected vice-president on the ticket with Pierce (1852).

KIRKWOOD, SAMUEL JORDAN (1813-1894). An American political leader and Cabinet officer; born in Harford County, Md., and settled in Iowa in 1855. State senator (1856); governor of Iowa (1859 and 1861); an efficient "war governor"; United States senator to succeed James Harlan (1866); third time governor of Iowa (1875); United States senator (1877-1881); secretary of the interior under Garfield (1881-1882).

KITCHEN CABINET. A name given to a small group of men who, without offices, were thought to have undue influence over President Jackson in affairs of administration. The most prominent were: Major William B. Lewis, Isaac Hill, Amos Kendall, Duff Green, and Francis P. Blair, Sr.

KOSSUTH (*kosh'oot*), **LOUIS** (1802-1894). Hungarian patriot and statesman; born in Monok, County Zemplin; entered the Diet (1874); became minister of finance (1848) and virtual dictator during the insurrection of 1848-1849; took refuge in Turkey, but visited the United States (1851-1852), where, although enthusiastically received, he failed to accomplish his purpose—to induce the American republic to aid his countrymen.

KRUGER (*kroo'ger*), **STEPHANUS JOHANNES PAULUS** (1825-1904). A Boer statesman familiarly known as "Oom Paul"; born near Colesberg, Cape Colony. Took part in several military excursions, and in 1883 was made president of the Transvaal. He was re-elected in 1888, 1893, and 1898. In the Jameson raid (1895), the leader and his associates were captured and eventually given over to Great Britain for trial. This angered the radical Boer element, and the embittered relationship between the Boers and the British soon afterward led to the Boer War (1899). The Transvaal, which had been put into splendid defensive shape in anticipation of such a struggle, stood out longer than it otherwise could have done. With the fall of Pretoria, Kruger left for Europe, finally taking up his residence in Holland.

KUBLAI KHAN (*koo-bli kahn*) (1216-1294). Emperor of China; founder of the twenty-third Chinese dynasty; became grand khan of the Mongols (1259) and in 1260 he was invited by Si Tsong to aid in the expulsion of the Kin Tatar dynasty. In response Kublai invaded China, subdued the northern portion of the country, and established his capital at Kambalu. Completed the conquest of southern China (1279), thus becoming master of the whole kingdom. He was a patron of literature and encouraged industry, agriculture, and commerce. He invited the pope to send Christian missionaries to China, but this was not done. Marco Polo spent 17 years at Kublai's court.

KU-KLUX KLAN. A secret political organization in the southern United States from 1866 to 1872. It became a band for whipping, banishing, and murdering negroes and "Northern men." In President Grant's message of March 23, 1871, he called attention to the lawlessness, and Congress passed the Enforcement Act or Ku-Klux Act or Force Bill, April 20, 1871. This gave great power to the authorities to prosecute such cases and the organization died out.

KWANGSU (1872-1908). Emperor of China (1875-1908). Son of Prince Chun. Kwangsu was placed upon the throne by his aunt (1875), who forced his marriage with her niece to strengthen her power; he had little active part in actual government, virtually made prisoner in his palace (1898).

LA BARRE, ANTOINE JOSEPH LEFEVRE DE (about 1625-1688). French colonial governor of Canada (1682-1685), successor of Frontenac. Failed in an attack on the Senecas and through incompetency concluded an unsatisfactory treaty with the Iroquois. Louis XIV. recalled him.

LABOUCHERE (*lah-boo-share'*), **HENRY DUPRE** (1831-). English politician and journalist; born in London. Was in diplomatic service (1854-1864), part of which time he served in the United States at Washington. In Parliament for Windsor (1865-1866), and for Middlesex (1867-1868). Labouchere was an advocate of the Irish Home Rule policy, and sympathized with the Boers during the war in the Transvaal. He established the London *Truth* (1876).

LA FOLLETTE, ROBERT MARION (1855-). American politician; born in Primrose, Wis. Member of Congress (1887-1891); took a prominent part in framing the McKinley Tariff Bill; leader of the young Republican element known as "Half-Breeds"; defeated the "Stalwarts" or machine politicians, being elected governor of Wisconsin (1900); re-elected in 1902; United States senator (1905).

LAIRD, DAVID (1833-). Canadian statesman; born in New Glasgow, P. E. I. Delegate to Ottawa to negotiate the admission of Prince Edward Island into the Dominion of Canada (1872); member of Dominion Parliament (1872-1876); minister of the interior (1873-1876); lieutenant governor of the Northwest Territories (1876).

LAMONT, DANIEL SCOTT (1851-1905). American politician; born in Cortlandville, N. Y. Private secretary to Grover Cleveland when governor of New York and when president; secretary of war in Cleveland's second Cabinet (1893-1897); vice-president of the Northern Pacific railway (1897).

LANGEVIN, SIR HECTOR LOUIS (1826-1906). French-Canadian politician; born in Quebec. Solicitor general in the Taché-Macdonald administration (1864); postmaster general (1866); prominent in bringing about confederation; first secretary of state for the Dominion (1867); postmaster general and, later, minister of public works.

LANSDOWNE, HENRY CHARLES KEITH PETTY-FITZMAURICE, MARQUIS OF (1845-). An English statesman and governor general of Canada (1883-1888). During his rule the Canadian Pacific railway was completed, fisheries dispute settled, and Riel's rebellion suppressed. From Canada he went to India as viceroy and governor general (1888-1893); secretary of war in Salisbury's Cabinet (1895); secretary of state for foreign affairs (1900).

LAURENS, HENRY (1724-1792). American statesman; born in South Carolina. Was sent on a mission to The Hague (1779), and while en route was captured by the English and kept a prisoner in the Tower of London for 15 months. Concluded with Adams, Jay, and Franklin the preliminary treaty at Paris (1782).

LAURIER, THE RIGHT HON. SIR WILFRID (1841-). Canadian statesman; born at St. Lin, Quebec. He studied law at McGill University, taking B.C.L. in 1864, and was that year called to the bar; made queen's counsel (1880); member of Royal Commission revising code of civil procedure of province of Quebec; entered the Quebec Legislature (1871), and the Dominion House of Commons (1874); was a member of the Mackenzie ministry in 1877, and in 1891, on the retirement of Blake, he became leader of the Liberal party. Laurier became prime minister (1896), and his government was sustained in 1900, in 1904, and again in 1908. His qualities as a statesman and as an orator rate very high. He surmounted great difficulties, reconciled acute differences, and overcame the obstacle of French being his native tongue while aspiring to rule in a community predominantly English in blood and speech. As a party leader and tactician he has yet to make his first mistake. He has been decorated with many English and French orders, and was received at the Vatican by His Holiness the Pope. He is the first man of French blood to be prime minister.

LAWRENCE, ABBOTT (1792-1855). American diplomat; born at Groton, Mass.; member of Congress (1839-1840, 1843-1847); commissioner in Webster-Ashburton treaty; minister to England (1849-1852); endowed the Lawrence Scientific School at Harvard (1847), giving in all $100,000.

LEDRU-ROLLIN, ALEXANDRE AUGUSTE (1807-1874). French statesman; born at Fontenay. Deputy (1841); revolutionary leader (1848); minister of interior (1848); fled to England, protesting against Louis Napoleon (1849); returned (1870); member of Versailles Assembly (1874).

LEONIDAS. A king of Sparta. Son of Anaxandrides. He came to the throne in 491 B. C. When, in 480 B. C., the Persians under Xerxes marched towards Athens with an enormous force, Leonidas was sent with a small force of 300 Spartans and a small auxiliary force to hold the Persians in check until the national games then in progress were completed. The Spartans were successful until a Malian, named Ephialtes, showed the Persians a secret path that the Spartans had neglected to fortify. The Persians marched around and in the battle that ensued the Spartans died to a man.

LEOPOLD II. (1835-1909). King of the Belgians (1865-1909). He brought about the organization of the African International Association (1876), and paid out of his own resources a large portion of the expenses for Stanley's exploration of the Congo. In 1885 the Berlin Conference gave him the sovereignty of the Congo

Free State. Leopold was very wealthy, and one of Europe's most energetic business men.

LERDO DE TEJADA, SEBASTIAN (1825-1889). President of Mexico (1872-1876). Succeeded Juarez and ruled well. His re-election in 1876 was disputed by Porfirio Diaz, who headed a revolution and Lerdo escaped to New York, where he died.

LI HUNG CHANG (1823-1901). Chinese statesman; born in Lu-chow, Ngan-hwei. He was a friend to Western civilization and culture. With the help of Gordon he put down the Taiping rebellion (1864). He became governor of the Kiang provinces (1864), and from 1870 to 1895 was viceroy of the province of Chi-li. The foreign policy of China during this period was under Li's control. He reorganized the army, was obliged to bear the burden of defeat in the war with Japan, and afterward negotiated the treaty of peace. In 1896 he began a tour of the world, was everywhere enthusiastically received, and on his return was soon reinstated in his former government position.

LILIUOKALANI (1838-). Queen of the Hawaiian Islands. She succeeded to the throne in 1891. Her husband, John O. Dominis, who was an American, influenced her in favor of American interests. But he died soon after she became queen, and Liliuokalani attempted to substitute a reactionary constitution for the liberal one of 1887. At this the white population revolted under Sanford B. Dole, established a provisional government, and applied for annexation to the United States. This was not brought about until 1898, and in the meantime Liliuokalani, who had been unsuccessful in pleading her cause in the United States, retired to Honolulu.

LIVINGSTON, EDWARD (1764-1836). An eminent American statesman and jurist; born at Clermont, N. Y. Member of Congress (1795-1801); mayor of New York (1801-1803); member of Congress for Louisiana (1823-1829); secretary of state under Jackson (1831); minister to France (1833).

LIVINGSTON, ROBERT R. (1746-1813). American statesman; born in New York; was graduated at Columbia College (1765); became a member of the Continental Congress, and was member of the committee appointed to draw up the Declaration of Independence; was chancellor of New York from the time of the adoption of the Constitution until 1801, and was made secretary of foreign affairs in 1781. He used his influence to secure the ratification of the Federal Constitution in New York, and in 1801 was appointed minister to France.

LODGE, HENRY CABOT (1850-). American statesman, orator, and writer; born in Boston, Mass. Member of Massachusetts Legislature (1880-1881); delegate to Republican National Conventions (1884, 1888, 1892, 1896, 1900); placed Thomas B. Reed in nomination for the presidency (1896); permanent chairman (1900); chairman of committee on resolutions (1904); member of Alaskan Boundary Commission; member of Congress for Sixth Massachusetts district (1887-1893); United States senator since 1893, his present term expiring 1911; U. S. Immigration commissioner (1907); at one time editor of *North American Review*, and of *International Review;* lecturer on American History at Harvard and at Lowell Institute; author of many historical works. Noted for his insistence upon laws to safeguard the franchise, and upon the necessity for the restriction of immigration.

LONG, JOHN DAVIS (1838-). American politician; born in Buckfield, Maine. Governor of Massachusetts (1880-1882); member of Congress (1883-1889); secretary of the navy under McKinley in 1897 and during the Spanish-American War. His administration was exceedingly able during this difficult period.

LOUBET (*loo-bay'*), **EMILE** (1838-). French statesman; seventh president of the French Republic; born at Marsanne. In 1876 he was elected to the Chamber of Deputies; re-elected to the Lower House (1877 and 1881), and was chosen senator (1885). In 1887 he became minister of public works in the Cabinet of M. Tirard, and in 1892 President Carnot appointed him premier to succeed M. de Freycinet. Though short, his administration was marked by the successful solution of several important problems. He resigned in the latter part of the same year; was elected president of the Senate (1896 and again in 1898), and on the death of President Felix Faure (1899) was chosen president.

LOUIS I., LE DEBONNAIRE (778-840). Roman emperor and king of the Franks (814-840); youngest son of Charlemagne. In 817 he divided his empire among his three sons, but, when in 829 he proposed a redivision in favor of his fourth son born in 823, the elder sons revolted and deposed him. On the death of Pipin (838), Louis redivided the empire between Lothair and Charles.

LOUIS VI., LE GROS (THE FAT) (about 1080-1137). King of France (1108-1137). The son and successor of Philip I. He did much in defense of the church; enriched and enlarged his empire by the acquisition of all possible territory. He was engaged in war with Henry I. of England.

LOUIS VII., LE JEUNE (THE YOUNG) (about 1120-1180). King of France (1137-1180). The son and successor of Louis VI. In 1147 he went on the Second Crusade with his wife, Eleanor of Aquitaine. Her conduct there caused him to get a divorce from her. She soon after married Henry II. of England, bringing him the dowry of Aquitaine and making him more powerful than Louis himself in France. In consequence a war broke out in 1152 between these monarchs and lasted until 1160.

LOUIS IX. or **SAINT LOUIS** (1215-1270). King of France (1226-1270). The son and successor of Louis VIII. His mother, Blanche of Castile, was regent during his minority. In 1242 he became involved in a war with Henry III. of England and defeated him in two battles. During an illness he vowed to go on a crusade if he recovered. Accordingly in 1248 he sailed with 40,000 men on the Seventh Crusade. He was defeated and captured by the Mohammedans and ransomed with 6,000 followers. He returned in 1252 on account of the death of his mother. He embarked on another crusade in 1270, and while in the East a pestilence attacked the camp and carried off the greater part of the army and the king himself. His son, Philip III., made peace and returned to France. Louis was the most distinguished monarch of his time.

LOUIS X., LE HUTIN (THE QUARRELER) (1289-1316). King of France (1314-1316). Son and successor of Philip IV. During his short reign the government was in the hands of ministers. On his death there was no male heir of the Capetian line, so the throne went to Louis' brother, Philip V.

LOUIS XI. (1423-1483). King of France (1461-1483). Son and successor of Charles VII. He made several unsuccessful attempts to procure the throne from his father and was obliged to flee to Philip the Good of Burgundy until his father's death in 1461, when he became king. He directed all of his efforts towards cutting down the power of the feudal lords and enlarging his empire. He worked by the most unscrupulous strategy rather than by force of arms. He did much to encourage literature, commerce, and manufacturing.

LOUIS XII. (1462-1515). King of France (1498-1515). Son of Charles, duke of Orleans, and successor of Charles VIII. His reign was marked by mildness and wisdom so that the king was called the "Father of the People." In 1499 he laid claim to the kingdom of Milan and overthrew Ludovico Sforza and took the city. In 1500 he formed the Treaty of Granada with Ferdinand by which the conquest and division of Naples were agreed upon. These monarchs quarreled over the division, and in 1503 the French were driven out of southern Italy. In 1508 Louis joined the pope, Ferdinand, and the emperor Maximilian, in the League of Cambrai against Venice. In 1509 Louis gained the battle of Agnadello and crushed Venice. In 1511 the pope, Venice, Ferdinand, and Henry VIII. of England formed the Holy League against France, which was driven out of Italy in 1512. In 1513 England gained the battle of the Spurs. Louis was succeeded by his son-in-law, Francis I. of Angoulême.

LOUIS XIV., THE GREAT (1638-1715). King of France (1643-1715); born at Saint-Germain-en-Laye; son of Louis XIII. and Anne of Austria. The queen was nominally regent, but affairs were really controlled by Mazarin, the prime minister. In 1660 Louis was married to Maria Theresa of Spain and, on the death of Mazarin (1661), decided to be his own prime minister. He at once brought about him a group of advisers of exceptional ability, restored the finances, and encouraged industries. For 54 years he ruled France with great decision and energy. The wars engaged in brought France much glory, but also completely exhausted her exchequer. At home Louis ruled absolutely. He revoked the Edict of Nantes, and decreed that all children should be educated in the Roman Catholic faith. The later years of Louis's life were occupied with the War of the Spanish Succession.

His reign was identified with the zenith of French power, producing Retz and Saint-Simon in history; Pascal in philosophy; Rochefoucauld and Bruyere in morals; Bossuet in oratory, and La Fontaine and Boileau in poetry.

LOUIS XV. (1710-1774). King of France (1715-1774); supported father-in-law in claim on Polish crown (1733); aided in War of Austrian Succession (1745); squandered money on Madame de Pompadour; abolished parliament; banished its members; formed a new ministry. His dissolute life paved the way for the Revolution.

LOUIS XVI. (1754-1793). Born at Versailles; king of France (1774-1792); incompetent ruler; finances in chaos; reforms irritated nobles and people; conditions became intolerable and October, 1789, a Parisian mob marched upon Versailles and conducted the royal family to Paris. The queen (Marie Antoinette) advised the unwise flight to Varennes, confirming rumors of negotiations with foreign powers. The Tuileries stormed (Aug. 10, 1792); the royal family sent prisoners to the Temple; Louis XVI. condemned to death, and died under the guillotine (January 21).

LOUISA (1776-1810). Queen of Prussia; born in Hanover. In 1793 she was married to the crown prince of Prussia (later Frederick William III.). As a queen she was very popular, her dignified conduct and beauty winning those with whom she came in contact. The Order of Luise in Prussia was founded in honor of her memory. She was the mother of Frederick William IV. and William I., afterwards emperor of Germany.

LOUIS PHILIPPE (1773-1850). King of France (1830-1848); eldest son of Philippe, duke of Orléans; born in Paris; entered the National Guard on the outbreak of the Revolution; distinguished himself at Jemappes (November, 1792); but after the battle of Neerwinden was obliged to seek refuge in Switzerland. Traveled in the United States (1796-1800), and in 1809 married Marie Amélie, daughter of Ferdinand I. of the two Sicilies. When the revolution of July, 1830, overthrew Charles X., he accepted the offer of the crown. The corruption of the electoral system, the foreign policy of Louis, together with his attempts to suppress freedom of the press, aroused great dissatisfaction among all classes of people. On February 22, 1848, disturbances occurred in the streets of Paris, and the king, seeing that he would not receive the support of the National Guard, abdicated in favor of his grandson (February 24). The remainder of his life was spent in England.

LYCURGUS. A Spartan lawgiver who lived in the ninth century B. C. and was the son of Eunomus. He introduced a constitution and established a new social order in Sparta inuring the people to hardships and developing a nation of warriors (884 B. C.). He exacted a promise from the people not to change any of his laws until his return from a pretended visit, then went away from Sparta forever. His institutions were abandoned by the Spartans in 188 B. C.

MACBETH (? -1057). King of Scotland. He revolted against Duncan, king of Scotland, in 1040, and murdered him near Elgin. He then ruled until 1057, when he was defeated by Malcolm, Duncan's son, and slain at Lumphanan.

McCULLOCH, HUGH (1808-1895). An American financier; born at Kennebunkport, Me.; removed to Fort Wayne, Ind., and became manager of a branch of the State Bank (1845); president of the State Bank (1862); comptroller of the currency (1863); succeeded Fessenden as secretary of the treasury (1865), serving until 1869, and showing exceptional ability in righting the finances of the nation after the war. On the expiration of his term, he engaged in banking in London, but accepted (1884) reappointment as secretary of the treasury, holding the office until 1885.

MACDONALD, SIR JOHN ALEXANDER (1815-1891). Canadian statesman; born in Glasgow, Scotland. The father of Canadian confederation; formed the first Canadian government (1867), becoming minister of justice and attorney general; one of the commissioners on the Alabama Claims (1871); a signer of the Washington Treaty (1871); his government was defeated in 1873; formed another government in 1878 and filled several Cabinet positions and was continuously in power until his death.

McGEE, THOMAS D'ARCY (1825-1868). Irish-Canadian politician; born in Ireland. Member of Parliament (1858-1868); twice a member of the Cabinet, and president of the Council for one term; was assassinated at Ottawa for his opposition to the Fenian movement.

MACHIAVELLI (*mak-ke-ah-vel'le*), **NICCOLO** (1469-1527). Italian statesman and writer; born at Florence. From 1498 to 1512 he was secretary of the Florentine Republic, but was dismissed on the victory of the Medici party and imprisoned for a short time (1513). In 1519 the Medici, whose favor he had won, assigned him some minor posts. The remainder of his life, however, was devoted principally to literary work. His most noted production is *The Prince.*

MACPHERSON, SIR DAVID LEWIS (1818-1896). Canadian statesman; born in Inverness, Scotland. Member of the Legislative Council (1864-1867); Dominion senator (1867-1883); speaker (1880); minister of the interior (1883-1885); knighted in 1884.

MACKENZIE, ALEXANDER (1822-1892). Canadian statesman; born near Dunkeld, Scotland. Member of first Canadian Parliament (1867) and reform leader; forced the resignation of the Macdonald government (1873) and became the first Liberal premier. He pushed the construction of the Canadian Pacific railway and formed the first Supreme Court of the Dominion. Defeated by the Macdonald party (1878) he led the opposition for two years and retired, though a member of Parliament until his death. He declined the honor of knighthood offered by the queen.

MACKENZIE, WILLIAM LYON (1795-1861). Leader of the Upper Canada Rebellion of 1837-1838; born in Dundee, Scotland. Elected to the legislature (1828); re-elected in 1830 but his seat was refused him for alleged libel; re-elected three times and each time expelled; first mayor of Toronto (1834); elected to legislature and seated (1834). November 25, 1837, he set up a provisional government of Upper Canada and with 800 followers tried to seize the government. Sir Francis Bond Head with a force defeated them at Montgomery's Farm; Mackenzie fled to the United States, was arrested for violating the neutrality act, and imprisoned until 1840 at Rochester, N. Y. Under the amnesty he returned to Canada in 1849 and was elected to Parliament (1850-1858).

MACKINNON, HON. DONALD ALEXANDER (1863-). Educated at Prince of Wales College of Charlottetown, and at Dalhousie University of Halifax; made LL.B. Called to bar of Prince Edward Island (1887); made queen's counsel (1900); president of Law Society of P. E. I. (1901); member of House of Assembly, P. E. I. (1893); re-elected for Murray Harbor (1897); attorney general in Provincial Cabinet; member of Parliament for East Queen's, P. E. I., to House of Commons, Canada (1900-1904). Made king's ccunsel, and has been lieutenant governor of Prince Edward Island since 1904.

McMILLAN, HIS HONOR SIR DANIEL HUNTER (1846-). Born at Whitby, Ontario. Served with Canadian volunteers (1864); during Fenian raid (1866); Red River expedition (1870); Northwest rebellion, gaining medal (1885); returned member for Winnipeg in Manitoba legislature (1880); member of Manitoba government (1889). Created Knight Commander of St. Michael and St. George, and since 1900 lieutenant governor of Manitoba and Keewatin.

McNAB, SIR ALAN NAPIER (1798-1862). Canadian politician and soldier; born at Niagara, Ontario. At Sackett's Harbor (1813); elected to Parliament and prime minister in the governments of the earl of Elgin and Sir Edmund Head. In insurrection of 1837, ordered the *Caroline* set on fire and sent over the falls. In Legislative Council (1860).

MAHMUD (*mah-mood'*) (979?-1030). Sultan of Ghazni; born in Ghazni, Afghanistan; founder of the Mohammedan Empire in India; took the reins of government (999); took possession of Khorassan (1000); and began a series of inroads into Hindustan (1001). In 1006, 1007, and 1009, Mahmud made other expeditions into Hindustan and, in the years that followed, conquered Ghur, Jurjistan, and Khwarezm. His last expedition against the Hindus took place in 1025. He was a patron of literature and the arts.

MAISONNEUVE, PAUL DE CHOMEDEY, SIEUR DE (? -1676). French governor of Canada (1641-1665). Montreal was founded in 1642; founded a religious colony in Canada; removed by De Tracy and died in obscurity.

MAITLAND, WILLIAM (1528-1573). A Scotch statesman; "Secretary Lethington"; made an extraordinary lord of session (1561); objected to the extreme measures of Knox; and participated in the plot against Rizzio. He fought against Mary's forces at Langside, and is said to have proposed a union between Mary and the duke of Norfolk. In 1569 Maitland was arrested for complicity in the Darnley murder, but later became

one of the leaders of the queen's party. This caused him to be regarded as a rebel, and he was besieged in Edinburgh Castle, finally forced to surrender, and imprisoned in Leith Castle, where he died.

MALCOLM. The name of four kings of Scotland. **MALCOLM III.**, surnamed **CANMORE** (Great Head) (1024?-1093). On the death of his father, Duncan, at the hands of Macbeth, he was aided in the fight for the throne by Siward of Northumbria. Having defeated and killed Macbeth, he was crowned at Scone (1057). In 1070 he married Margaret, sister of Edgar Atheling, a Saxon nobleman, who had found refuge at the Scottish court. He ravaged Yorkshire and Northumberland the same year, but was obliged to retreat. The greater part of his reign was spent in warfare with England.

MALESHERBES (*mahl'zairb*), **CHRETIEN GUILLAUME DE LAMOIGNON DE** (1721-1794). Distinguished French statesman; born at Paris; became counselor to the parliament of Paris (1745); president of the Court of Aids (1750); was appointed minister of the interior (1775); and served as a minister of state (1787-1788); defended Louis XVI., was arrested, found guilty of treason, and executed.

MANFRED (1232-1266). King of the two Sicilies (1258-1266); born in Sicily; excommunicated by Pope Alexander IV. (1259); overran Tuscany and was victorious in the battle of Monte Aperto (1260); excommunication renewed by Pope Urban IV., who bestowed his dominions on Charles of Anjou. A war with Charles followed, and Manfred was slain in the battle of Benevento (1266).

MANNING, DANIEL (1831-1887). American politician; born in Albany, N. Y. Prominent in Democratic circles and a large factor in Cleveland's election to governorship of New York and to the presidency; secretary of the treasury (1885-1887).

MANUEL I., COMNENUS (1120-1180). Byzantine emperor (1143-1180). The youngest son of the emperor Calo-Joannes. His reign was marked by continuous wars with Asia and Europe. In 1144 he reduced Raymond, prince of Antioch, to a state of vassalage. In 1147 the troops of Louis VII. of France and of Conrad III. of Germany marched through Manuel's dominions and came to blows with the Greeks. The German crusaders were falsely led by a guide, and, confronted by starvation, were obliged to retreat, losing nine tenths of their number. Manuel was severely defeated by the Seljuks in 1176 at Myriocephalon. He failed in his efforts to drive Frederick Barbarossa out of Italy. He was unsuccessful in his wars against the Venetians.

MANUEL II., PALAEOLOGUS (1348-1425). Byzantine emperor (1391-1425). Son and successor of John VI., with whom he had been associate ruler since 1373. He applied for aid from the Western princes against the Turks. The combined army was defeated by Bajazet at Nicopolis in 1396. In 1398 his nephew, assisted by the Turks, rebelled and Manuel was forced to make him co-emperor under the title of John VII. In 1402 Bajazet was defeated and taken prisoner by Timur in Angora and died (1403). Manuel reigned in peace then for 18 years. In 1421 Mohammed I. died and the war was renewed with his successor, Amurath II. In 1422 Constantinople was besieged and was saved by a humiliating treaty. Manuel retired in 1423 to a monastery, where he died in 1425.

MANUEL I., THE GREAT (1469-1521). King of Portugal (1495-1521) during the most splendid period of its history. He sent Vasco da Gama around the Cape; Cabral on the voyage which led to the discovery of South America; Cortereal to North America; and Almeida and Albuquerque to the East Indies.

MARCY, WILLIAM LEARNED (1786-1857). An American statesman; born at Southbridge, Mass.; was graduated at Brown University (1808), and began the practice of law at Troy, N. Y.; served in the War of 1812; was made associate of the Supreme Court of New York (1829); elected United States senator (Democrat) (1831); was governor of New York (1832-1838); made secretary of war in President Polk's Cabinet (1845); and was secretary of state (1853-1857) during the administration of President Pierce. The remark, "We can see nothing wrong in the maxim that to the victors belong the spoils," was made by him in the Senate.

MARGARET (1353-1412). Queen of Denmark, Norway, and Sweden. The daughter of Waldemar IV., king of Denmark, and wife of Haakon VI. of Norway. On the death of Waldemar without direct male heirs, the nobles, after an interregnum, offered the crown, in 1376, to Margaret and her husband in trust for their young son, Olaf. Haakon died in 1380, and Margaret was sole trustee of her son, Olaf, who died in 1387. She was then elected sovereign of both kingdoms. She nominated her grand-nephew, Eric of Pomerania, her successor. The Swedish king, Albert of Mecklenburg, had so alienated his subjects that they declared the throne vacant and offered it to Margaret. She defeated the king's German troops at Falköping in 1395. In 1397 she brought about, by the Union of Kalmar, the union of the crowns of the three Scandinavian kingdoms. In that year Eric, who was only 16, was declared king. Margaret continued to exert her great influence for good until her death in 1412.

MARGARET OF ANGOULEME (1492-1549). Queen of Navarre and authoress; daughter of Charles, duke of Orléans, and sister of Francis I. of France; widow of the duke of Alençon and wife of Henry of Navarre, whose kingdoms she ruled after his death in 1544.

MARGARET OF ANJOU (1430-1482). Wife of Henry VI. of England, daughter of René the Good of Anjou, king of Naples. She gained complete control of her weak husband, and the birth of a son to her so disappointed Richard, duke of York, in his hopes for the throne, that he precipitated the Wars of the Roses. Margaret led the Lancastrians in these wars and won the battle of Wakefield Green (1460), where the duke of York was slain. She was defeated at Towton (1461), Hexham (1464), and taken prisoner at Tewkesbury (1471). After five years of imprisonment Louis XI. paid 50,000 crowns for her release. She died in France.

MARGARET OF AUSTRIA (1480-1530). Regent of the Netherlands (1507-1530). Daughter of Maximilian I. of Austria and Mary of Burgundy. She negotiated the Peace of Cambrai (Ladies' Peace) with Louise of Savoy (1529).

MARGARET OF VALOIS (1553-1615). Queen of France, daughter of Henry II. of France and Catherine de' Medici, and wife of Henry IV.

MARIA DE' MEDICI (1573-1642). Queen of France. Second wife of Henry IV. and daughter of Francis, duke of Tuscany. As the mother of Louis XIII., she ruled as regent after Henry's assassination (1610), but was an incapable ruler. Through her influence Richelieu was made cardinal and minister of state, but when she found she could not control him she opposed him. She was imprisoned, escaped to England and Charles I., her son-in-law, was compelled to leave London (1641) and died in destitution.

MARIA LOUISA (1791-1847). Empress of the French; second wife of Napoleon I. and daughter of Emperor Francis I. of Austria.

MARIA THERESA (1717-1780). Queen of Hungary and Bohemia; archduchess of Austria; born at Vienna; married Francis Stephen (1736), duke of Lorraine (later grand duke of Tuscany). In 1740, on the death of her father, she became queen, nominating her husband joint ruler with herself, as Francis I. Her right of succession was at once disputed. (See AUSTRIAN SUCCESSION, WAR OF.) She brought about many reforms in education, abolished legal torture, and confiscated much church property. Maria Theresa was the mother of Leopold II., Joseph II., and Marie Antoinette.

MARIE ANTOINETTE (*mah-re' on-twah-net'*) (1755-1793). Wife of Louis XVI. of France; youngest daughter of Emperor Francis I. of Germany and Maria Theresa; born at Vienna; married the French dauphin (1770), who became king of France as Louis XVI. in 1774. Her girlish love of pleasure, and indifference to public opinion and public needs, made her very unpopular, and with the Diamond Necklace affair (1785) the nation lost all faith in her. In the management of both foreign and internal affairs her influence was unwisely exerted and, when the Notables met in 1787, she was accused of squandering the finances. From the outbreak of the Revolution until her death, she was the object of the mob's bitter hatred. In October, 1789, the royal family removed from Versailles to the Tuileries. Marie planned the flight of June 20, 1791, to Varennes, a move which only served to confirm the charges brought against her. At last (August 10, 1792) occurred the final storming of the Tuileries, Marie doing all in her power to induce the king to resort to arms. This he refused to do, thinking resistance useless, and both king and queen were taken to the prison of the Temple. In January, 1793, the queen had a parting interview with Louis, who had been condemned to death. Her trial occurred the following October before the revolutionary tribunal. She was sentenced to death and guillotined the same day.

MARTEL, CHARLES. See CHARLES MARTEL.

MARY I. (1516-1558). Queen of England; daughter of Henry VIII. and Catherine of Aragon; married Philip II. of Spain. In her efforts to restore the Catholic religion she acted always in a legal manner, first securing the consent of Parliament to all of her acts. The mass was restored in 1553, and the power of the pope reluctantly acknowledged in 1554. During her reign many persons were burned for their religious faith. Calais was lost (1558) in an effort to please her husband by engaging in war with France.

MARY II. OF ENGLAND (1662-1694). Daughter of James II. and wife of William, prince of Orange. She was proclaimed joint sovereign with her husband in 1689.

MARY STUART (1542-1587). Queen of Scots; born in Linlithgow Palace; only daughter of James V. and Mary of Guise. The greater part of her early life was spent in France, and in 1558 she was married to the Dauphin, who died in 1560; returned to Scotland (1561) as queen and in 1565 married Darnley, who offended her by aiding the conspiracy for Rizzio's death (1566). The growing intimacy between Bothwell and Mary resulted, after the murder of Darnley, in his marriage with the queen. The Protestants, constantly aware that Bothwell was responsible for Darnley's death, now took up arms to deliver Mary from him. Taken as a prisoner to Edinburgh, she refused to be divorced from Bothwell, and in 1568 escaped. At Langside, however, her forces were defeated, and she fled to England, where, for more than 13 years, she was held a prisoner until her execution (February 8, 1587).

MAXIMILIAN I. (1459-1519). Holy Roman emperor (1493-1519). Son and successor of Frederick III. He became involved in a war with Louis XI. of France over Burgundy, which Maximilian had obtained with his wife. Maximilian was victorious at Guinegate (1479), but was obliged to surrender his possessions to Louis by the treaty of Arras (1482). In 1486 Maximilian was elected king of the Romans. In 1488 the Flemings rose in rebellion and Maximilian was taken prisoner for a time. He joined the League of Cambrai against Venice in 1508, and the Holy League against France in 1513. After the great victory of Francis I. at Melegnano (1515) he was forced to give up Milan. In 1499 the Swiss separated from Germany. The marriage of Philip, son of Maximilian, to the Infanta Joan, daughter of Ferdinand and Isabella, placed the House of Hapsburg on the throne of Spain in the person of Charles I., afterwards Charles V. The marriage of the two grandchildren of Maximilian to the son and daughter of the king of Bohemia and Hungary brought these two countries into the hands of the House of Hapsburg.

MAXIMIL'IAN (FERDINAND MAXIMILIAN JOSEPH) (1832-1867). Archduke of Austria and emperor of Mexico; executed by the Mexicans. He was brother of Emperor Francis Joseph of Austria. While the French troops were in possession of the greater part of Mexico the throne was offered to him. On their withdrawal (1866), at the request of the United States, his support was gone and he alienated the loyalty of the people, who rebelled against him.

MAZARIN (*maz-a-ran'*), **JULES** (1602-1661). A prime minister of France; born at Piscina, in the Abruzzi, Italy. His diplomatic talents having been demonstrated, he was sent to France on a papal mission, where he made an agreement with Richelieu to further French interests in Italy. This he did, and openly entered the service of France (1639). Received a cardinal's hat (1641); succeeded Richelieu as prime minister (1642); and ruled almost as absolutely as his predecessor had done. Mazarin was avaricious, and at his country's expense acquired a fortune of $6,000,000.

MEDICI (*med'e-che*). Celebrated Florentine family which rose to prominence in the fourteenth century. The male line of the family became extinct (1737). Some of the noted members were Silvestro, Giovanni, Cosimo, Lorenzo the Magnificent, and Pietro.

MEDICI, ALESSANDRO DE' (1510-1537). First duke of Florence; natural son of Lorenzo II.; raised to the ducal dignity in 1532. As a ruler he was worthless, and met his death by assassination.

MEDICI, COSIMO DE', THE GREAT (1519-1574). First grand duke of Tuscany; raised to the ducal chair (1537), on the death of Alessandro de' Medici; was a patron of literature, science, and the arts; founded academies, made collections of paintings, statuary, etc. The title of grand duke of Tuscany was conferred upon him (1569) by Pius V.

MEDICI, LORENZO DE', THE MAGNIFICENT (1448-1492). The virtual head of the Florentine state; succeeded in winning the favor of the lower classes and thus making his own power absolute; was himself a poet of great ability; encouraged the arts and literature. Envious of the growing power of the house of De' Medici, some of the malcontents formed a conspiracy (of the Pazzi) to overthrow them (1478); the brother of Lorenzo fell, but the latter escaped. The policy of advancing only the members of his own family left Florence a prey to her enemies.

MEHEMET ALI (1769-1849). Viceroy of Egypt (1805-1849). He amassed wealth in trade and obtained a command in Egypt to oppose the French in support of the British. Though a remorseless tyrant he developed the manufacturing, agricultural, and commercial interests of Egypt.

MEN'ELEK or **MENELIK II.** (1843?-). King or negus of Abyssinia; born in Ankobar; son of Ailu Malakoth, king of Shoa; defeated the son of John, king of Tigre (1889), and was crowned (1890); brought the army to a high standard of efficiency and completely defeated the Italians at Adowa (1896), thus putting an end to Italian claims upon Abyssinian territory. Menelek is of negro blood, and is said to be a descendant of Solomon and the queen of Sheba.

MEROVINGIANS. First dynasty of Frankish kings in Gaul. The name is taken from Merovaeus, grandfather of King Clovis, who, in 486, put an end to the Roman control of Gaul. The dynasty ended with Childeric III., who was deposed (752) by Pipin the Short, the founder of the Carolingian or Carlovingian line.

METTERNICH, CLEMENS WENZEL NEPOMUK LOTHAR VON (1773-1859). Austrian statesman; ambassador at Dresden (1801); at Prussia (1803); at Paris (1806); minister foreign affairs (1809); conducted war against Napoleon; brought about Quadruple Alliance; Austrian chancellor (1821).

MEYER, GEORGE VON LENGERKE (1858-). Born in Boston, Mass.; in Massachusetts legislature (1892); speaker of the House (1894-1906); ambassador to Italy (1900-1905); to Russia (1905-1907); postmaster general (1907); secretary of navy (1909).

MINTO, THE RT. HON. GILBERT JOHN, EARL OF (1845-). Born in England; educated at Eton College and Cambridge University. Received his B.A. degree, and entered the Scots Guards (1867); appointed captain of Roxburgh Rifles, captain in army Reserve, and colonel, with rank of brigadier general, commanding South of Scotland volunteer brigade. Was war correspondent in Carlist War (1874); assistant military secretary with Turkish army on Danube (1877); staff volunteer in Afghan campaign (1879); private secretary to Lord Roberts in South Africa (1881); wounded in Egyptian campaign (1882); military secretary of Lord Lansdowne in Canada (1883-1886), and chief of staff in Northwest rebellion, Canada (1885). Awarded Afghan and Egyptian medals; Medjidie; Khedive star; Northwest medal and clasp; defeated at Hexham, England, for member of Parliament (1886). Assumed title (1892) at death of his father, the second Earl of Minto. Governor general of Canada (1898-1904). Viceroy of India (1905-1910).

MICHAEL PALAEOLOGUS or **MICHAEL VIII.** (1234-1282). The first of the Palaeologi. He was the ruler of Nicaea and when, in 1261, his general took Constantinople from Baldwin II., Michael ruled with him as joint emperor. He caused his colleague to be dethroned and blinded. His efforts to unite the Eastern and Western churches met with no success.

MIFFLIN, THOMAS (1744-1800). An American statesman; born of Quaker parentage in Philadelphia, Penn.; was graduated at the University of Pennsylvania (1760); member of the Pennsylvania legislature (1772-1773), and served as quartermaster general of the Continental army (1775-1777); was a member of the Continental Congress (1774-1776 and 1782-1784), being president from November, 1783, to November, 1784; was involved in the "Conway Cabal"; was speaker of the Pennsylvania legislature (1785); president of the supreme executive council of Pennsylvania (1788-1790), and first governor of his native state (1790-1799).

MIRABEAU (*mee-rah-bo'*), **HONORE GABRIEL DE RIQUETTI, COMTE DE** (1749-1791). A French statesman, orator, and writer; born at Bignon, near Nemours. He was imprisoned for debt, and was afterwards sentenced to death. This sentence was subsequently revoked, and Mirabeau in 1784 withdrew to London. Returning to Paris nine months later, he was

twice sent on government missions to Prussia (1785 and 1787), and vigorously attacked Necker's financial methods. In 1789 he was elected to the States-General and, from this time until his death, was one of the most important figures in the public affairs of France. He was chosen president of the Jacobin Club (1791) and shortly after elected president of the National Assembly. He was one of the greatest French statesmen.

MITHRIDATES THE GREAT (135?-63 B. C.). King of Pontus; born at Sinope; succeeded his father as king about 120 B. C. He waged three wars against the Romans—the First, Second, and Third Mithridatic wars. Mithridates made favorable progress against the Romans until, in 66 B. C., Pompey completely defeated him. He committed suicide. He failed because it was impossible for him to raise and train an army capable of conquering the Romans.

MONTEZU'MA II. (1466-1520). Emperor of Mexico; was successful in extending his dominions southward, but when the Spaniards landed under Cortez he refused to attack them until too late to oppose their advance upon the city of Mexico. The Mexicans called upon Cuitlahuatzin to lead them against the invaders, and Montezuma was probably murdered by the Spanish, though it was said he was killed by a stone thrown by one of his own men.

MORRIS, GOUVERNEUR (1752-1816). Born at Morrisania, N. Y.; admitted to bar (1771); member Continental Congress (1777-1780); superintendent finance (1781-1785); outlined present system of coinage; minister to France (1792-1794); United States senator (1800-1803).

MORTON, JAMES DOUGLAS, EARL OF (1530-1581). Regent of Scotland; privy councilor (1561); lord high chancellor (1563); conspired against Rizzio; opposed Queen Mary's forces at Langside; regent (1572); beheaded for implication in murder of Darnley.

MOWAT, HIS HONOR THE HON. SIR OLIVER (1820-1903). Held the high office of premier of Ontario province for 24 years (1872-1896), the longest continuous term. Born in Kingston, Ont. Educated at private school; called to bar (1841), practising in Toronto as Burns, Mowat, & Vankoughnet. Created queen's counsel (1855) and bencher of Law Society. Served on commission consolidating the public general statutes of Canada and Upper Canada (1856-1859). Elected to Parliament, representing South Ontario (1856-1864). Was provincial secretary (1858); postmaster general (1863); appointed representative of Liberal party of Upper Canada; active in framing constitution of "Fathers of Confederation," and a vice chancellor of Ontario (1864); premier of Ontario (1872-1896); attorney general (1896), then retired. He may be said to have lived down all opposition. The story of his achievements is a romance of statesmanship. He was eminently a man to be trusted; 24 years of power with stainless integrity. Appointed lieutenant governor of Ontario (1897); created Knight Commander of the Most Distinguished Order of St. Michael and St. George, and Knight Grand Cross of same order.

MURAT, JOACHIM (1771-1815). Famous French cavalry leader and king of Naples (1808-1815). Served in Italy and Egypt with Napoleon (1795-1796); commanded at Marengo; governor of Paris (1804); marshal of the empire (1804); prince and grand admiral (1805); served at Austerlitz (1805), Jena (1806), Eylau and Friedland (1807). After the downfall of Napoleon he foolishly returned to Naples and with a few followers declared himself king and liberator; was taken prisoner, court-martialed, and shot.

MURRAY, JAMES STUART, EARL OF (1531?-1570). Scotch statesman; son of James V. of Scotland. When Mary was invited to become queen of Scotland, Lord James Stuart was for a few years her chief minister. Seeing that the marriage of Mary with Darnley meant Catholic supremacy, he took up arms to oppose the union, was defeated, and forced to take refuge in England (1565). In 1568 he defeated Mary's forces at Langside, near Glasgow. He met his death by assassination.

MUTSUHITO (1852-). Emperor of Japan (1867-). He took little part in the government while Japan was being transformed into a modern nation and since has been a constitutional ruler with little personal prominence. His life and acts are singularly free from adverse criticism. The Japanese no longer use the word "Mikado," but prefer the Chinese designations "Tenshi Sama" ("August Son of Heaven") and "Shu-jo" ("Supreme Master").

MUZAFFAR-ED-DIN (1853-1906). Shah of Persia (1896-1906). He succeeded Nasr-ed-Din, who was assassinated. He made several reforms in the government of Persia which relieved the distress of his people. He visited Europe (1900), and again (1902).

NADIR SHAH (1688-1747). King of Persia; born near Kelat; aided Tahmasp II. in driving out the Afghans (1725-1727); deposed Tahmasp, and was proclaimed Shah (1736) on the death of Abbas III. He was beaten by the Turks (1733), but recovered (1734-1735) Georgia, Armenia, Kars, and Erivan. In 1738-1739 he captured Delhi, and carried off the Koh-i-nur diamond; subdued Bokhara and Khiva (1741).

NARSES (? -568). A general and statesman of the Byzantine emperor, Justinian. In 538 he was sent to Italy to act in concert with Belisarius against the Goths, but was recalled in 539. He was appointed to take the place of Belisarius on his recall. He defeated the Goths at Tagina in 552 and slew their king, Totila. In 553 he took possession of Rome and extinguished the Gothic power in Italy. In that year he was appointed exarch of Italy with his capital at Ravenna. His rule was marked by great avarice. He died at Rome on the eve of the Lombard invasion of Italy.

NASR-ED-DIN (1831-1896). Shah of Persia (1848-1896). Introduced many reforms and ruled well, except for his persecution of the Babis; assassinated and succeeded by his son, Muzaffar-ed-Din. Nasr made three tours of Europe (1873, 1878, and 1889).

NATALIE (1859-). Queen of Servia; daughter of a Russian officer, Kechko; married Prince Milan (afterward king of Servia) in 1875; lived unhappily and was divorced in 1888. On King Milan's abdication (1889) she lived in Belgrade with her son, Alexander. At the request of the National Assembly she withdrew in 1891, became reconciled to her husband in 1893, and on her return to Belgrade was warmly welcomed. After the assassination of her son, Alexander (1903), she was forbidden to return to Servia.

NECKER, JACQUES (1732-1804). French statesman and financier; born at Geneva; became well known for his publications on political economy and finance, and was made director general of finances (1777). His publication on the finances of France caused his dismissal (1781); recalled in 1788; dismissed in 1789; shortly recalled, but again dismissed (1790).

NERO (37-68). Roman emperor (54-68). He was the son of Agrippina, the wife of Claudius, who adopted him and made him his heir. On the murder of Claudius by Agrippina, the soldiers proclaimed Nero emperor in 54. He caused Britannicus, son of Claudius, to be poisoned, as he feared him as a rival; poisoned his own mother to please Poppaea Sabina. To marry the latter he divorced and put to death his wife, Octavia, in 62. In 61 a rebellion broke out in Britain under Boadicea, which was suppressed by Suetonius Paulinus. Rome itself was on the verge of a rebellion. In 64 two thirds of the city of Rome was consumed in a great fire which it is believed was caused by Nero. He blamed the Christians and began a persecution of them. He rebuilt the city in great magnificence, including the palace known as the Golden House. All Italy was plundered to supply the money for his extravagance. A conspiracy against him failed in 65 and Seneca and Lucian fell victims to his vengeance. He killed his wife, Poppaea Sabina, in a rage. His soldiers rose against him and he fled from Rome and ended his life by suicide in 68.

NES'SELRODE, KARL ROBERT, COUNT VON (1780-1862). Russian diplomat; born at Lisbon. Beginning his diplomatic services (1816) under Alexander I., he was prominent in directing the foreign affairs of Russia until 1856; became vice-chancellor (1829); imperial chancellor (1844); opposed the policy which brought on the war of 1853, and retired from the foreign office (1856).

NICHOLAS I., PAVLOVITCH (1796-1855). Emperor of Russia; born at St. Petersburg; third son of Paul I. He married in 1817 Charlotte, the eldest daughter of Frederick William III. of Prussia, and in 1825, on the death of Alexander I., Nicholas became emperor. He revived capital punishment; codified Russian law (1827-1846); converted Poland into a Russian province, and completely Russianized the foreign element in the country. In 1828 a successful war with Turkey gave Russia more territory. Intent upon forcing his hereditary designs upon Constantinople, Nicholas involved the country in the Crimean War, during which struggle he died at St. Petersburg.

NICHOLAS II. (1868-). Emperor of Russia; born at St. Petersburg; eldest son of Emperor Alexander III. and Maria Feodorovna. In 1891, during the

famine, he was president of the committee of succor; held several military commands in his own country, and in 1893 the Order of the Garter was conferred upon him in England. He traveled extensively in the Russian Empire in order to become better acquainted with its problems and, on the death of his father (1894), succeeded to the throne. Although he had previously seemed to lack the qualities essential to a ruler, Nicholas now began a reign which exhibited both energy and decision. Perhaps the most noted act of the czar was the peace edict of 1895, which resulted in the peace conference at The Hague.

NORTH, FREDERICK, EIGHTH LORD NORTH AND SECOND EARL OF GUILFORD (1732-1792). English statesman; was educated at Eton and at Trinity College, Oxford. He was sent to the House of Commons for Banbury (1754); was a junior lord of the treasury (1759-1765), and chancellor of the exchequer (1767). North succeeded to the duke of Grafton as prime minister (1770) and, although he was aware that his policy in regard to the American colonies must in the end fail, he nevertheless set aside his own convictions to please the king's obstinacy. Being unable longer to continue his policies, Lord North resigned (1782); succeeded as earl of Guilford (1790).

NORTHCOTE, SIR STAFFORD HENRY, EARL OF IDDESLEIGH (1818-1887). An English statesman. Chairman of Hudson Bay Company (1869-1874) and caused the transfer to Canada of Prince Rupert's Land; member of the Joint High Commission which signed the Treaty of Washington (1871); chancellor of the exchequer in Disraeli's Cabinet (1874); first lord of the treasury in Salisbury's Cabinet (1885-1886); foreign secretary (1886).

O'CONNOR, THOMAS POWER (1848-). Irish politician, known as "Tay Pay." Member for Galway (1880); strong Parnellite; president of Irish National League of Great Britain (1883); since 1885 member for Liverpool four times. Collected great sums for Home Rule. Brilliant journalist.

ODELL, BENJAMIN B., JR. (1854-). An American politician; born at Newburgh, N. Y. Member of Congress (1895-1899); governor of New York (1901-1905).

ODOACER (? -493). Ruler of Italy (476-493). Served under Orestes, the father of Romulus Augustulus, the last Roman emperor. He claimed from Orestes one third of the land of Italy for his soldiers. On his refusal, Odoacer marched against Pavia, stormed the city, and put Orestes to death (476). Romulus abdicated and Odoacer ruled in his place. He took the title of king only, and gave up to Zeno, emperor of the East, the title of emperor of East and West. This is regarded as the date of the fall of the Roman Empire (476). His capital was Ravenna. He gave up one third of Italy to the soldiers. Zeno became jealous of him and sent Theodoric against him. Odoacer was beaten at the battle of Isontius (489), again at Verona. Though he gained a slight advantage at Pavia (490), he was completely defeated at Ravenna and capitulated (493). A few weeks later he was invited to a banquet and slain by the hand of Theodoric.

O'HIGGINS, BERNARDO (1776-1842). Chilean statesman and general; born in Chillan; son of Ambrosio O'Higgins; was educated at Lima and in England. In 1810 he joined the Chilean patriots and three years later succeeded Carrera as commander of the army. Carrera's jealousy led him to desert O'Higgins in the battle at Rancagua (1814), and the patriots were totally defeated by the Spanish. O'Higgins was forced to leave the country. In 1817 he returned and, after the victory at Chasabuco (February 12), was made dictator of Chile. The aristocratic party, however, disapproved of his attempts to introduce a liberal constitution, and in 823, under the followers of Carrera, they rebelled and deposed him. He spent the remainder of his life at Lima.

OLAF I., TRYGVASSON (956?-1000). First Christian king of Norway. In his early days he was one of the Vikings who were the terror of the North Sea, descending upon the coasts of England, Ireland, and France. In 995 he seized the throne of Norway. He then exerted himself in the Christianizing of his subjects. He was slain in a great naval battle with Denmark and Sweden in 1000.

OLEG (? -912). Regent for Igor, the son of Rurik, the founder of the Russian Empire (879); usurped the power; made Kiev his capital; subdued the neighboring tribes and made a successful attack upon Constantinople.

ORANGE, WILLIAM THE SILENT, PRINCE OF (1533-1584). Founder of the Dutch Republic; born at Dillenburg. He was the leader of the insurrection which resulted from the attempt of Philip II. of Spain to stamp out Protestantism and establish Catholicism in the Netherlands. He succeeded in bringing about, in 1579, the Union of Utrecht (*q. v.*). This marked the birth of the Dutch Republic, but in 1580 Philip put a price on William's head, and he was assassinated at Delft.

OSCAR I., JOSEPH FRANCOIS BERNADOTTE (1799-1859). King of Sweden and Norway; born in Paris; son of Marshal Bernadotte; married Josephine Beauharnais (1823), by whom he had five children. He became king in 1844, and began a reign noted for its justice and beneficent measures. When Oscar's health failed in 1857, his eldest son (later Charles XV.) was appointed regent.

OSCAR II. (1829-1907). King of Sweden and until 1905 king of Norway; born in Stockholm; third son of Oscar I.; succeeded his brother, Charles XV., on the throne in 1872, and proved a most successful ruler. In 1857 he married the Princess Sophie of Nassau, by whom he had four sons. Oscar attained some note as a writer. and patronized industry, science, and the arts.

OSMAN or **OTHMAN I.**, surnamed **AL-GHAZI, THE CONQUEROR** (1259-1326). The founder of the Ottoman power. His father, Ertogrul, was the chief of the Turks of Phrygia in Asia Minor. On his death in 1288, Othman was chosen to succeed him. He conquered all of the western part of Asia Minor, including Nicaea (1304), Marmora (1307), and Brusa (1326).

OTHO, MARCUS SALVIUS (32-69). Emperor of ancient Rome for three months in 69; was a companion of Nero, but in 68 he joined Galba against Nero. Being chosen emperor by the soldiers at Rome, he turned against Galba. His forces, however, were completely defeated at Bedriacum, near Cremona, and he stabbed himself.

OTHO I., THE GREAT (912-973). Founder of the Holy Roman Empire of the German nation. The eldest son of Henry the Fowler, king of Germany, and succeeded him in 936 as king of Germany. He overcame the revolutions in his kingdom and the incursions of the Huns. The latter were defeated at Lechfeld in 955 and never after renewed their raids. He took northern Italy and in 962 he was crowned by Pope John XII., and thus founded the Holy Roman Empire.

OTHO III. (980-1002). Holy Roman emperor (996-1002). The son of Otho II., who died in 983. The son was immediately crowned king of the Germans at Aix-la-Chapelle. He received the imperial crown as emperor in 996. During the minority several rebellions and intrigues against him were put down. After settling the dispute over the papacy by the election of Pope Sylvester II., Otho lived at Rome and made it the capital of the Western Empire. He tried to restore the old Roman Empire but was prevented by the opposition of the Romans. Otho withdrew to Ravenna, where he died at the age of 22.

OTHO IV. (about 1175-1218). Holy Roman emperor (1198-1214). His father, Henry the Lion, was outlawed by Frederick Barbarossa in 1180 and most of his dominions taken away. In 1197 Emperor Henry VI. died, leaving an infant son. The German princes set up Philip, duke of Swabia, while the Guelphs supported Otho as king. In 1206 Otho was apparently defeated, but Philip was assassinated in 1208 and Otho was recognized by Pope Innocent III., who crowned him emperor in 1209. In 1210 he was excommunicated for seizing some church lands. In 1211 some German princes chose Frederick II., king of Sicily and Naples, in place of Otho. After the defeat at Bouvines by Philip Augustus of France in 1214, Otho retired to his estates until his death.

OTIS, JAMES (1725-1783). American statesman; born at West Barnstable, Mass. He was brought into notice by his speech against the writs of assistance, and by the publication of several pamphlets against Parliamentary taxation; was instrumental in bringing about the Stamp Act Congress (1765) and in effecting other measures for the defense of American liberties.

OTTOMAN or **TURKISH EMPIRE.** Founded by Othman I., in 1299, in Asia Minor, and soon extended into Europe. With the capture of Constantinople, in 1453, it succeeded to the Byzantine Empire.

OXENSTIERNA, AXEL, COUNT (1583-1654). A Swedish statesman; born at Fanö, in Upland; made imperial chancellor (1611). During the Polish War (1621-1625) he was regent in everything but name and, on the death of Gustavus Adolphus (1632), be-

came director of the Swedish policy in Germany; concluded the advantageous peace of Brömsebro with Denmark (1645).

PALMA, THOMAS ESTRADA (1836-1908). Cuban statesman; born near Bayamo; in the Ten Years' War (1868-1878); conducted school at Central Valley, New York; president of new Cuban republic (1902); resigned on provisional government by the United States necessitated by insurrection.

PALMER, JOHN McCAULEY (1817-1900). Born at Eagle Creek, Ky.; elected to Illinois senate (1852); served in Union forces (1862-1866), retiring with rank of major general; governor of Illinois (1868); United States senator (1891-1897).

PALMERSTON, HENRY JOHN TEMPLE, VISCOUNT (1784-1865). Born at Broadlands; succeeded to title (1802); member House of Commons (1807); secretary of war (1809-1828); secretary of state for foreign affairs (1830-1841 and 1846-1851); home secretary (1852); prime minister (1855-1857, 1859-1865).

PAPINEAU, LOUIS JOSEPH (1789-1871). Born at Montreal. Elected to Legislative Assembly of Lower Canada (1809). As leader of French Canadian party was chosen speaker (1817-1837). Quarreled with royal governors repeatedly; Lord Dalhousie declined to accept him as speaker, but the Assembly insisted and Lord Dalhousie resigned. The Assembly under his lead transmitted to England the famous "Ninety-two Resolutions." Affairs became more critical (1835); Papineau arranged with William Lyon Mackenzie, the leader of the revolutionary party in Upper Canada, to coöperate in forcing England to make the Provincial Council elective, instead of appointive. His violent speeches produced ultimate rebellion (1837); he fled to the United States and (1839) to France, returning under general amnesty to Canada (1847). Elected to Lower House of the now united Canadian Parliament, but his influence was gone.

PARNELL, CHARLES STEWART (1846-1891). Born at Avondale, Wicklow; member of Parliament (1875); organized the Land League (1879) and fought for Home Rule. Proved charges ruined his reputation and career, causing a split in the Irish party. Deposed from the leadership of his party, but refused to submit, and led a minority until his death.

PAUNCEFOTE, LORD JULIAN (1828-1902). Minister to United States (1889); first "ambassador" (1893); arbitrated Venezuelan, Bering Sea, and other difficulties between England and United States; abrogated Clayton-Bulwer Treaty; party to Hay-Pauncefote Treaty; delegate to Hague Conference (1899).

PEDRO I. (DOM ANTONIO PEDRO DE ALCANTARA BOURBON) (1798-1834). Regent of Brazil (1821); supported Independents; recognized by Portugal; emperor (1825-1831). Abdicated in favor of his son, Pedro II.; proclaimed king of Portugal (1826), but transferred throne to daughter, Donna Maria.

PEDRO II. (DOM PEDRO DE ALCANTARA) (1825-1891). Emperor of Brazil (1831-1889). Crowned (1841), his reign marked by rebellions and insurrections. Opened the Amazon to international trade (1867); abolished slavery (1888); forced to abdicate by a revolution (1889).

PEEL, SIR ROBERT (1788-1850). English statesman; Irish secretary (1812-1818); home secretary (1822-1827) and again under Wellington (1828-1830); introduced the Catholic Emancipation Bill (1829); prime minister (1834-1835) and again (1841-1846); repealed the corn laws (1846). Gladstone and Disraeli began their careers under his direction.

PELLETIER, SIR CHARLES ALPHONSE PANTALEON (1837-). Educated at Ste. Anne de la Pocatière College and Laval University. B.C.L. degree (1858); called to bar (1860); queen's counsel (1879); batonnier of Quebec Bar (1892); twice president of Society of St. Jean Baptiste; represented Kamouraska in House of Commons (1869-1877); Quebec East in Quebec Assembly (1873-1874); privy councilor of Canada (1877); senator (1877-1905); speaker of the Canadian Senate (1896-1901); judge Superior Court province of Quebec (1905-1908); decorated Companion of St. Michael and St. George (1878); Knight (1898). Resigned as judge; appointed lieutenant governor of the province of Quebec. He was for many years an officer in the Canadian militia and served in the Northwest rebellion.

PEPIN. See PIPIN.

PERICLES. The greatest statesman of ancient Greece (? -429 B. C.). His father, Xanthippus, conquered the Persians at Mycale in 479 B. C. Pericles championed the democratic party of Athens and made it supreme during what is known as the "Age of Pericles" (465-429 B.C.), the most brilliant epoch in Athenian history, not only in its political power, its trade and commerce, but in art and literature. He was the foremost orator, statesman, and general of his time. He introduced many reforms, carried Athens safely through several wars, formed the Confederacy of Delos, restored the buildings of Athens destroyed by the Persians, made Athens the most beautiful city in the world, and erected the Parthenon. After the defeat of the Peloponnesian War and the outbreak of a plague, the fame of Pericles waned. He was deposed from office, fined, and imprisoned. Though restored, he died soon after from a lingering disease.

PETER I., THE GREAT (1672-1725). Czar of Russia; founder of the modern Russian monarchy; born at Moscow; crowned joint emperor with Ivan (1682), under the regency of Princess Sophia; became sole ruler (1689); went to war with Turkey (1695); and in 1696 conquered Azov; in 1697 traveled in western Europe to acquire the knowledge necessary for developing his empire; founded St. Petersburg (1703); Russia, Denmark, and Poland united in war against Charles XII. of Sweden (1699), in which the latter was victorious till 1709, when Peter defeated him at Pultowa; the Russians conquered Finland (1713); Peter assumed title of Emperor of all the Russias (1721), when peace was concluded with Sweden; was the first to introduce into his country the reforms of other European nations.

PHILIP I. (about 1052-1108). King of France (1060-1108). Eldest son of Henry I. His mother and Baldwin V. of Flanders were regents during his minority. He increased his empire, but aroused the anger of the pope by putting aside his wife. He was excommunicated at the Council of Clermont in 1095. He was released from the ban in 1105.

PHILIP II. or PHILIP AUGUSTUS (1165-1223). King of France (1180-1223). The son and successor of Louis VII. and one of the greatest monarchs of the Capetian dynasty. In 1181 he despoiled the count of Flanders of two rich districts. In 1182 he drove the Jews out of his territories and confiscated their wealth. In 1187 he helped the English in their attack on Languedoc. In 1190 he went to the Third Crusade with Richard Coeur de Lion of England, but quarreled and returned home. He promised Richard to respect his lands: but at once on his return entered into a conspiracy with John of England to divide up Richard's possessions in France. Richard's return caused a war which was carried on against John after the death of Richard in 1199 and much of his land was lost to France. In 1214 Philip defeated the allied Germans, English, and Flemish at Bouvines. He improved and built in the large cities, and gave the first charter to the University of Paris. France obtained a commanding position in Europe in this reign.

PHILIP III., LE HARDI or THE BOLD (1245-1285). King of France (1270-1285). Son and successor of Louis IX. He had his father's piety but not his ability. His reign is unimportant except for the rise of the lawyers as a class of royal advisers.

PHILIP IV., THE FAIR (1268-1314). King of France (1285-1314). Son and successor of Philip III. The most prominent event of the reign was the struggle with the papacy. The French undertook to tax the clergy, whereupon Boniface VIII., the pope, issued the bull *"Clericis laicos"* in 1296, instructing the clergy to resist the attempt. The government issued a decree forbidding the exportation of metals from France. Then the pope gave way at once, as this would have prevented the sending of money to Rome. In 1302 Boniface again attempted to carry his point and issued the famous bull *"Unam Sanctam,"* which set forth the claims of the papacy and was a challenge to all of the monarchs of Europe. To strengthen his position Philip summoned for the first time in the history of France the States-General. In 1303 Boniface died. After a short rule of Benedict XI., Philip obtained, in 1305, the election of Clement V. as pope. In 1309 the pope took up his residence in Avignon and until 1738 the papacy was under the control of France. He became involved in war with England under Edward I. and with Guy of Flanders. He was defeated at Courtrai in 1302 and made peace (1305).

PHILIP VI. (1293-1350). King of France (1328-1350). First king of the House of Valois. The son of Charles of Valois, younger brother of Philip IV. His right to the throne was disputed by Edward III. of England, who claimed it through his mother. This involved France in the Hundred Years' War. He wiped out the disgrace of Courtrai by defeating the Flemish at Cassels (1328). The Hundred Years' War

began in 1337. The French fleet was destroyed off Sluis in 1340. Philip was extravagant and the States-General declared in 1338 that their consent was necessary before the imposition of taxes. In 1346 Edward won Crécy, and by the intervention of the pope a peace was made in 1347. The black death broke out in the same year. Philip's extravagance knew no bounds and the country was greatly oppressed.

PHILIP II. (382-336 B. C.). King of Macedonia and father of Alexander the Great. He came to the throne in 359 B. C. and gradually made himself master of all of Greece. His great stand was at Chaeronea, where, in 338, he defeated the allied Thebans and Athenians. In the midst of his preparations to invade Persia, he was assassinated. He was succeeded by his son, Alexander the Great. It was against his efforts to become master of Greece that Demosthenes uttered the famous speeches known as Philippics.

PHILIP V. (237-179 B. C.). King of Macedonia. The first part of his reign was devoted to war with the Aetolian and Achaean leagues. It is known as the Social War and was ended by the Peace of Naupactus in 217 B. C. He joined Hannibal of Carthage in the war against Rome and brought on the First Macedonian War (214-205 B. C.). He gave Hannibal no aid and the war dragged along without results to either side. In 205 B. C. he joined Antigonus in a war against Ptolemy Epiphanes of Egypt. This incurred the anger of Rome and the Second Macedonian War followed in 200 B. C. It ended with the battle of Cynoscephalae (197 B. C.), in which the Roman general, Flamininus, was victorious, Philip losing many of his possessions and much of his independence.

PHILIP II. (1527-1598). King of Spain; born at Valladolid; son of Emperor Charles V. He received the government of the Netherlands (1555); became king of Spain (1556); stamped out Protestantism in Spain, but his attempt to do so in the Netherlands resulted in a disastrous revolt; in 1580 Portugal came under his power, but the "Invincible Armada" equipped for the conquest of England was completely defeated by the English (1588).

PHIPS or **PHIPPS, SIR WILLIAM** (1651-1695). First royal governor of Massachusetts; born at Woolwich, Me. When about 18 years of age he removed to Boston, and in 1687, when he recovered $1,500,000 in treasure from a wrecked Spanish galleon, was knighted and appointed sheriff of New England. Phips captured Port Royal (1690), made an unsuccessful attack on Quebec (1691), and was appointed governor of Massachusetts (1692). As a governor he displayed a rough and arbitrary spirit, and was called to England to answer charges (1694).

PHOCION (*fo'she-on*) (402-317 B. C.). Athenian general and statesman; studied under Plato and Xenocrates; quelled disturbances in Euboea (349 B.C.), and later led a body of Athenians to Megara, where he crushed Philip's faction. In politics he opposed Demosthenes's impracticable ambition of coping with Philip of Macedon and his son, Alexander, and restrained Athens from undertaking any rash enterprise. Accused of implication in intrigues against Polysperchon, he was condemned to drink hemlock.

PICKERING, TIMOTHY (1745-1829). American statesman; born in Salem, Mass.; was graduated at Harvard (1763), and began the practice of law (1768). He took part in the battle of Lexington (1775); marched with the Essex regiment to join Washington in New Jersey (1776); was made adjutant general by Washington; participated in the campaign against Howe (1777); became quartermaster general (1780), and aided in the campaign resulting in the surrender of Cornwallis. He was a member of the Pennsylvania Constitutional Convention (1789); postmaster general (1791-1795); secretary of state from 1795 to 1800, when trouble with President Adams caused his dismissal. Pickering served as United States senator (1803-1811), and was elected to the House of Representatives (1812 and 1814).

PINCKNEY, CHARLES COTESWORTH (1746-1825). American statesman and soldier; born at Charleston, S. C. He was educated in England, and returned to America (1769); served in the first Provincial Congress of South Carolina (1775); was one of Washington's aids-de-camp; prominent member of the United States Constitutional Convention (1787); of the convention which framed a constitution for South Carolina (1790); United States minister to France (1796), where, in answer to the French minister's demand for money, he is said to have given the famous reply, "War be it, then: millions for defense, sir, but not one cent for tribute." Unsuccessful Federalist candidate for vice-president (1800); for president (1804 and 1808).

PIPIN or **PEPIN.** The name of several mayors of the palace in the kingdom of the Franks and the ancestors of the Carolingian kings. **PIPIN THE ELDER** (died 639) controlled the policy of the state with Arnwulf, bishop of Metz, under Dagobert I. **PIPIN OF HERISTAL** (died 714). Son of Pipin the Elder. He had charge as majordomus of the eastern part of the Frankish kingdom known as Austrasia, about 679. He defeated Ebroin, majordomus of the western part. He thus became ruler of all of the Franks in 687. His son was Charles Martel. **PIPIN THE SHORT** (714-768). King of the Franks (751-768). The second son of Charles Martel. In 741 he and his brother, Karlmann, received the office of mayors of the palace. In 742 they placed Childeric III. upon the throne. In 747 Karlmann abdicated and became a monk. In 751 Pipin was crowned king and Childeric was compelled to enter a monastery. Pipin was the first king of the Carolingian line. In 754 he was made patrician of Rome. A few years later he conquered the Lombards. In the following year he again defeated the Lombards, and the portion of the Exarchate of Ravenna which he took away from them, he gave to the pope. This gift is known as the Donation of Pipin. He was succeeded by his sons, Karlmann and Charles the Great or Charlemagne.

PISIS'TRATUS (? -about 527 B. C.). A tyrant of Athens, son of Hippocrates and friend of Solon. He became a leader of the poorer classes of Athens after the capture of Salamis in the war with Megara. In championing the poor people and in the attempt to redress their wrongs he was protected by a bodyguard of 500 armed men. In 560 B. C. he seized the Acropolis at Athens, and made himself tyrant or ruler of Athens. After five years his enemies overcame him and he was driven out. He returned but was again driven out in 550 B. C. He went to Euboea for 10 years; then he gathered a force and was opposed at Marathon, where he defeated his foes and was re-established in 540 B. C., holding power until his death in 528 or 527 B. C. He inaugurated reforms and improved the condition of the people. His family was known as the Pisistratidae.

PITT, WILLIAM (1759-1806). Famous English statesman; born at Hayes. Entering Parliament (1781), he made his first motion for reform in representation in 1782 which, although it failed, made so favorable an impression that Shelburne made him chancellor of the exchequer (1782). In 1783 he became prime minister; was active in the negotiations of peace with the United States; reorganized the finances; attempted to establish free trade between England and Ireland (1785); supported the proposal for the abolition of slave trade; and endeavored to effect a union between England and Ireland, which should also relieve the Catholics of their disabilities. The union act passed, but the Catholic emancipation measures failed because of the king's opposition to them. This led Pitt to resign in 1801, but he was recalled (1804).

PLANTAGENET. A line of English sovereigns (1154-1399) comprising Henry II. (1154-1189); Richard I. (1189-1199); John (1199-1216); Henry III. (1216-1272); Edward I. (1272-1307); Edward II. (1307-1327); Edward III. (1327-1377); Richard II. (1377-1399).

PLATT, THOMAS COLLIER (1833-1910). American politician; born in Owego, N. Y. After a successful business career he became United States senator (1881). After a few months he and Senator Roscoe Conkling resigned because Garfield did not defer to them in New York appointments. Both were defeated in an appeal to the legislature. Platt was again elected in 1897 and in 1903. He retired from the Senate in March, 1909, and was succeeded by Elihu Root. President of United States Express Co. (1880-1910).

POMBAL, SEBASTIAO JOSE DE CARVALHO, MARQUIS DE (1699-1782). Portuguese diplomat and statesman; "The Great Marquis"; born at the Castle of Soure, near Coimbra. He was appointed envoy extraordinary to the court of London (1739); made minister of foreign affairs (1750); prime minister (1757). As premier, Pombal crushed the Jesuits and banished them from the kingdom (1759), checked the Inquisition, encouraged agriculture, founded schools, etc. He was created marquis (1770); banished from court (1777).

POMPEY, GNAEUS MAGNUS POMPEIUS or **POMPEY THE GREAT** (106-48 B. C.). A famous Roman general and statesman. He joined Sulla against Ma-

rius, and on the death of Marius he was intrusted with the conduct of the war in Africa against the remnants of the Marian party. He drove the followers of Lepidus out of Italy and defeated the Marian party in Spain under Sertorius. He was elected consul in 70 B. C., though under the legal age. In 67 and 66 B. C. he drove the Cilician pirates from the seas; conquered Mithridates and Tigranes in Asia Minor; and formed an alliance with Caesar. Later Crassus was added and the first triumvirate was formed in 60 B. C. Pompey grew jealous of Caesar's successes in Gaul and he induced the Senate to order him to lay down his command. Caesar refused and crossed the Rubicon river into Italy, thus defying the Senate. (See CAESAR.) After the battle of Pharsalia in 48 B. C. Pompey escaped to Egypt, where he was murdered. His head was presented to Caesar on his arrival there, but Caesar ordered the murderer to be put to death.

PSAMETHIK I. (663-610 B. C.) The vassal of Asshur-bani-pal of Assyria on the throne of Egypt. In about 660 B. C. he renounced his allegiance to Assyria and became master of Egypt. He encouraged foreign settlement of Egypt, especially by the Greeks. A remarkable renaissance of art took place during his reign.

PSAMETHIK II. Son of Necho and grandson of Psamethik I. (595-589 B. C.). Noted for the extensive building operations conducted during his reign.

PSAMETHIK III. The last king of the XXVI. dynasty. He was on the throne 525 B. C., when Egypt was conquered by Cambyses and the country became a Persian province.

PTOLEMY. The name of 16 kings of Egypt, classed as the thirty-first or Macedonian dynasty, lasting from 323 to 30 B. C.

PTOLEMY I., called **"SOTER"** or **PRESERVER** (about 367-283 B. C.) was a native of Macedonia. On the death of Alexander the Great (323 B. C.) the great kingdom was divided and Ptolemy took Egypt as his share. In 306 B. C. he took the name of king and made Egypt a power of the first rank. His capital, Alexandria, became the foremost city of the world in commerce and in culture. He founded a library and a museum there and gathered around him from Greece and elsewhere the greatest men of letters; abdicated in favor of his son, Ptolemy II. (285 B. C.).

PTOLEMY II., PHILADELPHUS (308-247 B. C.). The son and successor of Ptolemy I.; reigned from 285 to 247 B. C. He engaged in no wars, but developed the greatness of his kingdom, built a great fleet, opened up commerce, built a canal from the head of the Red Sea to the Nile, erected the famous lighthouse, the Pharos, one of the wonders of the world. Manetho wrote the history of Egypt at his suggestion and a translation of the Bible was made.

PTOLEMY III., EUERGETES (THE BENEFACTOR) (reigned 247-221 B. C.). The son and successor of Ptolemy II. He made a three years' war on Syria, Babylon, and Susa, bringing back rich booty and the Egyptian gods taken away by Cambyses, from which act he gained his surname. Egypt reached the highest point of prosperity, wealth, and military glory. He enlarged the library at Alexandria and added buildings at Karnak and elsewhere.

PTOLEMY IV., PHILOPATER (reigned 221-205 B. C.). Though a dissolute sovereign and under the control of unworthy favorites, he defeated King Antiochus in an attempt to take his Syrian provinces. He patronized letters, wrote a tragedy called *Adonis*, built the beautiful temples of Deir-el-Medineh and Edfu and other places.

PTOLEMY V., EPIPHANES (reigned 205-181 B. C.). Son and successor of Ptolemy IV. At the age of five years he came to the throne. Antiochus the Great of Syria and Philip V. of Macedon tried to take advantage of his youth and to take away his provinces and his kingdom. He lost Syria and Palestine, and there was danger of Egypt being captured, but Rome interfered and prevented it. The decree recorded on the famous Rosetta Stone was made on his coronation in 196 B. C.

PTOLEMY VI. (about 191-181 B. C.). Reigned only a few months.

PTOLEMY VII., PHILOMETOR (about 188-146 B. C.). Son of Epiphanes; reigned from 181 to 146 B. C. Antiochus IV. of Syria invaded Egypt and was victorious at Pelusium and proclaimed king at Memphis. Ptolemy was taken prisoner. His brother, afterwards Ptolemy IX., gathered a force and defended Alexandria, proclaiming himself king. Antiochus retired, but on a second invasion would have been victorious had not Rome interfered and ordered him back to his kingdom. The two Ptolemies ruled together until 163, when they quarreled and Philometor fled to Rome. He regained the throne and his brother was made king of Cyrene. In 146 Philometor was slain in battle against the Syrian usurper, Alexander Balas.

PTOLEMY VIII. (about 148-146 B. C.). The son of Ptolemy VII.; reigned only a few months.

PTOLEMY IX., EUERGETES II. or **PHYSCON (FAT PAUNCH).** Brother of Ptolemy VII.; reigned from 146 to 117 B. C. He was expelled from Egypt by a revolution headed by his wife, but resumed the crown again in two years. He restored many temples; supported the library at Alexandria.

PTOLEMY X., SOTER II. or **LATHYRUS,** was the son of Ptolemy IX. He reigned from 117 to 106 B. C. jointly with his mother. In 106 B. C. he was driven from the throne by a revolution and took up his abode in Cyprus, where he ruled as king until his recall to Egypt in 88 B. C. Then followed a rebellion at Thebes that lasted for three years and was put down with difficulty. He died in 81 B. C.

PTOLEMY XI. Brother of Ptolemy X.; was surnamed Alexander I. On his brother's expulsion in 106 B. C. he was put on the throne by his mother. In 101 B. C., fearing that she was planning his death, he caused her to be murdered. In 88 B. C. he was driven from Egypt by a revolution and was killed in an unsuccessful attack on Cyprus.

PTOLEMY XII. or **ALEXANDER II.** Son of Ptolemy XI.; after a reign of 19 days murdered the queen. This so enraged the army that it rose against Alexander II. and put him to death. He was the last of the legitimate line of the Ptolemies.

PTOLEMY XIII., NEOS DIONYSUS or **AULETES (THE PIPER),** as he was a skillful player on the flute. Took the throne on the expulsion of Alexander II. On his death he left his throne to his daughter, Cleopatra VI., and named the Roman people his executors. He reigned from 80 to 51 B. C.

PTOLEMY XIV., DIONYSUS. Reigned conjointly with his sister, the famous Cleopatra, from 51 to 48 B. C., when a quarrel arose and the queen left Egypt. In 47 B. C. Caesar sent troops to support her cause and the king was drowned while trying to escape.

PTOLEMY XV. Younger son of Auletes and brother of the last king; reigned with Cleopatra from 47 to 45 B. C., when the queen caused him to be murdered to make room for her son, Caesarion.

PTOLEMY XVI., called **CAESARION.** Was the son of Cleopatra and Julius Caesar. He reigned with his mother until her death. After the battle of Actium she sent him out of the country for safety, but he was betrayed to Octavius, who caused him to be put to death in 30 B. C.

PYM, JOHN (1584-1643). English statesman; born at Brymore, Somersetshire; entered Parliament for Calne (1614); supported the Petition of Right (1628); assumed the leadership of the Short Parliament (1640); took a prominent part in drawing up the Grand Remonstrance (1641); and, after the unsatisfactory results of the campaigns (1642), carried out the union with the Scots. Pym was strongly anti-Catholic.

PYRRHUS (about 318-272 B. C.). A king of Epirus in ancient Greece and a relative of Alexander the Great. He served in the battle of Ipsus with Demetrius and was sent as one of his hostages to Egypt. He returned to Epirus and took possession of the throne. Then he took the western part of Macedonia, and when Demetrius became king he joined a league to deprive him of his throne. Macedonia was then divided between Pyrrhus and Lysimachus (287 B. C.). Pyrrhus reigned only a few months, being in turn expelled by Lysimachus. The Tarentines in lower Italy sought his aid against the Romans, and in 280 B. C. he defeated the Romans at Tarentum by the aid of 20 elephants, which terrified the Romans. He won a costly victory at Asculum in 279 B. C.; made a truce with Rome; helped the Sicilians against Carthage in 278 B. C. In 275 B. C. he was completely defeated at Beneventum by the Romans under Dentatus. In 273 B. C. he again invaded Macedonia and took the throne; made an unsuccessful attack on Sparta and was killed by a tile thrown by a woman from a house top while besieging a town in Argos.

QUADRUPLE ALLIANCE. (1) A league between Great Britain, France, Austria, and the Netherlands against Spain (1718). (2) A league between Great Britain, Austria, Prussia, and Russia against Mehemet Ali (1840), who threatened to overthrow the Turks.

QUAY, MATTHEW STANLEY (1833-1904). American politician; born in Dillsburg, Pa.; graduated at Jefferson College (1850); in 1861 he entered the Union army, and served with distinction; was a member of the legislature (1865-1867); secretary of the state of Pennsylvania (1872-1878, 1879-1882); state treasurer (1885-1887); in 1887 he was elected United States senator, and was re-elected in 1893 and 1901.

RALEIGH, SIR WALTER (1552-1618). English statesman, navigator, and author; born at Hayes Barton, in Devonshire; a great favorite of Queen Elizabeth; served in various positions, and in 1585 planted a settlement on Roanoke Island, which proved a failure. It was through his efforts that the potato and tobacco plants were introduced into England. His complicity in a plot against the king being detected, he was sent to the Tower (1603) and, though condemned to death, was reprieved. He made his last voyage in 1616, and on his return was executed by James I.

RAM'ESES. The name of twelve kings of Egypt in the XIX. and XX. dynasties. **RAMESES I.**, first king of the XIX. dynasty, ruled for a short time about 1355 B. C. He waged war in Nubia, left an inscription there, built a part of Karnak. His mummy was found in 1881 at Deir-el-Bahari. **RAMESES II.**, son of Seti I. and grandson of Rameses I., reigned in Egypt (1388-1322 B. C.) and is regarded as the Pharaoh of the Hebrew oppression. He conducted foreign wars, built splendid temples at Abou Simbel, Karnak, Luxor, Abydos, Memphis, Thebes, and elsewhere. His mummy was also discovered in 1881. **RAMESES III.** (about 1269-1244 B. C.) was the second Pharaoh of the XX. dynasty. His reign was marked by a general decline of Egyptian greatness.

RANDOLPH, JOHN, OF ROANOKE (1773-1833). American statesman; born at Cawsons, Va.; elected to Congress (1799); and in 1801 was made chairman of the ways and means committee; lost his seat (1813); but was returned (1815); elected to the senate (1825); minister to Russia (1830).

REED, THOMAS BRACKETT (1839-1902). American politician; born at Portland, Me.; graduated at Bowdoin College (1860); was a member of the legislature (1868-1869); state senator (1870); attorney-general of Maine (1870-1872); member of Congress (1877-1899). He was speaker of the fifty-first, fifty-fourth, and fifty-fifth Congresses, where he earned the name of "Czar" Reed for his method of counting a quorum; he was an efficient speaker, and was a prominent candidate for the Republican presidential nomination (1896).

REID, WHITELAW (1837-). American diplomatist and journalist; born at Xenia, Ohio. Became editor and proprietor of the New York *Tribune* (1872) on the death of Horace Greeley. Candidate for vice-president (1892); minister to France (1889-1892); special ambassador to Queen Victoria's jubilee (1897); member of the Peace Commission which terminated the Spanish-American War (1898); special ambassador to King Edward VII.'s coronation (1902); ambassador to England to succeed Joseph Choate (1905).

REIGN OF TERROR. That part of the French Revolution beginning with the fall of the Girondists (June, 1793) and ending with the overthrow of Robespierre (July 27, 1794).

REMUSAT (*ray-mu-zah'*), **CHARLES, COMTE DE** (1797-1875). French politician; born in Paris; began his career (1818) as a journalist and supporter of Guizot; was deputy (1830-1848); under-secretary of state (1836); minister of the interior (1840); drew up a protest against the ordinances of Polignac, which precipitated the revolution of July; elected to the constituent and legislative assemblies (1848); exiled the same year; amnestied (1859), and devoted himself to literature and science.

RHODES, CECIL JOHN (1853-1902). African statesman; born in Bishop Stortford, Hertfordshire; the one aim of his life was the extension of British rule in South Africa. In 1888 Rhodes obtained from the king of the Matabele a grant of the territory now known as Rhodesia. He was premier of Cape Colony from 1890 to 1896, resigning after the Jameson raid; on the revolt of the Matabele (1896), he went unarmed and alone into the midst of the rebels and concluded permanent peace. One of Rhodes's projects, the building of a Cape-to-Cairo railway, was partly carried out before his death. In his will he bequeathed practically his whole fortune ($30,000,000) to the public service; to his college, Oriel, at Oxford, he left $500,000, while about $10,000,000 was left to found a number of three-year scholarships tenable at Oxford. Two of these were offered to each state and territory in the American Union. The annual income for each scholarship is about $1,500. Rhodes is buried in the Matoppo Hills in the territory which bears his name.

RICHARD I., COEUR DE LION (1157-1199). King of England (1189-1199). On the death of his father, Henry II., he was crowned king, but with Philip Augustus of France went on the Third Crusade in 1190. Affairs were handled by William Longchamp, but John obtained more and more power each year. The Crusade was a failure. Richard made enemies, and when he was returning home was taken prisoner by Leopold, duke of Austria, through whose kingdom he was passing, and by him handed over to the emperor, Henry VI., who imprisoned him. He was ransomed and returned to England in 1194. He forgave John, but began a war with the king of France. He was killed while storming a town in France in 1199. Sismondi says of him, "A bad son, a bad brother, a bad husband, and a bad king."

RICHARD II. (1366-1400). Son of Edward, the Black Prince, and the grandson and successor of Edward III. (1377-1399). Affairs were well administered for a time by John of Gaunt, the king's uncle. In 1381 Wat Tyler led an insurrection over a heavy poll tax, which was settled with much skill by the king. Richard had much trouble with the nobles; while he was in Ireland subduing the country, Bolingbroke landed in England with followers, Richard was taken prisoner, having been deserted by his friends, and taken to London, where he formally abdicated in 1399. Bolingbroke took the throne with the title of Henry IV. Richard was imprisoned in Pontefract Castle, where he was murdered in 1400.

RICHARD III. (1452-1485). King of England (1483-1485). Youngest son of Richard, duke of York, and brother of King Edward IV., whom he greatly assisted in the wars of the Roses. On the death of Edward IV. Richard was the foremost man in the kingdom. He caused his two nephews to be smothered in the Tower and took the throne in 1483. Buckingham planned an uprising against Richard in favor of the earl of Richmond of the House of Lancaster. His plans were frustrated and he was executed. The earl of Richmond landed in England with a force and met the king's army on Bosworth Field in 1485, where Richard was defeated and slain. Richmond became king as Henry VII. of the House of Tudor.

RICHELIEU (*reesh'e-loo*), **ARMAND JEAN DU-PLESSIS, CARDINAL DE** (1585-1642). French statesman; born in Paris of noble family; consecrated bishop of Luçon (1607); in 1622 he received the cardinal's hat from Gregory XV. Louis XIII. called him to the office of prime minister in 1624, and from this time until his death he was the ruler of France in everything but name. His objects were (1) to ruin the Protestants as a political party, (2) to humble the pride of the nobles, (3) to reduce all subjects to their duty, (4) to raise France to its proper position among foreign nations. Richelieu was a patron of letters, the founder of the French Academy, and the author of many important reforms in finance and in the army. He ranks among the greatest statesmen of France.

ROBERT II. (1316-1390). King of Scotland, son of Walter Stuart and Marjory; succeeded David II. (1371). It was during his reign (1388) that the battle of Otterburn ("Chevy Chase") occurred, in which the English were totally defeated. Robert was the founder of the Stuart dynasty.

ROBERT OF COURTENAY. Fifth Latin emperor of Constantinople (1221-1228).

ROBESPIERRE (*robes-pe-air'*), **MAXIMILIEN MARIE ISIDORE** (1758-1794). French revolutionist of Irish origin; born at Arras. On the death of Mirabeau (1791), he was recognized as revolutionary leader. Was a member of the "Great Committee of Public Safety" (1793), and in this position he put to death many innocent men and women, finally perishing on the guillotine himself. Robespierre was precise, austere, and earnest; his aim was to establish a reign of virtue.

ROMANOFF, ROMANOV, *or* **ROMANOW.** Russian dynasty. Mikhail Feodorovich (? -1645) was the founder of the line, and became czar (1613); he was the son of the Metropolitan of Rostov. In 1762, when the empress Elizabeth was succeeded by Peter III., her nephew and founder of the Romanoff-Oldenburg or Romanoff-Holstein-Gottorp dynasty, the direct line became extinct.

ROOT, ELIHU (1845-). American Cabinet officer; born in Clinton, N. Y.; counsel for William M. Tweed in the "Tweed Ring" trial; also in the Stewart will case and the Fayerweather will case; secretary of war to succeed General Russell A. Alger (1899-1904); member Alaskan Boundary Tribunal (1903); secretary of state to succeed John Hay (1905); president American Society of International Law (1906). United States senator (1909).

ROSEBERY, ARCHIBALD PHILIP PRIMROSE, EARL OF (1847-). English statesman; held several offices in Gladstone's Cabinet; foreign secretary (1892); prime minister (1894-1896).

RUDOLPH I. (1218-1291). King of Germany and Holy Roman emperor (1273-1291), and founder of the present House of Austria or the House of Hapsburg. The Great Interregnum began in 1256 and for many years Germany was without an acknowledged head. In 1272 the pope tried to force the election of an emperor. Rudolph of Hapsburg was chosen as the most fitting, and was crowned at Aix-la-Chapelle in 1273. In 1276 he made war on the king of Bohemia, who refused to acknowledge him, and took valuable territory from him. He defeated and slew Ottokar in 1278 at Marchfeld and placed his own sons, Albert and Rudolph, in charge of the forfeited lands. He suppressed the "robber barons" and destroyed their strongholds.

RURIK. A Scandinavian leader or Norseman who, in 862, on invitation of the people at Novgorod, established there the first regular government. This is regarded as the beginning of the Russian Empire and many noble Russian families trace their origin back to Rurik. Rurik later established himself around Lake Ladoga, while his brothers made themselves rulers of adjacent territory around Lake Peipus. On their death Rurik joined their possessions to his. He died in 879 and was succeeded by his son, Igor, whose descendants ruled Russia until the House ended in 1598 and was succeeded by the House of Romanoff.

RUSSELL, LORD JOHN (1792-1878). English statesman; an ardent champion of parliamentary reform; carried the Test and Corporation acts (1828); supported the Catholic Emancipation Bill (1829), Reform Bill (1832); premier (1846-1852 and 1865); secretary of foreign affairs in coalition ministry (1852); foreign secretary under Palmerston (1859).

SAGASTA, PRAXEDES MATEO (1827-1903). Spanish statesman; born at Torrecilla de Cameros; was elected to the Cortes (1854) from Zamora; became minister of the interior (1868); president of the Cortes (1871); formed a new cabinet (1881), and remained in power until 1883. Sagasta was premier (1885-1890, 1892-1895, 1897-1899, and 1901-1902); he was thus in charge of affairs during the Spanish-American war.

SALADIN (*sal'ah-deen*), **SALAH-ED-DIN YUSUF** (1137-1193). Sultan of Egypt and Syria; born at Tekrit; became ruler of Egypt (1174); conquered Syria and the greater part of Mesopotamia (1174-1183); crushed the kingdom of Jerusalem (1187); Tiberias, Acre, Beirut, and many other places were also taken. Acre was retaken, after a memorable siege (1191), by the armies of the Third Crusade under Philip II. and Richard the Lion-hearted, and a three years' truce between Richard and Saladin (1192) left to the Christians the coast from Jaffa to Tyre.

SALISBURY (*sawls'bury*), **ROBERT ARTHUR TALBOT GASCOYNE CECIL, THIRD MARQUIS OF** (1830-1903). English statesman; born at Hatfield, Hertfordshire; in 1865, on the death of his elder brother, he became heir to the marquisate and assumed the title of Lord Cranborne; he was a member of the House of Lords as Marquis of Salisbury (1868); chancellor of the University of Oxford (1869). When the Disraeli ministry came into power (1874), Salisbury again became secretary of state for India; and his entire sympathy with the new premier's imperialist policy led to his appointment in 1876 as British representative to the Conference of Constantinople. He was appointed secretary of state for foreign affairs (1878), chosen leader of the Conservative party (1881), and on the retirement of the Gladstone ministry (1885) became head of the government. In 1892 he went out of office, but returned (1895). In 1900 the Unionists were again returned with a large majority under the leadership of Lord Salisbury; in July, 1902, he resigned office, having been premier for a longer period than any other minister since the Reform Act of 1832. He was succeeded by Arthur Balfour, his nephew. His foreign policy was sound and on the whole successful, and no statesman was more alive to the necessity of maintaining the peace of Europe.

SANCHO GARCIA (905-925). Was the first to bear the title of the king of Navarre, having wrested that region from the Saracens.

SANTA ANNA or **SANTA ANA, ANTONIO LOPEZ DE** (1795-1876). Mexican politician and general; born at Jalapa, Mexico; in 1828 he took the field as a supporter of Guerrero for the presidency. On becoming commander in chief (1829), he defeated the last attempt of Spain to re-establish authority in Mexico, and was chosen president (1833). His tendencies toward monarchism led to a rebellion (1835), in the suppression of which he was taken prisoner. He defended Vera Cruz against a French fleet (1838), and was president (1841-1845). Was Mexican general in the war with the United States (1846-1848); president of Mexico (1853-1855). He died in poverty.

SARDANAPALUS (corrupted from Assyrian *Asshur-bani-pal*) (668-626 B. C.). Last great Assyrian monarch; son of Esarhaddon. The weakness of Assyrian forces resulted in the loss of Egypt about 653 B. C.; and a siege of Tyre ended, finally, in capitulation. Sardanapalus is noted, not for his conquests, but for his magnificent building plans carried out in the cities of Babylonia and in Nineveh. It is from his great library at Nineveh that much of the modern knowledge of Babylonian literature and religion is obtained. He died on a great funeral pyre, if the classical story is to be relied upon.

SCHURZ, CARL (1829-1906). American statesman; born in Liblar, Prussia; he came to the United States in 1852, and practised law in Milwaukee (1859). President Lincoln appointed him minister to Spain (1861), but he shortly resigned to join the Union army; served as United States senator from Missouri (1869-1875), and was secretary of the interior in Hayes's Cabinet. He subsequently engaged in literary work, writing several books, among which may be mentioned biographies of Clay and Lincoln.

SELEUCUS I. The first of the line of the Seleucidae or kings of Syria, and that portion of Asia Minor which was parceled out on the death of Alexander the Great in 323 B. C. (312- about 280 B. C.). With the assistance of Antigonus he added to his territory, which he held for a time as a satrapy. A quarrel arose between these allies and Seleucus took refuge in Egypt until 316 B. C. His return to Babylon is the beginning of the era of the Seleucidae, which was used by the Syrians and Asiatic Greeks as a reckoning point until the fifteenth century. In 306 B. C. he took the title of king. In 302 B. C. he joined the league of Ptolemy, Lysimachus, and Cassander against his former ally, Antigonus, and with his cavalry and elephants decided the battle of Ipsus, in which Antigonus was defeated and slain (301 or 300 B. C.). He was the most powerful of the generals of Alexander and had the largest share of the empire. He gave the provinces east of the Euphrates to his son, Antiochus, who succeeded him. He also conducted successful wars against Demetrius of Macedonia and Lysimachus of Thrace. Assassinated about 280 B. C.

SELEUCUS II. King of Syria (246-226 B. C.). He gained the throne by assassinating Antiochus II. He was driven from his kingdom by Ptolemy Euergetes. On the withdrawal of the latter he regained his throne, and succeeded in holding Syria and most of Asia Minor. He conducted an expedition against the revolted provinces of Parthia and Bactria. He was routed by Arsaces the Great, the deliverer of Parthia. He was succeeded by his sons, Seleucus III. and Antiochus III., the Great.

SEMIRAMIS. Mythical queen of Assyria, supposed to have been of divine parentage. She married Ninus, king of Assyria and founder of Nineveh. After his death she ruled as regent for her son. She invaded India and made many foreign conquests. She built the city of Babylon in all of its magnificent grandeur, and all great works were attributed to her. In her sixty-second year she mysteriously disappeared,—some say she was transformed into a dove. Much fable is mingled in the stories and it is doubted by many that she ever lived, although according to Herodotus there was a Semiramis in Assyria in the first half of the eighth century B. C.

SERVIUS TULLIUS. The sixth king of Rome. He succeeded Tarquinius the Elder, who was slain by the sons of Ancus Martius. The wife of Tullius was Tarquin's daughter. She concealed the murder of her father until her husband was secure upon the throne. Tullius introduced important reforms and a

new constitution. He also made a truce with the Latins. L cius, a son of Tarquinius and brother of Tullius's wife, led a conspiracy against the king and murdered him. It is said that Tullia, the daughter of the king and wife of Lucius, in recognition of her husband's deed and right to the throne, drove her chariot over the dead body of her father as it lay in the market place.

SESOSTRIS. The Greek name of a more or less mythical king of Egypt who is told about by Herodotus, Diodorus Siculus, and others. He is represented as conquering the known world, including India, Asia Minor, and Europe. He divided Egypt into 36 nomes, introduced the caste system, made canals, and built many magnificent buildings. Some maintain that he is identical with Usertesen of the XII. dynasty. For a time he was thought to be Rameses II. Legend has attributed to him many wonderful deeds.

SEVERUS, LUCIUS SEPTIMIUS (146-211). Roman emperor (193-211). He was commander of a legion and governor of provinces when, on the murder of Pertinax, he was proclaimed emeperor in 193. Julianus had taken the throne when Severus arrived at Rome, but he was promptly murdered. Severus distributed large donations to the soldiers and assured himself of the power. He captured Byzantium after a three years' siege in 197; plundered the capital of the Parthians, Ctesiphon, in 198. On his return to Rome in 202 he pleased the people with magnificent shows and the distribution of money. He quelled a rebellion in Britain, marching with a large army to the extreme north of the island. He built the Wall of Severus in Britain; died at Eboracom (York).

SEWARD, WILLIAM HENRY (1801-1872). Famous American statesman; born in Florida, New York; graduated from Union College (1820); a member of the New York state senate (1830); and was governor of his state (1838-1842); he was a member of the United States senate (1849-1861), where his ability made him the undisputed leader of the whigs. The election of Lincoln to the presidency in 1860 was a great disappointment to Seward, whose hope for the presidential chair had been high. But he nevertheless, on becoming secretary of state in 1861, gave splendid support to the administration. His most important diplomatic achievement was the purchase of Alaska from Russia (1867). An attempt was made on his life simultaneously with the assassination of Lincoln.

SEYMOUR, HORATIO (1810-1886). American politician; born at Pompey Hill, N. Y.; was military secretary to Governor Marcy (1833-1839); mayor of Utica (1842); governor of New York (1853-1855 and 1863-1865); unsuccessful Democratic candidate for the presidency (1868). During the war he gave his support to the Lincoln administration.

SHALMANESER I. (about 1300 B. C.). An Assyrian monarch who first sought to enlarge the western boundaries of his kingdom. He made Calah, south of Nineveh, the capital of his country.

SHALMANESER II. (858-823 B. C.). The son of Asshur-natzir-pal; continued the extension of the empire. He led twenty-six campaigns, crossing the Euphrates twenty-five times, and entering Syria five times. He defeated Benhadad II. of Damascus in the battle of Karkar in 854 B. C. In 842 B. C. he defeated Hazael of Damascus at Mount Hermon, received the homage of Jehu of Israel, his ally, and subjugated Babylonia.

SHALMANESER IV. (727-722 B. C.). This king made a campaign against Damascus, also against Israel, and captured Samaria after a three years' siege.

SHAW, LESLIE MORTIMER (1848-). American banker and cabinet officer; born in Morristown, Vermont; received his education at Cornell College, and at the University of Iowa, subsequently taking up the practice of law at Denison, Ia. In the Republican campaign of 1896 he became prominent as a speaker, and was elected governor of Iowa (1897 and 1899). Secretary of the treasury (1902-1907)

SHERMAN, JOHN (1823-1900). American statesman; born in Lancaster, Ohio. Began the practice of law (1844); member of Congress from 1855 until 1877; serving in the House up to 1861, and in the Senate afterwards. He was on the committee of inquiry sent to Kansas, and participated in the movement for the formation of the Republican party. Was chairman of finance committee in the Senate; author of the refunding act (1870); secretary of the treasury under President Hayes (1877-1881). His able management of the treasury made it possible for the government to resume specie payments (1879). Sherman again served in the Senate (1881-1897); prominent candidate for the presidency (1880, 1884, 1888). He resigned as secretary of the treasury (1897) to become secretary of state in President McKinley's cabinet, a position which he resigned in 1898.

SHERMAN, ROGER (1721-1793). Eminent statesman; born in Newton, Mass. He removed to New Milford, Conn. (1743), and in 1754 was admitted to the bar; served as judge of the Connecticut supreme court (1766-1789); was a member of the Connecticut senate (1766-1785); mayor of New Haven (1784-1793. In the Constitutional convention at Philadelphia (1787) he took an active part, and was influential in securing the ratification of the Federal constitution in Connecticut. Sherman is best remembered as being one of the Committee of Five appointed to prepare a draft of the Declaration of Independence.

SIDNEY or **SYDNEY, ALGERNON** (1622-1683). Famous English statesman; he rendered his first military service against the rebels of Ireland (1642); entered the Long Parliament for Cardiff (1645), and although appointed commissioner (1648) for the trial of Charles I. did not present himself at any of the court sessions. Not approving of concentration of power in Cromwell, he withdrew from politics in the Protectorate, and in 1659 was sent on a political mission to Denmark. Returned to England (1677); plotted with Louis XIV. against Charles II.; for alleged complicity in the Rye House plot (1683), he was summarily sentenced to death.

SIGISMUND (about 1368-1437). Holy Roman emperor (1411-1437). Second son of Charles IV. In 1396 he undertook a crusade against the Turks, but was overwhelmed by Bajazet I. at Nicopolis. In 1387 he came to the throne of Hungary, but was deposed in 1401. By the aid of hired troops he regained it. In 1411 he was elected Holy Roman emperor. He was the author and protector of the Council of Constance, and brought about the deposition of Pope John XXIII. His greatest disgrace was the desertion of John Huss, to whom he granted safe conduct to the Council, where he was afterwards burned at the stake. In 1419 he succeeded to the throne of Bohemia. The Hussites were in arms and bloody defeats were sustained by the army of Sigismund and the allied Germans. He was the last of the House of Luxemburg.

SIMON (*se-mon'*), **JULES FRANCOIS** (1814-1896). French statesman and philosopher; born in Lorient, Morbihan, Brittany. He became professor of the history of philosophy at the Sorbonne in 1839, and was elected to the Constituent Assembly (1848). Losing his seat in the Sorbonne (1851), he remained in private life until 1863, when he was appointed to the Legislative Assembly for Paris. He strongly opposed the war with Germany, becoming, after the fall of the empire, a member of the committee of national defense. Assuming the office of minister of public instruction in Thier's cabinet (1871), he served in this capacity until 1873. He then resumed his position in the National Assembly, and in 1875 was elected life senator; became premier (1876), but resigned (1877).

SLIDELL, JOHN (1793-1871). American statesman; born in New York City; in 1810 he graduated from Columbia College and, removing to New Orleans (1819), served (1829-1833) as United States district attorney for Louisiana; he was elected to Congress (1843); appointed minister to Mexico (1845); was United States senator (1853-1861); made Confederate commissioner to France, and was taken prisoner by Wilkes. (See TRENT AFFAIR.) Slidell spent the remainder of his life in England.

SMITH, CHARLES EMORY (1842-) American Cabinet officer; born in Mansfield, Conn. American minister to Russia (1890-1892); postmaster general from 1898 to 1902, during which time he established the rural free delivery.

SOLON. An Athenian lawgiver and patriot. He was the first Athenian to gain renown by his poetry. He was elected archon in 594 or 593 B. C. at a critical time in the government of the people. His laws relieved the poor debtors from the oppression of the rich, prevented them from being sold into slavery, forbade the export of grain in order to get a supply at a low price for home consumption, and limited the amount of land that might be held by one person. He withdrew from public life after these and other reforms had been accomplished (about 639-559 B. C.).

SOULOUQUE (*soo-look'*) **FAUSTIN** (1785-1867). Emperor of Haiti; born in Haiti, a negro slave. He took part in the negro insurrection (1803), and was later raised to the rank of captain by President Boyer. After the dissolution of the republic (1844) he became a contestant for the presidency, was elected (1847), and declared himself emperor (1847). He

was a cruel ruler and, following a revolution (1858), was forced to abdicate.

SOLYMAN (SULEIMAN). The name of three Turkish sultans, the most renowned being Solyman II. the Magnificent (about 1495-1566). He began to rule in 1520, and made military preparations for carrying out an extensive scheme of conquest. His armies overran a great part of central Europe, Persia, and Arabia; in 1542 the Turks were supreme in the Mediterranean. At Malta (1565), however, he was repulsed. Under him the Ottoman empire reached the height of its power.

SPOONER, JOHN COIT (1843-). American legislator; born in Lawrenceburg, Ind.; settled in Wisconsin; served during the Civil War and was brevetted major at its close; elected to the United States Senate in 1885; defeated for governor by George W. Peck in 1892; again elected to Senate in 1897 and in 1903; a prominent debater and was regarded as the spokesman of the McKinley and Roosevelt administrations; resigned from the Senate (1907) to practise law.

STANLEY, FREDERICK ARTHUR, EARL OF DERBY (1841-). English statesman; sat in Parliament (1865-1886); secretary of state for the Colonies (1885-1886); governor general of Canada (1888-1893).

STEIN, HEINRICH FRIEDRICH KARL, BARON VON (1757-1831). Prussian statesman; born at Nassau; president of the Westphalian Chambers (1796); superintendent of the department of trade and manufacture (1804); he retired to private life about 1815.

STEN STURE, THE ELDER (died 1503). The regent of Sweden from 1470. Nephew of Charles VIII., whom he succeeded as regent. The Swedish nobility opposed him and favored Christian I. of Denmark. Sture defeated him at Brunkeburg, now Stockholm, in 1471. He introduced printing and founded the University of Upsala (1477). In 1497 he was forced to resign to King John of Denmark, but regained power in 1501 and ruled until his death.

STEPHEN (about 1105-1154). King of England (1135-1154). Nephew of Henry I. and his successor. Although Henry tried to have his daughter, Matilda, succeed him, Stephen, Earl of Blois, by promises to the nobles of permission to build castles on their own estates and the granting of other privileges, obtained their support. David I. of Scotland invaded England to enforce his niece's claims, but was badly defeated at Northallerton, or "the battle of the Standard." For fourteen years the country was in a state of civil war and completely devastated. In 1141 Stephen was taken prisoner at the battle of Lincoln. Matilda was crowned but proved unsatisfactory as a ruler. Stephen was released and crowned again. After much strife a compromise was made whereby Matilda's son, Henry, should succeed Stephen.

STEPHENS, ALEXANDER HAMILTON (1812-1883). American statesman; born near Crawfordville, Ga., was admitted to the bar (1835); state House of Representatives (1836); Congress (1843). He was made vice-president of the Confederacy (1861) and, with Messrs. Campbell and Hunter, met Lincoln and Seward in an effort to end the war by negotiation; member of the House of Representatives (1873-1882); governor of Georgia (1883). Called the "Nestor of the Confederacy."

STEVENS, THADDEUS (1793-1868). American statesman; born at Danville, Vt. In 1816 he was admitted to the bar, and served in Congress from Pennsylvania (1849-1853, 1858-1868). Stevens was probably as bitter an enemy as the South ever had.

STEVENSON, ADLAI EWING (1835-). American politician and vice-president (1893-1897); born in Christian County, Ky., and removed to Bloomington, Ill.; member of Congress (1875-1877 and 1879-1881); an unsuccessful candidate for vice-president in 1900.

STOUGHTON, WILLIAM (about 1632-1701). An early governor of Massachusetts from 1692 until his death. In 1692, as chief justice of the special session of the court, he presided at the trial of the "Salem witches" and treated them with great severity. Stoughton Hall at Harvard is named for him.

STRAFFORD, THOMAS WENTWORTH, EARL OF (1593-1641). An English statesman in the reigns of James I. and Charles I. He was the leader in the Commons in 1628; lord deputy of Ireland (1633-1639). After 1640 he was the most influential adviser of Charles I. and was impeached by the Long Parliament and beheaded.

SULLY, MAXIMILIEN DE BETHUNE, DUKE DE (1560-1641). The great minister of Henry IV. of France. He reformed the state affairs and from 1597 to 1609 he trebled the income of the state.

SUMNER, CHARLES (1811-1874). An American statesman; born in Boston; was a successful lawyer, but his Fourth of July oration on the "True Grandeur of Nations" (1845) first made him well-known. In the formation of the Free Soil party he played an important part; was senator (1854-1874). Sumner's unflinching courage, sincerity, and devotion to duty give him high rank among American statesmen.

TALLEYRAND (*tah-le-ron'*) **DE PERIGORD, CHARLES MAURICE, PRINCE OF BENEVENTO** (1754-1838). French diplomatist and statesman; born in Paris. Having been educated for the church, he was made bishop of Austin (1789). On being excommunicated by the pope some time later, he severed connections with the church and in 1797 was appointed minister of foreign affairs. When Bonaparte became emperor, Talleyrand, who had upheld his ambitious projects, became grand chamberlain and Duke of Benevento. After the peace of Tilsit (1807) he broke off relations with the emperor and became, by degrees, leader of the opposition. He favored Napoleon's deposition, and, on the return of Louis XVIII., became his minister, and was made ambassador to the Congress of Vienna. Talleyrand committed his greatest crime in bringing about the death of the Duc d'Enghien.

TARQUINIUS or **TARQUIN THE ELDER.** King of Rome (616 B. C.). Successor of King Ancus Martius. His reign was glorious. He added the twelve Etrurian cities to the empire; built sewers; laid out the Circus Maximus; built shops in the Forum; instituted national games; and laid out the temple on Capitoline hill. He was assassinated by the jealous sons of Ancus Martin.

TEMPLE, SIR WILLIAM (1628-1699). English diplomatist; born in London; best known for the negotiation (1668) of the "Triple Alliance" in which England, Holland, and Sweden united to check the ambitions of France. Abandoning politics he retired to Sheen and, in 1686, to Moor Park, in Surrey, where he lived in the enjoyment of his garden, and in the pursuit of letters.

TEWFIK PASHA (1852-1892). Khedive of Egypt (1879-1892). At the time of his accession Egypt was financially embarrassed and in 1880 the dual control of Egypt by England and France was instituted on account of the large interests of these countries in the Suez Canal. The Nationalists under Arabi Pasha rebelled and England put down the rebellion. In the latter part of Tewfik's reign the Sudan was taken by the Mahdi, and it was not until after his death that England began to recover it.

THOMPSON, SIR JOHN SPARROW DAVID (1844-1894). Born at Halifax, Nova Scotia. Common school education; admitted to bar (1865), rising rapidly to front rank. Elected to Provincial Assembly (1877); appointed attorney general (1878), becoming premier (1881). Justice of Superior Court of Nova Scotia (1882); minister of justice in Dominion Government (1885), brilliantly defending the Administration in regard to Louis Riel (1886). Legal adviser to British plenipotentiaries negotiating Fisheries Treaty of 1887 with United States, and was made Knight Commander of St. Michael and St. George. Became prime minister of Canada (1892); arbitrator Bering Sea controversy (1893); elected member Queen's Privy Council (1894).

TILLEY, SIR SAMUEL LEONARD (1818-1896). Canadian statesman; born at Gagetown, New Brunswick. Played an important part in provincial politics (1850-1865). A strong advocate for confederation he carried the province for union (1866); a delegate to the Westminster Conference (1867), where the British North American Act was drawn up; first Canadian minister of customs (1867); minister of public works and finance (1870); lieutenant governor of New Brunswick (1873); minister of finance (1878); again lieutenant governor of New Brunswick until 1893.

TITUS FLAVIUS SABINUS VESPASIANUS. Roman emperor (79-81); captured Jerusalem (70); on death of his father surprised all by his wisdom and justice. He gave money lavishly to all sufferers in the great fire at Rome (80), which destroyed the Temple of Jupiter Capitolinus, and other handsome buildings. At the height of his popularity he suddenly died. He was succeeded by his younger brother, Domitian.

TOMPKINS, DANIEL D. (1774-1825). American politician; born in Fox Meadows, Westchester County, N. Y. He was elected to Congress (1804), but resigned to become judge of the New York Supreme Court. Was governor of New York (1807-1816); in 1816 he was elected vice-president of the United States; re-elected (1820).

TOOMBS, ROBERT (1810-1885). Born in Wilkes County, Ga.; admitted to bar (1830); Georgia legislator (1837-1840, 1842-1843); United States senator (1853-1861); expelled from Senate; secretary of Confederacy and brigadier general later.

TOUSSAINT (*too-san'*), **FRANCOIS DOMINIQUE,** called **L'OUVERTURE** (*loo-ver-tur'*) (1743-1803). Haitian statesman; full-blooded negro, born in Haiti. He joined the French republicans (1794), and became commander in chief of the island. Supported by the whole body of negroes, he afterwards became president. He was treacherously seized by the French (1802), and died in captivity in France; he is a splendid type, intellectually and morally, of the possibilities of the negro.

TRAJAN, MARCUS ULPIUS (52-117). Roman emperor (98); born in Spain. Although a great part of his reign was spent in gratifying his warlike ambitions, he by no means neglected internal affairs. He maintained impartial justice, managed the finances successfully, built military roads, bridges, canals, and suppressed the Christians as political enemies. Trajan's column, built in 114, may still be seen in Rome.

TRIBUNE. Roman office; military tribunes and plebs tribunes; in early days each of the three tribes furnished so many soldiers commanded by military tribunes; later increased to six. When the plebs seceded (494 B. C.) they obtained the right to six tribunes of the plebs to protect their interests. These obtained many important innovations in Roman law.

TUPPER, SIR CHARLES (1821-). Canadian statesman; born in Amherst, Nova Scotia; elected to Provincial Legislature (1855); premier of Nova Scotia (1864-1867); strongly supported confederation; president of Council (1870-1872); minister of inland revenue (1872); of customs (1873); of public works (1878); of railways and canals (1879); high commissioner for Canada in London (1884 and 1888); British plenipotentiary on Fisheries Commission at Washington (1887-1888); premier of Canada (1896).

TUPPER, HON. SIR CHARLES HIBBERT (1855-). Born at Amherst, Nova Scotia. Educated at Windsor Academy and McGill University, winning Governor General's scholarship. LL.B. Harvard (1876); called to bar of Nova Scotia (1878); queen's counsel (1890); called to bar of Ontario (1895); member executive council Canadian Bar Association (1896); returned to House of Commons for Pictou (1882-1904); minister of marine and fisheries (1888-1895); minister of justice and attorney general (1895); solicitor general (1896); assisted in fur seal discussion (1891); representative of Her Majesty as agent for Great Britain at Paris, in Bering Sea Arbitration (1893); Knight Commander of St. Michael and St. George. He carried through Parliament many measures of importance to mercantile and shipping classes, especially acts for improvement in shipping cattle from Canadian ports across the Atlantic.

TWEED, WILLIAM MARCY (1823-1878). American politician and leader of the "Tweed Ring"; born in New York City. The "Ring" conducted the most flagrant system of spoliation of the city ever heard of. The system was exposed by the New York *Times* (1871); a committee of seventy citizens led by Samuel J. Tilden investigated and Tweed was indicted for forgery and grand larceny. He was sentenced to 12 years' imprisonment and a fine of $12,300.18. After two years' imprisonment he was released on a technicality. He was at once rearrested on a civil warrant for over $6,000,000. While out for a drive with an attendant from Ludlow Street jail he escaped and fled to Spain. He was returned (1876) and again imprisoned in Ludlow Street jail, where he died.

TWEEDIE, HON. LEMUEL J. (1849-). Born at Chatham, New Brunswick. Called to bar of New Brunswick (1871); represented Northumberland in House of Assembly for New Brunswick (1874; has represented that county ever since, except in 1878-1882). Surveyor general (1890); provincial secretary (1896); premier (1900-1907); represented New Brunswick at King Edward's coronation (1901-1902), and has been lieutenant governor of New Brunswick since 1907. King's counsel and Doctor of Laws.

VALENS (about 328-378). Roman emperor of the East (364-378). The brother of Valentinian I., with whom he shared the empire. Valens reduced taxes by 25 per cent.; defeated the Ostrogoths in a war lasting from 367 to 369; defeated the Persians in 372; and permitted the Goths, who were hard pressed by the advancing hordes of the Huns, to settle in Thrace. This brought about war with the Goths themselves, in which the army of Valens was completely routed and he was slain at Adrianople (August 9, 378).

VALENTINIAN I. A Roman emperor (364-375) of humble origin; was the successor of Jovian in 364; chose his brother Valens as his colleague and gave the East to him. The foreign possessions suffered from the incursions of the barbarians, but the administration of affairs at home was excellent. He won victories over the Alemanni and Saxons. Valentinian was a strong and able ruler as well as an orthodox and tolerant Christian.

VALENTINIAN II. (372-392). Roman emperor (375-392). The son of Valentinian I. During his long minority affairs were administered by his mother, the empress Justina, who died in 389. As he was showing great promise of good government he was murdered by instigation of the Frank, Arbogastes, commander in chief of his army.

VALENTINIAN III. (419-455). Roman emperor (425-455). Grandnephew of Valentinian II. He was weak and contemptible. Affairs were managed by his mother, Placidia, until her death in 450. Africa was lost to the empire through Genseric and the Vandals; other barbarian tribes encroached on the empire, though their advances were stopped at Châlons by Aetius, the bulwark of the Western Empire, who was murdered in 454 by the sword of his master. Valentinian was assassinated in the following year.

VALLANDIGHAM, CLEMENT LAIRD (1820-1871). American politician; born in New Lisbon, Ohio; elected to Congress as a representative (1857 and 1863). During the Civil War he was a strong slavery man, and a zealous supporter of the State Rights principle. His extreme views led him to denounce in no light terms the government's policy of coercion. For these disloyal utterances he was arrested (May, 1863), tried, and sentenced to imprisonment till the end of the war. Lincoln reduced the sentence to deportation beyond the military lines.

VANE, SIR HENRY (1613-1662). English statesman; born at Hadlow, in Kent. Came to America (1635); became governor of Massachusetts (1636); returned to England (1637), where he was joint treasurer of the navy (1639-1641). Vane was knighted in 1640; succeeded Pym as leader in the House (1643); member of the council of state (1649); took part in the negotiations for the union of England and Scotland (1652). He was executed in 1662.

VAN RENSSELAER, STEPHEN, THE PATROON (1764-1839). American statesman and landholder; born in New York; early engaged in state politics and held several offices, including lieutenant governor (1795-1801). In 1812 he led the unsuccessful attack on Queenstown. One of the strongest promoters of the Erie Canal, and president of the Canal Commission (1824-1839); member of Congress (1823-1829).

VAUDREUIL, PHILIPPE DE RIGAUD, MARQUIS DE (about 1641-1725). A French governor general of Canada (1703-1725). Served under Frontenac and won a notable victory over the Iroquis (1693); governor of Montreal (1701).

VAUDREUIL-CAVAGNAL, PIERRE FRANCOIS, MARQUIS DE (1698-1765). Last French governor of Canada (1755-1760); governor of Three Rivers (1733); of Louisiana (1742); succeeded Dupresne in 1755. He surrendered Montreal to the English (1760); and though blamed for mismanagement was vindicated at his trial.

VESPASIAN or **TITUS FLAVIUS VESPASIANUS** (9-79). A Roman emperor of humble origin. He passed through minor military offices until in the reign of Claudius he was made commander of a legion and was sent to Britain in 43, where he conquered the Isle of Wight. In 66 he was chosen to conduct the war against the Jews. When Galba died in 69 he was proclaimed emperor by his soldiers in Alexandria. The Senate meantime proclaimed Otho. Civil war resulted, for the army in Germany had proclaimed their general, Vitellius, emperor. Vespasian, being in Egypt, cut off the grain supply from Rome, gave the Jewish war over to his son, Titus, and remained in the East. Otho died a violent death and the army of Vitellius was routed. The murder of Vitellius in 69 left Vespasian in control of the Roman world. He reigned for ten years. Jerusalem was captured by Titus (70); Vespasian and Titus shared the grand triumph; the Colosseum was built; Britain was conquered by Agric-

cia in 78 and 79. Vespasian died in 79 and was succeeded by his son, Titus.

VICTOR EMMANUEL I. (1759-1824). King of Sardinia; born at Turin. On the abdication of his brother, Charles Emmanuel IV. (1802), he became king. He organized a fleet and an army, but his policy led to a rebellion in Turin and Alessandria (1821), and he abdicated in favor of his brother, Charles Felix.

VICTOR EMMANUEL II. (1820-1878). Was king of Sardinia (1849-1861); king of Italy from 1861; assisted by Garibaldi, he created a new Italian kingdom. Venice welcomed him in 1866, and with the occupation of Rome in 1871 the unity of Italy was completed.

VICTOR EMMANUEL III. (1869-). King of Italy since August 11, 1900, succeeding his father, King Humbert I. Educated principally under the direction of his mother; entering the army in 1887 as a second lieutenant, rose gradually in rank until in 1897 he was commanding general at Naples. Having represented his father in several affairs of a diplomatic nature, he was well prepared, both as a statesman and as a soldier, to assume the crown on the assassination of his father. The king went into office with the full confidence of his subjects, and has shown himself to be an efficient ruler. In 1896 he married Princess Helena (1873), daughter of Prince Nicholas of Montenegro.

VICTORIA, ALEXANDRINA (1819-1901). Queen of Great Britain, daughter of Edward, Duke of Kent, fourth son of George III.; born at Kensington Palace; she ascended the throne (1837) and, in 1840, married Albert of Saxe-Coburg-Gotha. He died in 1861. Victoria received the title of empress of India by act of Parliament (1876). Her impartiality, unselfishness, and high sense of duty made her beloved by her subjects. She ruled longer than any previous English sovereign, while her reign was one of the most illustrious in the annals of any nation.

VLADIMIR I., THE GREAT. The first Christian sovereign of Russia (980-1015). After the death of his brothers he became ruler of all Russia and greatly increased the boundaries of it. After his marriage with Anna, sister of Constantine XII., which was consummated under threat of war, he became baptized and broke all the idols on his return home. Churches were built, schools established, capital punishment abolished, and mercy was shown to all criminals.

WADE, BENJAMIN FRANKLIN (1800-1878). American politician; born at Feeding Hills, Mass.; removed to Ohio (1821), and admitted to the bar (1827). He was elected United States senator from Ohio (1851) and served for eighteen years.

WALDECK-ROUSSEAU, PIERRE MARIE ERNEST (1846-1904). French statesman; minister of the interior in Gambetta's ministry (1881), and in that of Jules Ferry (1883-1885); formed a ministry (1899). He resigned in 1902, having held office longer than any other premier of the Third Republic.

WALDEMAR I., THE GREAT (1131-1182). King of Denmark (1157); he raised his country to a high degree of prosperity, conquered Wendish Germany, and southern Norway

WALDEMAR II., THE CONQUEROR (1170-1241). King of Denmark (1202); succeeded his brother, Canute VI. Was the son of Waldemar the Great.

WALDEMAR III. (-1375). King of Denmark (1340); conquered Gothland (1361); engaged in two wars with the Hanseatic League.

WALPOLE, SIR ROBERT, FIRST EARL OF ORFORD (1676-1745). English statesman; born at Houghton in Norfolk; in 1708 he was made secretary of war; in 1710 treasurer of the navy; was paymaster of the forces (1714 and 1720); in 1715, chancellor of the exchequer, and first commissioner of the treasury. He was prime minister from 1715 to 1717, and from 1721 to 1742. Walpole hesitated at no method to advance his own policies and those of the whigs.

WASHBURNE, ELIHU BENJAMIN (1816-1887). American politician; born at Livermore, Me.; studied law at Harvard, and was admitted to the bar (1840); removed to Galena, Ill., and sat in Congress (1853-1869), being chairman of the committee on commerce (1855-1865). His economical methods in government service won him the name of "Watch Dog of the Treasury." When Grant became president he was made secretary of state, shortly resigned to become minister to France, and returned to the United States (1877).

WEBSTER, DANIEL (1782-1852). American statesman, lawyer, and orator; born in Salisbury, N. H.; graduated from Dartmouth (1801); admitted to the bar (1805); in House of Representatives (1813-1816, 1823-1828); in Senate (1828-1841, and 1845-1850); made his famous reply to Hayne (1830); received nomination for the presidency (1836), but was defeated; defeated for the presidency by Taylor (1848); secretary of state (1850). In his reply to Hayne, probably the greatest speech made in Congress, Webster showed clearly the nature of the Union.

WEED, THURLOW (1797-1882). American political leader and journalist; born in Cairo, N. Y.; served in the War of 1812. He declined to accept any offices, but was instrumental in the nomination of Harrison (1840), Clay (1844), Taylor (1848), Scott (1852), and Fremont (1856).

WENCESLAUS (1361-1419). Holy Roman emperor (1378-1400) and king of Bohemia as Wenceslaus IV. (1378-1419). The son and successor of Charles IV. In 1393 he caused John of Nepomuk to be tortured to death for refusing to give up the secrets of the confessional. In 1394 he was arrested and imprisoned by a conspiracy of the nobles, but the German princes secured his release. In 1395 he sold the title of the duke of Milan to Visconti for 100,000 florins. The powerful archbishop of Mainz secured his deposition from the throne in 1400, Rupert of the Palatinate being chosen to succeed him. He still retained the throne of Bohemia. In 1402 his brother, Sigismund, imprisoned Wenceslaus in Vienna for fifteen months. Wenceslaus resigned in favor of his brother, Sigismund.

WHITE, ANDREW DICKSON (1832-). American diplomat; born at Homer, N. Y.; attaché of the United States legation at St. Petersburg during the Crimean War; professor of history and English literature, University of Michigan (1857-1863); lecturer on history (1863-1867); New York state senator (1863-1867); president of Cornell (1867-1885), to which he contributed $300,000 and his historical library of 40,000 volumes, founding a school of history and political science; Santo Domingo commissioner (1871); minister to the German Empire (1879-1881); minister to Russia (1892-1894); commissioner on Venezuela-Guiana boundary (1896); ambassador to Germany (1897-1903); chairman of American delegation to The Hague Peace Conference (1899); author of *Democracy and Education*, an *Autobiography*, and other works; regent of Smithsonian Institution, Washington.

WHITNEY, WILLIAM COLLINS (1841-1904). American politician and financier; born in Conway, Mass.; graduated at Yale (1863) and at Harvard. Took an active part against the "Tweed Ring" (1871); was corporation counsel of New York City (1875-1882); supported Cleveland for governor (1882); secretary of the navy (1885-1889); managed the Cleveland campaign (1892). He was instrumental in securing the consolidation of the street railway companies of New York City into one system.

WILHELMINA (1880-). Queen of the Netherlands since 1890; only daughter of William III., king of the Netherlands (1849-1890), and Queen Emma, who was regent from the death of King William till the coronation of her daughter in 1898. Wilhelmina married Duke Henry of Mecklenburg-Schwerin, February 7, 1901; a daughter, Princess Juliana, was born April 29, 1909. Queen Wilhelmina's reign has been one of uninterrupted peace and prosperity.

WILLIAM I., THE CONQUEROR (about 1027-1087). King of England (1066-1087). He was the son of Robert II., Duke of Normandy. When his father set out on his pilgrimage to the Holy Land he caused William to be chosen to rule in his absence. On Robert's death in 1035 William became Duke of Normandy. His entire rule in Normandy was a succession of rebellions against him. In 1051 he visited Edward the Confessor in England and was probably promised the throne on the death of Edward. When Edward died in 1066 and Harold, Earl of Wessex, claimed the throne, William landed in Hastings with an army and gave battle to Harold at Senlac Hill. Harold was slain and the Normans were victorious. William then took the throne under the title of William I., the Conqueror. By 1070 the subjugation of England was well-nigh complete. In 1072 William invaded and conquered Scotland. He created the New Forest in 1076. He introduced the Curfew Bell, caused a survey of the whole country to be written out in the Domesday Book in 1085; parceled out the lands of the English to his followers; introduced the Feudal System, whereby the Duke had complete control over all of his subjects.

WILLIAM II., RUFUS (about 1056-1100). King of England (1087-1100). He was the third son of William the Conqueror, who named him as his successor in 1087. Lanfranc, Archbishop of Canterbury, was his guide, and as long as he lived William's conduct and reign were satisfactory. On Lanfranc's death he began a rule which caused the English chronicle to record on his death that "he was loathsome to well-nigh all his people and abominable to God." He made war upon Scotland and its king did him homage. With his brother, Robert of Normandy, he made war upon his younger brother, Henry (afterward Henry I.), and drove him into exile. He gave Robert 10,000 marks for his kingdom in Normandy to enable him to join the Crusades. He was shot by an arrow from the bow of Sir Walter Tyrrel while hunting in the New Forest, and was buried at Winchester without ceremony.

WILLIAM III. or WILLIAM HENRY OF NASSAU, PRINCE OF ORANGE (1650-1702). King of England; born in The Hague, Holland; son of William II. of Orange. He was crowned king in February, 1689. The resistance of the adherents of James II. was broken in Ireland by the battle of the Boyne (1690). In 1691 William led the army in the Netherlands in person; took Namur (1692); signed the treaty of Ryswick (1697), and was acknowledged king of England; he was sole ruler after 1694, on which date Mary, who reigned jointly with him, died.

WILLIAM IV. (1765-1837). King of England (1830-1837). Third son of George III. and uncle of Queen Victoria, who succeeded him. The great event of his reign was the passage of the Reform Bill, which was passed by the House of Lords unwillingly by reason of the king's threat to create a sufficient number of new lords to secure its passage.

WILLIAM I. (1797-1888). King of Prussia and emperor of Germany; born at Berlin; son of Frederick William III. of Prussia. Took part in the campaign against Napoleon I. (1814-1815), and, on the accession of his brother, Frederick William IV. to the Prussian throne (1840), he became governor of Pomerania. His Absolutist attitude at the time of the revolution in Berlin (1848) made it necessary for him to seek refuge in England; but he soon returned, suppressed the revolutionary of Badeners (1849), and in 1858 was appointed regent. This position he held until his brother's death in 1861, when he was crowned king of Prussia. In the war of 1866, which proved so humiliating to Austria, William took the field as commander in chief of the Prussian army; he also led the German forces in the war with the French (1870-1871), and received the capitulation of Paris in February, 1871. His success led the German states to offer him the crown, which he accepted; he was proclaimed emperor at Versailles, January 8, 1871.

WILLIAM II. (1859-). German emperor and king of Prussia; son of emperor Frederick III. He succeeded his father (1888) and, though of warlike tastes, his reign has been remarkably peaceful. Three points in his reign deserve special emphasis: (1) the fall of the great chancellor, Bismarck (1890), brought about by the king's resolve to be an absolute ruler; (2) the ambition of the emperor to develop colonial expansion principally for purposes of trade; and (3) the building of a powerful navy, superior in strength and efficiency to that of any first class European power except England. William has proved himself an unremitting foe of socialism. Among his many achievements his work of educational reform is noteworthy.

WILMOT, DAVID (1814-1868). American politician; born in Bethany, Pa. Remembered chiefly for the famous "Wilmot Proviso" (1846) declaring slavery unlawful in any territory acquired from Mexico. Although passed by the house, the senate rejected the bill. Wilmot was admitted to the bar (1834); he was a Democrat and served his state, Pennsylvania, in the House (1844-1851) and in the Senate (1861-1863); supported the Republicans on the slavery issue.

WILSON, HENRY (1812-1875). American statesman; born in Farmington, N. H.; member of the Massachusetts House of Representatives (1840); of the state senate (1844-1845); succeeded Everett as United States senator from Massachusetts (1855), and in 1872 was chosen vice-president with Grant.

WILSON, JAMES (1835-). American Cabinet officer; born in Scotland; lived with his parents in Norwich, Conn. (1852-1855); removed to Tama County, Iowa; member of the state assembly for three terms, during the last of which he was speaker; member of Congress (1873-1877 and 1883-1885); secretary of agriculture since 1897.

WILSON, WILLIAM LYNE (1843-1900). Born in Jefferson County, Va.; president University of West Virginia; member of Congress (1883-1895); carried repeal of Sherman Silver Purchase Bill; framed Wilson Tariff Bill (law in 1894); postmaster general (1895-1897); president Washington and Lee University (1897).

WINTHROP, JOHN (1588-1649). First colonial governor of Massachusetts; born at Edwardston, Suffolk, England. In 1630 he left England for America being among the first Salem colonists. He was made governor of the colony and held that position almost continuously till his death. Winthrop kept an elaborate journal covering the whole period of his life in Massachusetts; this work is of inestimable value as a part of the early history of the state.

WITTE, SERGEI YULIEVITCH (1849-). Russian statesman; minister of communications (1892) and, soon after, minister of finance until 1903. As such he promoted manufactures, favored protection, introduced the gold standard and government monopoly of alcohol. He increased the revenues and negotiated large loans; was appointed president of the Committee of Ministers (1903) and a member of the Council of the Empire; negotiated the Treaty of Portsmouth, N. H., with Japan; took an active part in the Duma; regarded as one of Russia's greatest statesmen.

WOLSEY, THOMAS (1475-1530). Famous English cardinal. Graduate of Magdalen College, Oxford (1490); ordained priest (1498); rose rapidly; royal chaplain to Henry VII. and special ambassador in important missions. Royal almoner to Henry VIII.; member of Privy Council (1511), becoming the practical ruler of England. Bishop of Lincoln (1514); archbishop of York (1514); cardinal (1515) and lord warden. Arrogant and imperious he opposed the king; was stripped of all honors (1529) and driven from the court. Charged with high treason but died before his trial. Known as "the Great Cardinal."

WRIGHT, LUKE E. (1847-). Born in Memphis, Tenn.; admitted to bar; attorney general of the state (1880-1888); on Philippine Commission (1900); vice governor (1901); governor (1903); secretary of war (1908).

WU TING FANG (1842-). Born in the Hsinhin district of Kwangtung, China; studied English law (1874-1877); returned to China (1877); constructed first Chinese railway; negotiated the Treaty of Shimonoseki with China; vice-president board of war; minister to United States; LL.D. University of Pennsylvania (1900); and again minister in 1907. Held many Chinese offices.

XERXES I. A king of Persia (reigned 485-465 B. C. Son of Darius I. and supposed to be the Ahasuerus of the Bible. After subduing the revolted Egyptians he spent three years in preparing an attack upon the Greeks. With an army estimated at one million he marched from Sardis for the Hellespont in the spring of 480 B. C. He had also a fleet of 1,200 ships. Successful at Thermopylae, he was overwhelmed first at Salamis and then at Plataea. He fled from Greece and attacked Babylon on the way home, razing the temples of the city. Murdered with his eldest son, Darius, by Artabanus, captain of the guard.

XERXES II (about 450-425 B. C.). A king of Persia. He was the son of Artaxerxes I. and the grandson of Xerxes I. He came to the throne when his parents were murdered in 425 B. C., and was himself assassinated after reigning 45 days.

XIMENES (*he-may'neth*), **DE CISNEROS, FRANCISCO** (1436-1517). Spanish cardinal and statesman; born at Torrelaguna, Castile. Became Queen Isabella's confessor (1492) and, on the death of Mendoza (1495), became archbishop of Toledo. Became chief minister to Philip I. (1504), and cardinal (1507); ruled Castile as regent (1516).

YOUNG, SIR JOHN (1807-1876). Born at Bombay, Hindustan. Educated at Eton and at Corpus Christi College, Oxford, graduating 1829. Conservative member of Parliament (1831-1855); lord of treasury (1841); chief secretary for Ireland (1852-1855); lord high commissioner of Ionian Islands (1855-1859); governor general of New South Wales (1861-1867); governor general of Canada and governor of Prince Edward Island (1869); suppressed Louis Riel's rebellion, and was created Baron Lisgar (1870). Returned to Europe (1872).

ZENO'BIA. Queen of Palmyra; began to rule about 267 A. D. Conquered Egypt, but at Hemesa was overwhelmed by Aurelian (272).

STATISTICS OF THE COUNTRIES OF THE WORLD.

COUNTRIES.	Population.	Sq. Miles.	Capitals.
China	432,000,000	4,277,170	Peking.
British Empire*	396,968,798	11,286,344	London.
Russian Empire	143,000,000	8,660,395	St. Petersburg.
United States†	84,662,000	3,602,990	Washington.
United States and Islands‡	94,000,000	3,756,884	Washington.
Philippines	7,635,426	122,000	Manila.
Porto Rico	953,243	3,606	San Juan.
Hawaii	154,001	6,449	Honolulu.
Tutuila, Samoa	5,800	54	.....
Guam	8,661	200	.....
France and Colonies.	92,531,325	4,296,130	Paris.
France	39,118,995	207,054	Paris.
Colonies	53,412,340	4,089,076	.....
Algeria	4,739,556	184,474	Algiers.
Senegal, etc	4,523,000	806,000	St. Louis.
Tunis	1,900,000	51,000	Tunis.
Cayenne	32,908	30,500	Cayenne.
Cambodia	1,500,000	37,400	Saigon.
Cochin-China	2,968,529	22,000	.....
Tonquin	7,000,000	46,400	Hanoi.
New Caledonia	51,514	7,650	Noumea.
Tahiti	10,300	600	.....
Sahara	2,550,000	1,544,000	.....
Madagascar	2,505,000	227,000	Antananarivo.
German Empire, in Europe	60,649,278	208,830	Berlin.
Prussia	31,293,324	134,603	Berlin.
Bavaria	6,524,372	29,282	Munich.
Saxony	4,508,601	5,787	Dresden.
Wurttemberg	2,302,179	7,528	Stuttgart.
Baden	1,867,944	5,821	Karlsruhe.
Alsace-Lorraine	1,819,470	5,600	Strassburg.
Hesse	1,209,893	2,965	Darmstadt.
Mecklenburg-Schwerin	625,015	5,135	Schwerin.
Hamburg	874,878	158	.....
Brunswick	485,958	1,424	Brunswick.
Oldenburg	438,856	2,479	Oldenburg.
Saxe-Weimar	388,095	1,388	Weimar.
Anhalt	328,029	906	Dessau.
Saxe-Meiningen	268,916	953	Meiningen.
Saxe-Coburg-Gotha	242,432	755	Gotha.
Bremen	263,440	99	.....
Saxe-Altenburg	206,508	511	Altenburg.
Lippe	145,584	469	Detmold.
Reuss (Younger line)	144,584	319	Gera.
Mecklenburg-Strelitz	103,451	1,131	Neu Strelitz.
Schwarzburg-Rudolstadt	96,835	363	Rudolstadt.
Schwarzburg-Sondershausen	85,152	333	Sondershausen.
Lubeck	105,857	115	.....
Waldeck	59,123	433	Arolsen.
Reuss (Elder line)	70,603	122	Greiz.
Schaumburg-Lippe	44,902	131	Buckeburg.
German Africa	12,210,000	931,450	.....
Austro-Hungarian Empire	46,973,359	261,035	Vienna.
Japan (with Formosa)	49,732,952	147,655	Tokio.
Netherlands	5,347,182	12,648	Amsterdam.
Netherlands and Colonies	41,347,182	795,648	Amsterdam.
Borneo	1,129,889	212,737	.....
Celebes	1,878,473	71,470	.....
Java	28,746,688	50,554	Batavia.
Moluccas	410,190	43,864	Amboyna.
New Guinea	200,000	151,789	.....
Sumatra	3,168,312	161,612	.....
Surinam	70,007	46,060	Paramaribo.
Turkish Empire	41,049,720	1,622,080	Constantin'ple.
European Turkey	6,130,200	65,350	.....
Asiatic Turkey	17,683,500	693,610	.....
Tripoli	1,000,000	398,000	Tripoli.
Bulgaria	3,744,300	37,200	Sofia.
Egypt	9,821,100	400,000	Cairo.
Italy	32,475,253	110,550	Rome.
Italy and Colonies.	36,825,253	449,050	Rome.
Abyssinia	3,500,000	150,000	.....
Eritrea	450,000	88,500	.....
Somal Coast	400,000	100,000	.....
Spain	18,891,574	194,783	Madrid.
Spanish Africa	273,709	253,580	.....
Spanish Islands	127,172	1,957	.....
Brazil	17,371,069	3,218,130	Rio Janeiro.
Mexico	13,607,259	767,005	City of Mexico.
Korea	10,519,000	82,000	Seoul.
Congo State	30,000,000	900,000	.....
Persia	7,653,000	628,000	Teheran.
Portugal	5,423,132	35,490	Lisbon.
Portugal and Colonies	14,582,084	838,442	Lisbon.
Portuguese Africa.	8,248,527	793,980	.....
Portuguese Asia	910,425	8,972	.....
Sweden	5,294,885	172,876	Stockholm.
Norway	2,240,032	124,129	Kristiania.
Morocco	5,000,000	219,000	Fez.
Belgium	7,074,910	11,373	Brussels.
Siam	7,000,000	220,000	Bangkok.
Roumania	5,912,520	50,720	Bucharest.
Argentine Republic	5,974,771	1,135,840	Buenos Aires.
Colombia	4,000,000	438,436	Bogota.
Afghanistan	4,000,000	215,400	Cabul.
Chile	4,000,000	291,544	Santiago.
Peru	3,500,000	697,640	Lima.
Switzerland	3,315,443	15,976	Berne.
Bolivia	2,267,935	605,400	La Paz.
Greece	2,433,806	25,014	Athens.
Denmark	2,605,268	15,388	Copenhagen.
Denmark and Colonies	2,585,660	102,022	Copenhagen.
Iceland	78,470	39,756	Rejkjavik.
Greenland	11,893	46,740	Godthaab.
West Indies	30,527	138	.....
Venezuela	2,323,527	593,943	Caracas.
Servia	2,493,770	18,630	Belgrade.
Liberia	2,060,000	35,000	Monrovia.
Nepaul	4,000,000	54,000	Khatmandu.
Cuba	1,772,953	44,000	Havana.
Oman	1,500,000	82,000	Muscat.
Guatemala	1,842,134	48,290	N. Guatemala.
Ecuador	1,500,000	116,000	Quito.
Haiti	1,400,000	10,204	Port au Prince.
Salvador	1,006,848	7,225	San Salvador.
Uruguay	1,111,758	72,210	Montevideo.
Khiva	800,000	22,320	Khiva.
Paraguay	635,571	98,000	Asuncion.
Honduras	543,741	46,250	Tegucigalpa.
Nicaragua	420,000	49,200	Managua.
Dominican Republic	610,000	18,045	San Domingo.
Costa Rica	341,590	18,400	San Jose.
Panama	275,675	32,380	Panama.
Montenegro	228,000	3,630	Cettinje.

*These estimates of the population and area of the British Empire include the recently acquired possessions in Africa. For statistics in detail, see tabular page entitled "The British Empire." †Estimated for 1906 by the United States Comptroller of the Currency. Estimate, 85,271,093. ‡Estimated for January 1, 1907.

CIVIL LISTS OF EUROPEAN SOVEREIGNS.

Austria-Hungary, Emperor of, $4,833,300.

Bavaria, King of, $1,350,770.

Belgium, King of, $875,000.

Denmark, King of, $345,000; and Crown Prince, $28,800.

Great Britain and Ireland, the King and Queen receive $2,350,000 and the remainder of the royal family are allowed $590,000. The King also receives the revenues of the Duchy of Lancaster, $600,000 per annum, and the Prince of Wales those of the Duchy of Cornwall, about $300,000.

Greece, King of, $260,000.

Italy, King of, $3,200,000, of which $360,000 for family.

Netherlands, Queen of, $300,000; large revenue from domains; $62,500 for royal family, courts, and palaces.

Norway, King of, $163,500.

Portugal, King of, $600,000.

Prussia, King of, $3,923,824; as Emperor of Germany, $750,000 for "representation." Total annual income of William II. and relatives is nearly $6,000,000.

Roumania, King of, $201,482.

Russia, Czar of, had private estates of more than 1,000,000 square miles of cultivated land and forests, besides gold and other mines in Siberia. The annual income was estimated at about $12,000,000. In consequence of the unsettled condition of the empire this is much reduced at present.

Saxony, King of, $880,000.

Servia, King of, $204,000.

Spain, King of, $1,850,000, besides $600,000 for family.

Sweden, King of, about $400,000.

Turkey. The Sultan's income is $100,000.

Württemberg, King of, $504,000.

HEADS OF THE GOVERNMENTS OF THE WORLD.

JULY 1, 1910.

COUNTRY.	OFFICIAL HEAD.	TITLE.	BORN.	ACCEDED.
Abyssinia	Menelik II	Emperor	1842	March 12, 1889
Afghanistan	Habibulla Khan	Ameer	July 3, 1872	Oct. 3, 1901
Annam	Duy Tan	King	1899	Oct., 1907
Argentine Republic	José Figueroa Alcorta	President		March 12, 1906
Austria-Hungary	Franz Josef	Emperor	Aug. 18, 1830	Dec. 2, 1848
Baluchistan	Mir Mahmud	Khan		March, 1893
Belgium	Albert I.	King	April 8, 1875	Dec. 17, 1909
Bokhara	Sayid Abdul Ahad	Ameer	March 26, 1859	Nov. 12, 1885
Bolivia	Ismael Montes	President		Oct. 24, 1904
Brazil	Nilo Pecanha	President		June 14, 1909
Bulgaria	Ferdinand	Czar	Feb. 26, 1861	Aug. 11, 1887
Chile	Pedro Montt	President		Sept. 18, 1906
China	Pu-yi (Hsuantung)	Emperor	Feb. 11, 1906	Nov. 14, 1908
Colombia	Gonzalez Valencia	President		Jan. 1, 1908
Congo Free State	Albert I.	Sovereign	April 8, 1875	Dec. 17, 1909
Costa Rica	Dr. Ricardo Jiminez	President		April 5, 1910
Cuba	José Miguel Gomez	President	1853	Jan., 1909
Denmark	Frederik VIII.	King	June 3, 1843	Jan. 29, 1906
Dominican Republic	Ramon Caceres	President		Jan., 1906
Ecuador	Eloy Alfaro	President		Oct. 10, 1906
Egypt	Abbas Pasha	Khedive	July 14, 1874	Jan. 7, 1892
France	Armand Fallières	President	1841	Jan. 17, 1906
Germany	Wilhelm II.	Emperor / King	Jan. 27, 1859	June 15, 1888
Prussia	Wilhelm II.	Statthalter		Oct. 18, 1907
Alsace-Lorraine	Count v. Wedel	Duke	Aug. 19, 1856	Jan. 24, 1904
Anhalt	Friedrich II.	Grand Duke	July 9, 1857	Sept. 28, 1907
Baden	Friedrich II.	King	April 27, 1848	June 13, 1886
Bavaria	Otto Wilhelm Luitpold	Regent		May 28, 1907
Brunswick	Johann Albrecht	Grand Duke	Nov. 25, 1868	March 13, 1892
Hesse	Ernst Ludwig V.	Prince	May 30, 1871	Oct. 25, 1905
Lippe	Count Leopold IV.	Grand Duke	April 9, 1882	April 10, 1897
Mecklenburg-Schwerin	Friedrich Franz IV.	Grand Duke	July 22, 1848	May 30, 1904
Mecklenburg-Strelitz	Adolf Friedrich	Grand Duke	Nov. 16, 1852	June 13, 1900
Oldenburg	Friedrich August	Prince	March 20, 1878	April 19, 1902
Reuss, Elder Branch	Heinrich XXIV.	Prince	May 28, 1832	July 11, 1867
Reuss, Younger Branch	Heinrich XIV.	Duke	Aug. 31, 1871	Feb. 7, 1908
Saxe-Altenburg	Ernst	Duke	July 19, 1884	July 30, 1900
Saxe-Coburg and Gotha	Charles Edward	Duke	April 2, 1826	Sept. 20, 1866
Saxe-Meiningen	Georg II.	Grand Duke	June 10, 1876	Jan. 5, 1901
Saxe-Weimar	Wilhelm Ernst	King	May 25, 1865	Oct. 15, 1904
Saxony	Friedrich August III.	Prince	Oct. 10, 1846	May 8, 1893
Schaumburg-Lippe	Georg	Prince	Aug. 21, 1852	Jan. 19, 1890
Schwarzburg-Rudolstadt	Günther	Prince	Aug. 7, 1830	July 17, 1880
Schwarzburg-Sondershausen	Karl Günther	Prince	Jan. 20, 1865	May 12, 1893
Waldeck-Pyrmont	Friedrich	King	Feb. 25, 1848	Oct. 6, 1891
Württemberg	Wilhelm II.	King	June 3, 1865	May 6, 1910
Great Britain and Ireland	George V.	King	Dec. 24, 1845	June 27, 1863
Greece	Georgios I.	President	Dec. 24, 1856	Sept. 25, 1898
Guatemala	Manuel Estrada Cabrera	President		Dec. 17, 1908
Haiti	Antoine Simon	President		April 18, 1907
Honduras	Miguel R. Davila	Emperor	June 3, 1865	May 6, 1910
India, Empire of	George	King	Nov. 11, 1869	July 29, 1900
Italy	Victor Emmanuel III.	Mikado	Nov. 3, 1852	Feb. 13, 1867
Japan	Mutsuhito	Khan	1845	1865
Khiva	Seyid Mahomed Rahim	Emperor	March 25, 1874	July 20, 1907
Korea	Yi-Chŏk	President	1854	Jan., 1904
Liberia	Arthur Barclay	Grand Duke	April 22, 1852	Nov. 19, 1905
Luxemburg	Wilhelm	President	Sept. 30, 1880	1876, 1884
Mexico	General Porfirio Diaz	Prince	Nov. 13, 1848	Sept. 10, 1889
Monaco	Albert	Prince	Oct. 7, 1841	Aug. 14, 1860
Montenegro	Nicholas I.	Sultan	1873	Aug. 25, 1907
Morocco	Mulai-Abd-el-Hafid	Maharaja	Aug. 8, 1875	May 17, 1881
Nepal	SurendraBikramShamsherJang	Queen	Aug. 31, 1880	Sept. 6, 1898
Netherlands	Wilhelmina	President		Dec. 21, 1909
Nicaragua	Dr. José Madriz	King	Aug. 3, 1872	Nov. 18, 1905
Norway	Haakon VII.	Sultan		June 4, 1888
Oman	Seyyid Feysal bin Turkee	President		March 1, 1910
Panama	Dr. C. A. Mendoza	President		1908
Paraguay	E. Gonzalez Navero	Shah	1897	July, 1909
Persia	Ahmed Mirza	President		Sept. 24, 1908
Peru	A. B. Leguia	King	Nov. 15, 1889	Feb. 1, 1908
Portugal	Manoel II.	Supreme Pontiff	June 2, 1835	Aug. 9, 1903
Rome (See and Church of)	Pius X. (Giuseppe Sarto)	King	April 20, 1839	March 26, 1881
Roumania	Carol I.	Emperor	May 18, 1868	Nov. 1, 1894
Russia	Nicholas II.	President		Jan. 1, 1907
Salvador	Fernando Figueroa	King	July 10, 1844	June 23, 1903
Servia	Peter (Karageorgevitch) I.	King	Sept. 21, 1853	Oct. 1, 1868
Siam	Chulalongkorn I.	King	May 17, 1886	May 17, 1886
Spain	Alfonso XIII.	King	June 16, 1858	Dec. 8, 1907
Sweden	Gustaf V.	President		Jan. 1, 1910
Switzerland	Robert Comtesse	Bey	1855	May 12, 1906
Tunis	Sidi Mohamed en Nasir	Sultan	Nov. 3, 1844	April 27, 1909
Turkey	Mohammed V.	President	Sept. 15, 1857	March 1, 1909
United States of America	William Howard Taft	President		March 1, 1907
Uruguay	Claudio Williman	President		Dec., 1908
Venezuela	Juan Vicente Gomez	Seyyid	June 7, 1885	July 18, 1902
Zanzibar	Ali bin Hamoud			

BOOK IV.

LAW.

LAW.
From a Mosaic in the House Reading Room, Congressional Library, Washington.
BY FREDERICK DIELMAN.

HISTORY OF THE DEVELOPMENT OF LAW. MOSAIC LAW. ORIENTAL LAW. CODES OF LYCURGUS, SOLON, DRACO, AND OTHER GREEKS. ROMAN LAW, JUSTINIAN PANDECTS AND INSTITUTES. TRIAL BY ORDEAL, TORTURE, COMBAT, AND JURY. INTERNATIONAL LAW. CONSTITUTIONAL LAW. CRIMINAL LAW. COMMERCIAL LAW. EXEMPTION LAWS. PROPERTY RIGHTS OF MARRIED WOMEN. DICTIONARY OF EMINENT JURISTS.

THE DEVELOPMENT OF LAW.

Early Laws.—Early laws are the outgrowth of social customs or habits. It is very difficult to distinguish clearly between early religion, morals, and law. In the earliest times each man was a law unto himself, and he punished offenses against himself and righted his own wrongs according to his own strength. Vengeance is sanctioned by early laws, and redress and justice are left to a man or his kin. Not only Mosaic but early Anglo-Saxon codes are specific in stating exactly what degree of vengeance each offense deserves according to a list. This action cannot in any sense be regarded as legal; it is only moral. But it is the germ from which law as applying to right and justice was evolved. Just as soon as the community assumes the responsibility of righting the wrongs of others, then the punishment begins to take on a legal rather than a religious or moral aspect. Where the right to be enforced was clear, and where the violation of it was beyond doubt as to both the fact and the agent, early legal codes were ample and explicit. But there was no provision for settling controversies or disputes in the earliest times. The need of this, and the means of doing it, was the evolution or the institution of the court.

Mosaic Law.—This is at once the fullest and, presumably, the most familiar of the codes of ancient times. In the Book of Leviticus are two codes: the Law of Holiness and the Priestly Code. The Law of Holiness was compiled during the Exile and nearly conforms to the Priestly Code, which was presented to the Jewish community at Jerusalem through Ezra and Nehemiah and finally adopted as a binding law in 444 B. C. These codes are both religious and moral. The hygienic and sanitary obligations imposed upon the people have been shown to be of the very nature that the existing conditions most demanded, and are abundant proof of the wise administration by which they were issued.

Babylonian Law.—This great commercial nation developed highly complex laws. The code of Hammurabbi (2000 B. C.) contained 280 edicts. Forms of deeds, mortgages, leases, contracts of sale and partnership, together with records of loans and interest, have been preserved. The earliest known will is that of Sennacherib (700 B. C.).

Medes and Persians.—The codes of these early peoples have become proverbial for their severity and especially for their immutability. "The law of the Medes and Persians which changeth not" carries with it an idea of a law of

unusual severity and an impartial and certain dispensation of punishment. The people are known to have been cruel and merciless as is recorded in Isaiah xiii., and this spirit, most probably aggravated by their ambitious struggle against repression by the Assyrians, was manifested in their code of laws.

India.—The law of India, originally indistinguishable from religion, was derived primarily from the Vedas (*c.* 1000 B. C.), supplemented by the Dharmasmriti, or traditions in rhythmical form, including the Mahabharata (*c.* 100) and by innumerable commentaries or handbooks, the most noted being the Manava Dharmasastra, or laws of Manu (about 200), all of which were rules of life rather than authoritative codes.

Lycurgus.—Whether or not Lycurgus was legendary, it remains true that the laws of Sparta brought about her military supremacy. The law was practically military discipline. The child was inured to hardship, taught gymnastics and military drill. Specific punishment was laid down for each offense, and justice was administered impartially and inflexibly.

Draco.—In the seventh century B. C., Draco compiled a code of laws for the government of Athens. So severe were the penalties attaching to crime, that it was said that the code was written in blood.

Solon.—What Lycurgus did for Sparta, Solon effected for Athens. Archon in 594 B. C., he compiled a code of laws, based upon his Eastern experience, which, by their wise and just provisions, served as models for other nations.

Roman Law.—Romans defined three kinds of law: *jus civile*, the law which governed citizens; *jus gentium*, the law of nations; and *jus naturale*, the law of nature. The earliest versions of Roman civil law were essentially religious until 500 B. C. at least. It would seem that there were some laws in which the plebeians did not share. The laws were at first dispensed by patricians. The frequent complaints of injustice and partiality which the plebeians made, led (about 451 or 450 B. C.) to the formulation of the Twelve Tables. By them the law was the same for both classes except in the matter of marriage, which difference disappeared in 445 B. C. This Law of the Twelve Tables was to the Roman people a charter of liberties, and they were loath to change or amend its laws. The priests alone interpreted the law until 252 B. C., when the office of pontifex maximus was opened to a plebeian. Roman civil law was not applicable to allies or conquered peoples unless expressly provided by treaty. For them special laws grew up out of decrees by rulers and senate between 250 and 150 B. C.

Roman citizenship was gradually extended throughout all Italy until Caracalla in the third century made all free inhabitants of the empire Roman citizens. In this way Roman civil law became the law of the whole empire. Papinian, Paul, and Ulpian were prominent jurists during this period.

Among the many attempts at codification of Roman laws the most important are:—

1. *The Codex Gregorianus*, 295.
2. *The Codex Hermogenianus*, early in the fourth century.
3. *The Codex Theodosianus*, published under the direction of Emperor Theodosius II. of the Byzantine Empire, in 438.
4. *The Codex Justinianus*, by Emperor Justinian, consisting of:—
   (*a*) *The Institutes* (of November, 533), based on the Institutes of Gaius.
   (*b*) *The Digest* or *Pandects* (of December, 533), composed of excerpts from the law literature from 100 B. C. to 300.
   (*c*) *The Codex* (between April, 529, and December, 534).

These were written in Latin, to which some new (*novellae*) constitutions were added in Greek. These law books persisted until the tenth century, when they were condensed into a Greek code called the *Basilica*. This latter lasted until the capture of Constantinople by the Turks in 1453.

Roman Law with Teutonic Modifications.—In the Middle Ages those Teutonic governments erected upon the ruins of the western Roman Empire were governed by Roman law, of which several compilations were made. Among these were:—

1. *Lex Romana Visigothorum*, or the "Breviary of Alaric" (506), issued at Aire in Gascony by authority of Alaric II. This was the chief authority in western Europe until the eleventh century.
2. *The Leges Barbarorum*, a name given to compilations to govern other nations, including:—
   (*a*) *The Lex Antiqua of the Visigoths*, fifth century.
   (*b*) *The Lex Gundobada of the Burgundians*, fifth century.
   (*c*) *The Lex Salica of the Franks*, fifth century.
   (*d*) *The Law of the Riparian Franks*, sixth century.
   (*e*) *The Law of the Longobards*, seventh century.

Local laws gradually superseded these *leges barbarorum*. Special systems of law gradually grew out of the changes which occurred within the nations, especially from the development of municipalities. For a time the works of Justinian lost something of their eminence. Later, in the tenth and eleventh centuries, they were used in the colleges and universities, and were soon restored to the position of the leading authority on jurisprudence.

Trial by Ordeal.—As a religious ceremony, ordeal was a common means of proving the guilt or innocence of suspected persons from the most ancient times. Prior to the introduction of Christianity among the peoples of northern Europe, ordeal was practised among the Celts of Ireland, the Germans, and the Slavs. Trial in the ordinary sense was unknown among these peoples in the Middle Ages. The accused submitted to tests by boiling water, from which he took objects by plunging in his bare hand; by fire, into which he thrust his hand; by red-hot iron, either by carrying an iron rod from three to nine paces or walking upon red-hot plowshares, sometimes by walking blindfolded among 6, 9, or 12 of these; by cold water, in which the innocent sank and the guilty floated; by the cross, where both accused and accuser held uplifted hand before the cross, the decision

being given in favor of the one who endured the test for the longer time. Among the Anglo-Saxons the eating of a piece of bread or cheese by the accused was regarded as an infallible test of innocence. After religious exercises a piece of bread or cheese was given to him and if he was able to swallow it this power was regarded as a proof of his innocence. The ordeal of the bier required the suspected murderer to touch the body of the murdered person, and in cases of guilt it was expected that blood would flow from the wounds. Religious ceremonials were forbidden to be practised at trials by ordeal in 1215, and by the end of the thirteenth century its practice had nearly ceased.

Trial by Torture.—Apart from its use as a means of punishment or of revenge, torture, or the infliction of severe bodily pain, has had its uses in the past to extort confession or evidence. In the Middle Ages it was made use of in Europe as a means of securing evidence in cases of suspected heresy, and it was not until 1816 that its use was forbidden by Papal bull. The rack, scourge, fire, hooks, boots, pincers, and manacles are a few of the ingenious contrivances employed by different peoples and at different times in the administration of torture. As an instrument of torture the rack was introduced into England by the Duke of Exeter, and popularly known as "the Duke of Exeter's Daughter." When practised by the more enlightened nations, its use has been deplored as a necessary evil. At the same time, writers are found who have condemned its use not only on humanitarian grounds but by reason of its unreliability in discovering the truth, for very often innocent persons either from weakness or exhaustion pleaded guilty or accused others wrongfully to escape its pains. The last recorded use of torture in England was during the reign of Charles I. (1640). Its use was abolished by Prussia, Saxony, Austria, and Switzerland before 1750. Russia finally abolished it in 1801. It was practised in France as late as 1814 under the Bourbons; in Württemberg (1806), Bavaria (1807), Hanover (1822), and Baden (1831).

Trial by Combat.—This mode of determining the right or of proving innocence was much in vogue in feudal times. It flourished during the age of chivalry and was an essential feature of knighthood. The Norman kings firmly established the practice throughout England and gave it a regular place in the judicial procedure. A most elaborate code of regulations prescribed the details. In its earliest stages the appeal to this form of trial was permitted in a great variety of cases, but it was soon limited to the decision of cases of felony in criminal law and to disputes regarding the title to lands. In cases of women, infirm persons, or children, a champion might be chosen or any knight might offer his services to protest by single combat against the accusation. Victory was supposed to decide the question of innocence. The modern system of dueling was in many respects a survival of the trial by combat. Its decline was very largely due to the proved and acknowledged superiority of methods in the ordinary courts of law and it was gradually superseded by trial by jury. As an appeal in cases of felony, the last known case of trial by battle occurred in England as late as 1818 in the case of Ashford *v.* Thornton. The practice was forbidden in England by an act passed in 1819. This method of trial was never practised in the United States.

Trial by Jury.—A form of trial in which a body of laymen act as the judges of the truth of facts in dispute at a trial or an action at common law. Its origin is obscure, but it is known that it was customary in the reign of Henry II. (1154-1189). In these earlier times the jurymen were not only judges, but very often witnesses as well. The sheriff acting under a writ known as venire facias, summons citizens residing in the county to attend a term of court for the purpose of acting as jurors. The group of men so summoned are known as talesmen, and from them are chosen a sufficient number to compose a jury. In the process of choice both sides have the privilege of challenging the fitness of any of these to serve as jurymen, after examination into such fitness. The jury is then sworn and the trial begun. All evidence must be given in the hearing of the jurymen, after which the respective lawyers address the jury and sum up the evidence. The judge then makes a review of the case for the instruction and benefit of the jury, and this review is known as the charge. The jury then retires from the court room and is locked in a room until a verdict has been arrived at, or until there is sufficient reason to believe that a unanimous verdict cannot be reached. In the latter case a new trial may be had. It is necessary for all of the jurors to agree upon a verdict, and in a criminal trial this verdict is either guilty or not guilty, and in a civil action either for the plaintiff or for the defendant. The qualifications for jury service vary in the several jurisdictions, but, speaking generally, all persons between the ages of 21 and 60 are liable to be called upon unless they are exempted or disqualified by insanity, conviction of some crime, or by sex, for women are generally not eligible. After the jury is sworn, its members are then entitled to compensation for their services. A special, or struck, jury is selected with a special regard to the intelligence and education of its members to try difficult or complicated cases. In some courts, as in probate, surrogate, and in special cases of equity, questions of fact are decided by the judges and no jury is employed. Especially is this true when the questions involved are those of law and not of fact. In practice, the absence of a single juror suspends the trial until his return, and in cases of death or withdrawal of a single juror at any stage of the trial before a verdict is reached the trial is terminated immediately and proceedings must be begun anew and a new jury selected. The grand jury consists of not more than 23 nor fewer than 12 members, who are good and sufficient men chosen by order of the sheriff to attend court to consider the various indictments or bills which are laid before them, and it is their duty to inquire into each case to ascertain whether or not there is sufficient ground to require a trial. When they find sufficient evidence to warrant a trial they are said to return a true bill. They have the further power of making suggestions to the court for the application of any remedial action to any condition of affairs existing within the jurisdiction as may seem to them advisable.

INTERNATIONAL LAW.

Rights, Powers, and Obligations of States.—The essential rights of a state are (1) sovereignty, (2) independence, and (3) equality. These bear upon one another and are, perhaps, only different phases of sovereignty. (1) Sovereignty implies the exclusive, uncontrolled exercise of powers within the state, whether of making treaties with other states or of governing itself. It is the great essential of existence, for without it the community would not be a state. The sovereignty of the United States dated from July 4, 1776, and not from 1782, when the English treaty recognized its independence. (2) Independence denies the right of any other state to interfere with the sovereignty of a state. (3) Equality is the right of a state to have all of the rights which other states enjoy; and is in no way dependent upon relative size or power.

Where a state is made up of a number of united states the central government is responsible for the acts of the individual units, over whose acts it may not have any control.

No state can render assistance to the colonies or provinces in revolt against the parent state.

The rule of non-interference in the affairs of another state is to be observed except in unusual cases. The interference of the United States in Cuban affairs against Spain was based upon self-protection of commerce and individual rights and upon the laws of humanity. France interfered with affairs in Mexico in 1861 and 1863 ostensibly to protect the rights and property of French citizens in Mexico, but really to check the growth of the United States and to increase French prestige.

The balance of power is really the recognition by international law of the right of interference as a means of protection of contiguous nations, one against the encroachments of another.

The Monroe Doctrine promulgated by President Monroe in his message in 1823 was aimed at the absolutists of Spain, who wished to bring back the Latin countries of America into subjection to the mother country; and it opposed any foreign interference which meditated the changing of the constitution or altering the form of government of an American state and also any interference by force. Since that time many absurd constructions have been put upon the original views. It was quite in harmony with this doctrine for the United States, as soon as her hands were freed in the Civil War, to march her troops to the frontiers of Mexico and to cause the withdrawal of the French and the collapse of the government of Maximilian there in 1866. But it was absurd for Congress to attempt to invoke the principle against the French company which had secured the right or concession to dig the canal across the Isthmus of Panama. There is nothing intended in the principle which will cause the United States to police the continent of America or to become a party in the wars of any little Latin republic which may choose to solicit its aid.

Equality involves national etiquette and is very elaborately observed in some of the monarchies of Europe. The tendency is strongly setting towards equality of rank.

The precedence of ambassadors of equal rank is now decided by the length of residence. The question of whether the German or the English ambassador should take precedence at Washington would be decided by the greater length of residence or priority of appointment.

Property Rights of a State or the Acquisition of Territory.—A nation's right to territory or property is based upon (1) occupation of land that was vacant before and by public and uninterrupted prescription, or (2) from occupation by colonies or other incorporation of land previously occupied, or (3) by conquest generally accepted by other nations and so recognized, or (4) by purchase or gift.

Mere discovery is not enough to establish a claim to territory; there must be some occupation which is of benefit to the territory claimed. The United States based its claim to Oregon on Gray's discovery of the Columbia River in 1792, on Lewis and Clark's exploration in 1805 and 1806, on the settlement made at Astoria, and on contiguity to United States possessions, which then extended to the Rocky Mountains.

A nation has rights over (1) all land within its boundaries and over such rivers, lakes, inland seas, and other waters as lie wholly within its boundaries; (2) the mouths of rivers, bays, and estuaries providing access to the land; (3) the sea along its coasts to the distance of a marine league (three miles).

The high sea is open and free to all nations. All nations have equal rights to fish upon the high seas or upon banks and shoals in them. The Banks of Newfoundland are open to all nations to fish in; but the right to cure and dry fish upon the shores or to fish in bays or mouths of rivers is a private right of the nation owning them. Such waters are often called a *mare clausum*, or closed sea. Such are bays of the sea, such as Delaware Bay, which was declared in 1793 to belong to the United States alone. The Black Sea was made neutral by the treaty of Paris in 1853.

A river which forms the boundary between two nations is to be used equally by both nations and the dividing line is presumed to run through the middle of the river, unless other causes determine otherwise. Where the upper waters of a river belong to one nation and the lower courses to another, the former is considered as having only a moral right to use the lower courses. But this is generally arranged by treaty. The St. Lawrence, after forming the boundary between parts of the United States and Canada, flows wholly in its lower courses through British territory. Previous to the Reciprocity Treaty of 1854 Great Britain refused to acknowledge any right to its use by citizens of the United States. That treaty gave to the United States rights to its use equal to those enjoyed by British subjects; though these rights are subject to termination on notice. In exchange the United States gave British subjects equal rights to the use of Lake Michigan.

Right of Intercourse and Rights of Foreigners within a State.—Where a nation resorts to non-intercourse, it ceases to be protected by international law.

A nation which prevents another nation from commercial intercourse for the purpose of procuring actual necessaries not elsewhere obtainable commits an act of hostility towards that nation.

No nation can prevent another nation from

peaceably using its usual mode of communication with a third nation.

No nation can prevent a nation from intercourse with a third nation against the will of the latter.

Every nation is bound to truth and honesty in its intercourse with other nations.

No state can in time of peace exclude property accredited to subjects of a friendly state or expel them after admission without good reasons properly submitted to their home government. Shipwrecked, stranded, or other unfortunate visitors must be treated humanely and all their property rights observed.

Foreigners admitted into a country are subject to the laws of that country.

Each nation has the right to regulate the manner in which aliens may become naturalized. The following are the naturalization laws of the United States:—

The conditions under and the manner in which an alien may be admitted to become a citizen of the United States are prescribed by Section 2, 165-174 of the Revised Statutes of the United States.

Declaration of Intentions.—The alien must declare upon oath before a circuit or district court of the United States or a district or supreme court of the Territories, or a court of record of any of the States having common law jurisdiction and a seal and clerk, two years at least prior to his admission, that it is, *bona fide*, his intention to become a citizen of the United States, and to renounce forever all allegiance and fidelity to any foreign prince or State, and particularly to the one of which he may be at the time a citizen or subject.

Oath on Application for Admission.—He must at the time of his application to be admitted declare on oath, before some one of the courts above specified, "that he will support the Constitution of the United States, and that he absolutely and entirely renounces and abjures all allegiance and fidelity to every foreign prince, potentate, State, or sovereignty, and particularly by name, to the prince, potentate, State, or sovereignty of which he was before a citizen or subject," which proceedings must be recorded by the clerk of the court.

Conditions for Citizenship.—If it shall appear to the satisfaction of the court to which the alien has applied that he has made a declaration to become a citizen two years before applying for final papers, and has resided continuously within the United States for at least five years, and within the State or Territory where such court is at the time held one year at least; and that during that time "he has behaved as a man of good moral character, attached to the principles of the Constitution of the United States, and well disposed to the good order and happiness of the same," he will be admitted to citizenship.

Titles of Nobility.—If the applicant has borne any hereditary title or order of nobility he must make an express renunciation of the same at the time of his application.

Soldiers.—Any alien at the age of twenty-one years and upward who has been in the armies of the United States, and has been honorably discharged therefrom, may become a citizen on his petition, without any previous declaration of intention, provided that he has resided in the United States at least one year previous to his application, and is of good moral character. (It is judicially decided that residence of one year in a particular State is not requisite.)

Minors.—Any alien under the age of twenty-one years who has resided in the United States three years next preceding his arriving at that age, and who has continued to reside therein to the time he may make application to be admitted a citizen thereof, may, after he arrives at the age of twenty-one years, and after he has resided five years within the United States, including the three years of his minority, be admitted a citizen; but he must make a declaration on oath and prove to the satisfaction of the court that for two years next preceding it has been his *bona fide* intention to become a citizen.

Children of Naturalized Citizens.—The children of persons who have been duly naturalized, being under the age of twenty-one years at the time of the naturalization of their parents, shall, if dwelling in the United States, be considered as citizens thereof.

Citizens' Children Who Are Born Abroad.—The children of persons who now are or have been citizens of the United States, are, though born out of the limits and jurisdiction of the United States, considered as citizens thereof.

Chinese.—The naturalization of Chinamen is expressly prohibited by Section 14, Chapter 126, Laws of 1882.

Protection Abroad to Naturalized Citizens.—Section 2,000 of the Revised Statutes of the United States declares that "all naturalized citizens of the United States while in foreign countries are entitled to and shall receive from this Government the same protection of persons and property which is accorded to native-born citizens."

The Right of Suffrage.—The right to vote comes from the State, and is a State gift. Naturalization is a Federal right and is a gift of the Union, not of any one State. In nearly one half of the Union aliens (who have declared intentions) vote and have the right to vote equally with naturalized or native-born citizens. In the other half only actual citizens may vote. (See Table of Qualifications for Voting in each State, on another page.) The Federal naturalization laws apply to the whole Union alike, and provide that no alien may be naturalized until after five years' residence. Even after five years' residence and due naturalization he is not entitled to vote unless the laws of the State confer the privilege upon him, and he may vote in several States six months after landing, if he has declared his intention, under the United States law, to become a citizen.

Almost all nations refuse to punish their subjects for foreign crimes against foreign states or their subjects.

The right of asylum or of shelter of criminals seeking refuge in foreign countries is becoming more and more limited. It is usually met by an agreement or treaty of extradition. The United States has extradition treaties with nearly all nations. When extradition of a refugee criminal is asked by another nation, certain judges may issue a warrant for his arrest, try

him to see that the crime charged comes within the scope of the treaty, and to see that there is some evidence of his guilt. If satisfied the criminal is handed over to the executive. The President, through the Secretary of State, shall then surrender him within two months to the officer or agent of the nation claiming him. If not so surrendered he is liberated. The crimes usually covered by extradition treaties are murder, forgery, assault with intent to kill, piracy, arson, and robbery.

Comity or the Courtesies of Nations.—Polite treatment of a sovereign or his ministers in a foreign country, courtesy in diplomatic correspondence, observance of court etiquette, and respect on the sea towards the flag of a foreign nation are expected of states. Nations are not compelled to adopt or to conform to formal courtesies; but when they have once been adopted or practised by a nation towards other nations, similar and equal courtesies are expected by nations of equal rank.

Ambassadors and Consuls, Agents of the Intercourse of Nations.—One nation is not bound to be represented by an ambassador at the court of another, but, if diplomatic relations have once existed, it is a breach of friendship to discontinue them, and this discontinuance precedes a declaration of war.

A nation is not forced to receive an ambassador from another nation, if there is good reason for a refusal, such as the uncertainty of the sovereignty of the state he represents in times of civil war; or if the person of the ambassador is obnoxious, or if he is of notoriously bad character.

When an ambassador is sent abroad he is furnished with credentials which specify the degree of power with which he is invested and a list of the subjects upon which he is entitled or empowered to treat. Until such credentials have been presented at the court to which he is sent and are received by that court, he is not recognized officially. The first duty, then, of an ambassador at a foreign court is to present his credentials and establish his status.

An ambassador enjoys very great privileges of exemption from laws and immunity while in a foreign country in his official capacity. This is to secure the fullest freedom to act at all times in the interests of his country. These privileges exist even in case of a declaration of war against his country until he has time to leave the country after the declaration. He is then entitled to liberty of exit. Should he remain longer than is necessary after such dismissal or declaration of war, his status then becomes that of an ordinary traveler.

No private or public person may use force or violence against the person of an ambassador; and the state is bound to afford him, his property, household, and servants full protection.

An ambassador cannot be arrested or imprisoned for any offense, civil or criminal. Any punishment or civil redress must come through the ambassador's sovereign.

The papers of an ambassador relating to his official business are in all cases inviolate.

An ambassador is not usually subject to taxes or to customs duties on goods imported for his own use.

An ambassador may be recalled, sent home, or declare his mission terminated for good reason. It is his duty to call upon the chief executive of the country, present his letter of recall, and ceremoniously take his leave.

The commercial agents of a country residing abroad are called consuls, and include consuls general, consuls, vice-consuls, and consular agents.

A consul's duties mainly consist in expediting matters of commercial importance and of representing his country in all such transactions. Diplomatic powers may or may not attach to his office.

Consuls enjoy no such immunities as are accorded to ambassadors. They are amenable to the laws of the country in which they reside just as are other foreigners.

Treaties.—Treaties, conventions, or contracts may be made by a nation with an individual, body of individuals, or with other nations.

Only properly constituted authorities or persons deputed by them can make treaties.

No treaty can be made which will in any way override the constitution; nor to bind a nation to do anything that flagrantly sacrifices the interests of the nation; nor to bind the nation to do anything which is morally wrong.

Treaties made through false representations or by force are not binding.

Defensive treaties are made to secure the parties mutually against encroachments by other nations.

Treaties of neutrality are mutual obligations binding the parties to take no part in conflicts between other powers.

Offensive and defensive alliances bind the parties to aid one another in all cases of conflict of either of the parties against other powers.

If a treaty has been made and signed by representatives having full powers, the treaty becomes binding at the time of signature. In such cases the ratification by the respective governments becomes retroactive.

It may be specified that the treaty shall become binding only upon ratification by the respective governments. In such cases the states are bound only from the date of ratification. The constitution of the United States requires that all treaties must be ratified by the consent of two thirds of the Senate before it becomes valid. The right of changing terms of conditions is also claimed by the Senate; and such changes are not to be regarded as violations of the treaty.

Where a treaty is flagrantly and repeatedly broken by one party, the other party may regard it as broken and either claim redress or demand its observance.

In interpreting a treaty the common usage of words is to be followed unless it involves an absurdity. If two meanings are possible, that one is chosen which confers the least benefit or advantage to the party who caused or demanded the insertion of the clause. That party is penalized for not making his meaning perfectly clear. Obscure passages may often be explained or cleared up by a consideration of other parts or passages of the treaty. In such cases causes of insertion and reasons for the act are to be considered. Clauses involving hard conditions or cruelty to one of the parties are to be considered strictly so as to minimize the hard conditions; while those which favor justice, equity, and hu-

manity are to be interpreted broadly so as to confer the fullest benefits.

War.—The causes of a just war are (1) the defense of any right which the state is bound to protect; (2) the redress of a wrong; (3) the prevention of an apprehended injury; (4) the protection of individual inhabitants; (5) to avenge insults to national reputation, to the flag, to an ambassador, or to its good name; (5) to enforce terms of a treaty or contract; and (6) to punish great wrongs against religion or liberty.

Rights of a nation are often enforced by acts short of actual war, such as embargo, which detains foreign vessels in port; or reprisal, which consists in seizing from a nation an equivalent of what it has taken, in the failure to get back the actual things taken, and corresponds to levying by force upon property to an equal amount of a debt or damage. Other means are the pacific blockade and a demonstration of force.

A declaration is not now insisted upon by international law, nor is it always practised by nations. This does not arise from a desire to take advantage of the unpreparedness of another nation, but is caused by the superior means of communication and publicity which the age affords. No one can plead ignorance of the prospect of war, which nearly always is preceded by a long chain of portentous events and communications. It is, however, advisable to give notice that a state of war exists, to enable neutrals, foreigners within the nation, and others to act in accordance with the laws governing such cases.

Weapons Forbidden in War.— The use of poisoned weapons, the poisoning of springs of water, use of hired assassins, a copper bullet poisoning the wound, explosive and dumdum bullets, detachable lance heads, barbed bayonets, and similar devices which entail needless suffering are forbidden in war.

Rules of War.—Private persons taking no part in the war are to be unmolested; but those participating are not afforded protection. The property of non-participants is to be uninjured. Contributions and requisitions are permissible. The commander of any detached force may require from the people supplies of food, shelter, and means of transportation, for which receipts are given. But pillage and devastation are neither justifiable nor politic. Spies in disguise may be punished by death; but those in their own uniform are to be treated as ordinary prisoners of war.

Humanity in Warfare.—In addition to the prohibition of weapons which entail needless suffering, much has been done to alleviate the suffering which the use of modern death-dealing agencies have caused. The Convention of Geneva in 1864, and again in 1868, introduced the Red Cross movement. Those engaged in hospitals, ambulances, and similar work were distinguished by wearing a badge of a red cross on a white ground. Another conference at Brussels in 1874 at the call of the czar of Russia, the Oxford Code of 1880, and the several meetings at The Hague in recent years have sought to bring about a more humane treatment of sufferers in war.

CONSTITUTIONAL LAW.

Constitutional law is that which refers to the constitution as a permanent system of government as distinguished from statutory and common law, which relates to matters subordinate to the constitution. It consists of rules and laws relating to the sovereign body, that is, how that body is composed, what are the mutual relations of its constituents, and how the various functions of legislation, judicature, and administration are performed. These rules may or may not take the form of absolute laws; for example, the constitutional rule that the British king and Parliament constitute the sovereign cannot be strictly called a law. It is also a rule that the king shall not withhold his assent to a measure which has passed both Houses of Parliament; this neither can be termed a law. At the most the royal veto would in such a case be unconstitutional, but not illegal.

Constitutionalism implies a representative or popular form of government, and as such is of comparatively modern growth. One of the fundamental parts of a complete constitution is the organization of the state so that the "amending power" is duly provided for. Where the constitution is a written one, like that of the United States, the line of demarcation between constitutional law and ordinary statute law is clearly defined; but in England, which has in the main an unwritten constitution, it is not so easy to determine of what constitutional law consists, seeing that the enacting authority in both cases is identical. Its principles must be chiefly gathered from parliamentary statutes, customs, and precedents. Generally speaking, the sovereignty inherent in the constitution, the accepted principles of liberty, the construction of the government, and the question and character of popular representation, are essentially subjects of constitutional law. In England such questions are perforce dealt with by Parliament the same as any ordinary law. In a constitutional crisis the House of Commons appoints a committee to "search its journals for precedents." The unwritten constitution of Great Britain is mobile, adaptative, and constantly undergoing change. This is in contrast with the fixed constitution of the United States, written out in one authoritative code.

The constitution of the United States, which was ratified by each state separately, clearly defines the relationship between the central and the local government, so that neither can destroy nor modify the other. It is worthy of record that the first written American constitution (the "Articles of Confederation," of November, 1777) was defective in that it made no provision for the continuing organization of the state. It created only a central government, which could not legally assume sovereign power. In other words the sovereign, the state, had no legal organization in the system. This defect was rectified in the convention which met at Philadelphia, in May, 1787, the change being brought about largely through the instrumentality and adroitness of Abraham Baldwin and Alexander Hamilton.

The legislative powers of the United States legislature are not to extend to particular kinds of bills, e. g., *ex post facto* bills; the President's

veto can only be overridden by a majority of two thirds in both houses; the constitution itself can only be changed in any particular by the consent of the legislature or conventions of three fourths of the several states; and lastly, the judges of the supreme court are to decide in all cases when the constitutionalism of any act of the legislature is in dispute. In the face of these provisions few changes are ever introduced; and in point of fact, only fifteen constitutional amendments have been passed since the framing of the constitution. The unwritten constitution of England has, on the other hand, changed much, particularly in curtailing the powers of the Crown and the Lords, and correspondingly increasing the power of the Commons through their nominees, the Ministry. The constitution of the United States more nearly approached the model of the British constitution at the end of the eighteenth century, and the president to-day has very much the same powers as the British sovereign of that period.

The bicameral system, which, in England, has made generally for good government by reason of its "checks and balances" is not an ideal form for a democratic legislature, although in practice its advantages far outweigh its drawbacks. In the American constitution, as Bagehot points out, "the Upper House has as much authority as the second; it could produce the maximum impediment, the deadlock, if it liked; if it does not do so it is owing, not to the goodness of the legal constitution, but to the discreetness of members of the chamber." In England the two Houses are far from having equal power, and in the end the will of the Commons must prevail.

In the United States, as in Switzerland and Germany, the constitution is in form an alliance among a number of independent states, and it is always a moot point how far the independence of each state has been sacrificed by submission to a federal constitution. In the United States constitutional progress is somewhat hampered by reason of every amendment requiring ratification by the separate vote of three fourths of the states. A distinguishing feature of the United States constitution is the categorical completeness with which it treats of civil liberty. In England and France, for example, the question of civil liberty is at all times at the mercy of the government. In the matter of organization and the details of administration we have much to learn from European constitutions; but as regards the position and true relations of liberty, imperfect though many of our conceptions be, the American system stands as a model for the constitutions of the Old World.

CRIMINAL LAW.

The criminal or penal law is that portion of the law which deals with crimes. Crimes have been described as offenses against the state and prosecuted by the state, in contradistinction to civil injuries, which are offenses against individuals and prosecuted by private persons. Strictly speaking, all illegal acts are offenses against the state. Torts or civil injuries are offenses for which the injured party may seek redress in the courts. A tort may also be a crime which is punishable both civilly and criminally.

The criminal law of England rests on a basis of common law, modified by judicial interpretation and by statute. In the United States the criminal law is largely based on the common law of England and that of the United States. Several of the states have recast and codified their criminal law. Each state has criminal jurisdiction for all ordinary crimes perpetrated within its borders and is independent of the jurisdiction of the federal courts. The crimes dealt with by the latter are treason, piracy, and other offenses against the laws of nations, crimes committed in the District of Columbia, in the territories, and other dependencies of the United States and on the high seas, and other criminal offenses specially defined by act of Congress, e. g., counterfeiting of securities or United States coin, fraudulent naturalization, and bankruptcy, and the like.

Crimes are divided into treasons, felonies, and misdemeanors. Treasons include offenses against the state, for example, resistance to the authority of the sovereign power; felonies and misdemeanors are not always easy to distinguish from each other, but, generally speaking, felonies are the more serious crimes, such as murder, homicide, arson, house-breaking, etc., while misdemeanors are minor crimes prosecuted civilly as in personal actions for injuries. Attempts to commit crimes are themselves crimes. It is laid down in Russell *On Crimes* (Vol. I. p. 189) that "an attempt to commit a felony is a misdemeanor, and an attempt to commit a misdemeanor is a misdemeanor, whether the offense be so by common law or by statute." Until 1861 under this ruling an attempt to commit murder was only a misdemeanor at common law in England punishable by two years' imprisonment; but now such an attempt is a felony and punishable accordingly. Persons accused of a crime may be either principals of the first or second degree, or accessories before or after the fact. Participation in the commission of a felonious act is in itself a felony.

In the United States criminal procedure follows generally the procedure of the common law. Misdemeanors are invariably dealt with by police magistrates. In cases of felony the accused is entitled to trial by jury, the latter being drawn from the state or district in which the crime was committed. An accused person is further protected by the amendment of the constitution, article V., which reads: "No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation." Article VIII. is likewise in the interest of the accused: "Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted."

COMMERCIAL LAW.

Speaking strictly there is no separate and distinct commercial law in the Anglo-American legal system as there is in countries whose legal systems are based upon the Civil Law, where there are codes of commerce and separate commercial tribunals. The origin of the distinct body of commercial law to be found in the countries of continental Europe and their colonies elsewhere was in the Law Merchant or custom of merchants, i. e., the usages of the mercantile class in the Middle Ages and the centuries immediately succeeding. In England this Law Merchant was incorporated into the general law in the eighteenth century and became part of the common law governing particular transactions. As such, it was adopted in the United States. The subjects usually dealt with in the Commercial Codes of European and Latin American countries are Mercantile Persons, i. e., persons whose transactions are within the Commercial and not the Civil Code, Partnerships and Companies, Agents, Factors, and Brokers, Commercial Paper, Loans and Pledges, Maritime Law, Carriers and Transportation, Warehousemen, Bankruptcy, Trademarks and Patents.

Contracts: Conception, Definition, and Classification.—One person may acquire rights against another because of some act of the latter or of both, intended to create such rights, or because of some act not so intended but which the law visits with liability and to which it attaches the consequence of creating such rights. Contracts belong to the first class. They belong to the class of what are called legal transactions or acts-in-the-law, that is, acts intended to produce legal consequences to which the law concedes the effect of creating the consequences intended. Such acts require:—

(1) That the parties doing them have legal capacity so to act,

(2) That they act freely, with knowledge of the facts and without being deceived,

(3) That they act with reference to some possible or permissible subject matter, and

(4) Usually that the act be expressed in or accompanied by some prescribed form. If the third or fourth requirements are not complied with, the acts have no legal effect and are said to be *void*. If the act is deficient with respect to the third requirement, the act is subject to be set aside by the person compelled or mistaken or deceived and is said to be *voidable*. If the defect is in the first requirement in some cases it is void (married women, except as changed by statute, and lunatics under guardianship) and in some (infants and lunatics not under guardianship) it is voidable. These general propositions apply also to contracts.

A Contract is a promise or agreement enforceable by law. The law does not enforce every promise a person may make nor every agreement a number of persons may enter into. Not only must the four requirements above noted be complied with, but the purpose must be to create a legal result. If the parties did not intend the promise or agreement to be legally binding—as, for example, if they intended a joke, or a banter, or an example for instruction, or if they were merely acting, there is no contract.

Classification of Contracts proceeds upon the fourth requirement above set forth, that is, the form in which the act is expressed or by which it is accompanied. If the form is that of a writing, sealed by the party or parties and delivered, there is a formal contract. In the case of *negotiable instruments* (see *infra*) the form is of some importance also, and they are quasi-formal contracts. Where the contract, whether written or oral, does not take on either of these forms, it is said to be a simple contract.

Contracts under Seal.—In legal parlance any instrument in writing to which the parties have set their seals is called a deed. Where such instruments contain promises, such promises are called, technically, covenants. If such an instrument acknowledges a debt or promises to pay money, it is called a bond. Contracts under seal are also called specialties. The requisites of such contracts are:—

(1) That they be in writing,

(2) That the party or parties seal them,

(3) That they be delivered—that is, that the person to be bound part with control, intending the instrument to take effect. In America it is also generally required that they be accepted by the party to whom the promise is made. Promises or agreements so made require no consideration. Originally a seal was an impression on wax or on the substance written on, made by the party or by some one in his presence and by his direction as his seal. But by legislation or judicial decision a wafer or scroll, or the word "seal," or the letters "L. S." now suffice where seals are in use. The distinction between contracts under seal and simple contracts is abolished in Alaska, Arizona, California, Idaho, Indiana, Iowa, Kentucky, Mississippi, Missouri, Montana, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Texas. In these states, except Nebraska, Nevada, Ohio, and Oklahoma, any contract in writing is presumed to have been made upon consideration, but the contrary may be shown and will invalidate it. In Alabama, Michigan, New Jersey, New York, Oregon, and Wisconsin, the presence of a seal, by statute, only creates a presumption of consideration—that is, the contract may be proved to be without consideration, but stands unless and until such proof is made.

Simple Contracts.—In simple contracts the form is of no consequence. The requisites are:—

(1) That the parties be agreed, or, in legal parlance, that there be a meeting of their minds, and (2) that there be consideration.

Offer and Acceptance.—It takes two or more parties to make a simple contract. The everyday saying that silence gives consent cannot be relied upon in this connection. Agreement is composed of two elements, *offer* and *acceptance*.

An offer is a proposal by the one party, called the offerer, that something be agreed to between them; an acceptance is an assent to or compliance with that proposal by the other party, called the offeree, with the intention and for the purpose of entering into the agreement proposed. An offer

(1) Must be communicated;

(2) Must be complete, so that it needs nothing but acceptance to make a complete contract;

(3) Must be intended seriously (except that if the person to whom it is made understands it seriously and a reasonable man in his place would have done so, there is a contract), and

(4) May be revoked (i. e., recalled) unless there is a collateral contract, with all the requisites of an independent contract, not to revoke it. It will remain open and capable of acceptance for the time fixed by its terms, unless revoked, and if no time is fixed, will remain open for a reasonable time. It may be so made as to be capable of several successive acceptances, in which case there is a new contract upon each acceptance; but after each the offerer may revoke it before there is any further acceptance. An offer comes to an end, so as not to be capable of acceptance thereafter, by lapse of the time fixed for acceptance, by lapse of a reasonable time if none is fixed, or by death of either offerer or offeree before acceptance. It also comes to an end by the making of a counter-offer or by rejection by the offeree, in which cases it is no longer open even though the time fixed for acceptance has not yet elapsed. But it may be renewed after lapse of the time fixed by acts or words of the offerer which amount to treating the offer as still in force.

Revocation of an offer must be communicated to the offeree before acceptance or it has no effect. But it need not be communicated by the offerer himself. Moreover, where the offer is made by advertisement, as in the case of offers of rewards, it may be revoked in the same way, provided the revocation is given the same publicity as was given to the offer.

Acceptance may be in the form of

(1) A promise, so that the contract consists of a promise on each side, the promise of the one being given in exchange for the promise of the other, or

(2) An act, so that the contract consists of a promise on one side and an act on the other, the promise being made in exchange for the doing of the act and the act being done in exchange for the promise. In the former case the contract is *bilateral;* in the latter it is *unilateral.* The acceptance must cover the whole offer and must coincide with it. If not, or if it changes the terms of the offer, there is no acceptance, but only a counter-offer. A mere inquiry, however, as to what the offer means or whether the offerer will make a different offer is not a counter-offer and will not put an end to the original offer. Also the promise or act claimed to constitute an acceptance must have been intended as such. Cross-offers in the same terms do not make a contract. The acceptance must refer to the actual offer made by the offerer, and not to something else understood by the offeree. Otherwise there is said to be no meeting of minds. But if a reasonable man could only understand the offer as made in one way, a person who accepts it on that understanding makes a contract even if the offerer did not so mean it. Likewise if the acceptance would be understood in one way only by a reasonable man, the offerer has a right to rely on it as having that meaning, and if he does so, there is a contract, though the offeree had another meaning. Where an offer is sent by telegraph and the message is incorrectly transmitted and accepted in the form in which it is received, the authorities are not agreed whether there is a contract.

Consideration.—All simple contracts require a consideration. The reason for this is in reality historical, so that consideration is as much a form as a seal. Except in case of formal contracts, Anglo-American law does not enforce a promise unless it is made upon a consideration. The consideration of a promise is the thing given or done in exchange for the promise, provided such thing is regarded legally as a detriment to the promisee or person to whom the promise is made. If a promise is given in exchange for another promise, there is a bilateral contract. If an act is done in exchange for a promise, there is a unilateral contract. As the consideration is something given or done in exchange for the promise, it follows that there must be, as lawyers put it, a present consideration; that is, there must be something which is regarded legally as a detriment to the promisee at the time of and in exchange for the promise. Something done or given or forborne in the past will not suffice. But if the prior act, done at the request of the promisor, was such as to give rise to a duty on the part of the promisor to pay the reasonable value of the service rendered him or benefit received by him, or if the prior act was something which it was the duty of the promisor to do and was done under such circumstances as to give rise to a duty of reimbursement for the service rendered (see *infra* QUASI-CONTRACTS), a subsequent promise to pay a fixed sum in liquidation of such liability is supported by a present consideration. Also, where a pre-existing obligation is voidable by the promisor, or he has a statutory defense which he may or may not interpose, such as a discharge in bankruptcy or the statute of limitations, a subsequent promise to pay is often said to be sustained by the past consideration of the pre-existing obligation. But it is more correct to say that the new promise operates as a waiver of the defense and enables the original obligation to be enforced.

If there is what is legally deemed a detriment to the promisee, the amount or the proportion it bears to the value of the promise is not material. Adequacy of consideration is not taken into account in this connection. But there must be a detriment. Hence a promise to pay a *greater* sum in consideration of payment of a liquidated *smaller* sum is unenforceable.

In a bilateral contract, each promise is consideration for the other. Hence if either is *void,* as against public policy or for incapacity of the promisor to make it or for any other reason, or is too indefinite to be enforceable, there is no consideration for the other. But a promise that is merely *voidable* is consideration for the other.

By "detriment" in this connection the law means simply the doing by promisee of something he is not bound to do. It is no matter that what he does is actually no harm to him pecuniarily or otherwise. His doing in exchange for the promise what he is not bound to do is held legally to be a detriment to him. He has exerted himself to do what he was under no obligation to do and so is to that extent worse off in exchange for the promise. Hence doing what is for the doer's benefit, if he is not bound to do it and does it at the instance of the promisor in exchange for the latter's promise, is a consideration. But doing what one is already bound to do is not a detriment and hence is not a consideration.

Part Payment of a Debt.—It follows from the conception of consideration that payment or promise to pay less than the whole amount of a *liquidated and undisputed* indebtedness is no consideration for release, discharge, extension, or promise to discharge, extend, or not to sue upon such indebtedness. This is the general and well-settled common-law rule. But it is subject to some qualifications and explanations. These may be stated conveniently as four propositions:—

1. Payment of part before maturity is consideration for discharge, extension, or promise to discharge or extend the remainder.

2. Giving or promising to give something other than money or doing something or promising to do something other than pay money in settlement or satisfaction or for an extension of a debt is a consideration, and in such case the pecuniary value of what is given or done or promised is of no consequence.

3. A payment of part or promise to pay part of a debt, made by a third person, not a party to the indebtedness, is consideration for discharge or extension of the remainder.

4. If the debtor binds himself to pay interest for a fixed period beyond maturity, so that he cannot tender the money owing during that time and require the creditor to accept it, there is consideration for an extension for that time.

Promises to do what one is bound to do.—It may be said, as a general proposition, that doing or promising to do what one is already bound to do by reason of contract with the other party or of contract with a third person or of some legal relation or official duty, is not a consideration. But in Alabama, Maryland, Massachusetts, New Jersey, and Vermont, the courts hold to the contrary where the thing done or promised was owing to the promisor already or to a third person by contract of the promisor. And where the general proposition is recognized, it must be noted that where there is a pre-existing contract duty on the part of the promisor to the promisee, the parties may by mutual agreement rescind, that is, put an end to, the contract and thus terminate the duty; and if they do, the doing or promising to do a part or all of what was due before is consideration for a new agreement.

Compromises.—Discontinuance of a pending action or dismissal of a suit in which person or property has been attached, or release of such person or property without discontinuance or dismissal, is consideration for a promise when the holding of the person or property under such attachment is lawful or it is a doubtful question whether such holding is lawful or not; but it is no consideration where the attaching party is clearly liable in damages for so holding or continuing to hold. In the latter case he only does his legal duty in releasing the person or property and his performance of that duty is nothing to give in exchange for a promise. But giving up a legal right is a consideration, and honest litigation of bona fide claims in the courts is a right. Hence settlement of or forbearance to sue upon a claim is consideration for a promise given in exchange therefor in case the promisee had a cause of action, that is, a right to recover in court upon his claim, or in case, although in fact or in law he did not have one, it was doubtful at the time of the compromise whether he had one or not or he believed in good faith and on reasonable grounds that he had one. If he had no cause of action and did not believe he had one, a compromise or forbearance to sue upon his claim is not a consideration.

Accord and Satisfaction.—"Accord," says Blackstone, "is a satisfaction agreed upon between the party injuring and the party injured, which, when performed, is a bar of all action upon this account." "Injury" here means cause of action—a right to sue and get relief in the courts—not a mere property or contract right uninfringed. If such a cause of action exists, the parties may agree on a satisfaction to be given and received, and when the thing agreed on as satisfaction is done, or, as the law books say, the accord is executed, it is a defense to the original claim. An unexecuted accord, that is, a promise to give or do something in satisfaction of a cause of action, is no defense unless the creditor or claimant agreed to take the promise in satisfaction of his claim. But if the accord is executed, i. e., the promise is performed, or the promise as such was taken in satisfaction of the claim, it is a defense to the original cause of action.

Subscriptions.—A subscription, in which a number of persons unite in agreeing to pay the sums set opposite their names for some purpose set forth in the paper, may be a mercantile or business subscription or a charitable subscription. In the former case it is fair to assume that a business transaction was intended and hence that acceptance of the subscription by the payees implies a promise on their part to use the money for the specified purpose in exchange for the promise to contribute it. This is consideration. But it is always wiser to put an express counter-promise of this sort in the paper itself. In the case of a charitable subscription, it is fair to assume that the parties intended a gratuity rather than a business transaction. Hence it is the more advisable to insert the express counter-promise or else, where seals are in use, to have the subscribers affix their seals. The prevailing view appears to be that the subscribers or any of them may revoke (withdraw from) the subscription until work has been done or liabilities have been incurred by the payee in reliance upon it, and that upon the beginning of work or incurring of liability on the faith of the subscription it becomes binding.

Assignment of Contracts.—Where the contract is unilateral, there is practically a debt due from the promisor to the promisee. Hence, an assignment in this case is like any other assignment of a right to recover in the court, or, as it is called in law, of a chose in action. (See *infra*, PERSONAL PROPERTY.) But an assignment may attempt to do more than this. It may purport to transfer not only the assignor's right to the benefit of performance by the promisor, but the right to control or direct such performance as well. In that case, as a general proposition, the promisor must agree to the assignment or the assignee cannot hold him to the performance. But assent to such an assignment is said to be implied from the nature of the contract where from its terms it is evident that there is no choice of persons involved and that the performance may take place between any two men with-

out material difference to those who take part. The rule is the same, and for the same reasons, where the assignment purports both to transfer the rights and to delegate the duties of the assignor under the contract. But if it tries to go further and to relieve the assignor from liability to the other party to the contract, it must be assented to by the latter, or it cannot have that effect.

Joint Contracts.—Contracts, with respect to the promisors, may be joint, or joint and several, or several. With respect to the promisees, they are either joint or else several. A promise is the joint promise of two or more where, for the purpose of the promise, they are to be taken as one; where it is the promise of all of them collectively, but not that of each individually. It is the several promise of each when each promises for himself, so that there is no collective promise, but only an individual promise of each promisor. It is joint and several where it is so made that, although expressed as one, it is really two; made up of (1) the collective promise of all and (2) the individual promises of each. Joint contracts must be enforced against all the promisors jointly. If less than the whole number are sued, that fact may be shown in abatement of the action. But legislation has greatly relaxed this rule in most jurisdictions. Moreover, if the claim is put in judgment against less than all, those who were not sued may show the judgment as a bar to any action against them on the promise, because there was but one promise and that one has already changed its form and become a judgment. Where two or more persons make the same promise at the same time or in the same instrument, *prima facie*, it is a joint promise. But if there are what are called "words of severance," the promise will be joint and several. By "words of severance" are meant any words indicating that the collective promise of all is also the individual promise of each, as "we jointly and severally promise," or "I promise" (when two or more execute the promise), or "I, we, or either of us." Where the promise is joint and several all the promisors may be sued jointly or each or any one separately; but not a number less than all jointly.

In case there is a judgment for or against any one promisor, it does not bar pursuit of the claim against the others, as in case of a joint contract; but there can only be one satisfaction. A release or discharge of one joint promisor or debtor releases all. But this is not so if the right to pursue the others is reserved in the release or discharge; and a contract not to sue one does not discharge the others, nor can the others use it as a defense. In case one of the joint promisors or joint debtors dies, the survivors may be sued, and at common law they alone were liable, and could only hold the estate of the deceased for its share by proceeding in equity. But statutes to-day allow the creditor to enforce his claim directly against the estate or the representatives of the deceased in such cases. If one of a number of joint promisees dies, the survivors succeed to the right to collect the money or enforce the promise, but the estate of the deceased may compel them to account for its share of the proceeds. Also all the joint promisees, or, if some have died, all the survivors, must join in an action to enforce the promise. But there is a great diversity of legislation in the several states modifying these rules and a lawyer should be consulted with reference to the details.

Statute of Frauds.—Although the law prescribes no form for a simple contract, certain contracts must be *proved* by a written instrument or written memorandum or they are not enforceable. This does not mean that such contracts must of necessity be reduced to writing when made. They are not *void* if not expressed in writing. But when an action is brought upon such a contract, the contract must be proved by written evidence, either in the form of a written instrument in which it was set forth when made, or by some subsequent memorandum of its terms. This requirement grows out of an English statute, enacted in 1676, called the Statute of Frauds and Perjuries, or, shortly, the Statute of Frauds. The provisions of that statute which have to do with contracts are contained in the fourth and seventeenth sections. The fourth section provides that no action shall be brought upon any of the following five classes of contracts unless evidenced by some written instrument or note or memorandum thereof in writing, signed by the party sought to be charged or some one lawfully authorized by him:—

1. Special promises by executors or administrators to pay debts of the deceased out of their own property.
2. Contracts of guaranty.
3. Contracts upon consideration of marriage.
4. Contracts for the sale of land or sales of lands or any interests in lands.
5. Contracts not to be performed within one year from the making thereof. These provisions have been reënacted everywhere in America. The seventeenth section provides that contracts for the sale of goods, wares, and merchandise for the price of £10 or more shall not be enforced unless the buyer shall accept and actually receive part of the goods sold or shall make a part payment or give something by way of earnest money to bind the bargain, or a note or memorandum in writing of the bargain shall be made, signed by the parties to be charged or their authorized agents. The provisions of this section have been reënacted in most American jurisdictions, but they are not in force in Alabama, Arizona, Delaware, Illinois, Kentucky, Louisiana, New Mexico, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, Virginia, and West Virginia.

Fourth Section.—Taking up the fourth section first, the first and third provisions speak for themselves. The second provision covers all agreements by one person to become responsible for any civil liability incurred by another. The undertaking is said by lawyers to be "collateral"; and it is said that "original" undertakings are not included in the statute. In other words, to come within the statute, there must be three persons concerned; a creditor, a principal debtor, and a guarantor. Hence if one promises to pay his own debt or the debt of a partnership of which he is a member, the promise need not comply with the statute. For the same reason, there must be a subsisting and legal liability of the debtor to the creditor, or the promise of the third person to pay the claim is not gov-

erned by the statute. Other exceptions to this provision are:—

1. Contracts of indemnity, that is, contracts to save the promisee from loss in case he permits another to incur a liability to him or incurs liability to another.

2. Promises to the debtor (not the creditor) to pay the former's debt.

3. Contracts which discharge the debtor's liability to the creditor and substitute a newly-created liability of the promisor.

4. Contracts to pay the creditor out of property of the debtor put in the hands of the promisor for that purpose.

5. Contracts to pay or assume the debt of another made by the promisor for his own benefit and for a consideration inuring to the promisor alone. But the first of these exceptions is not recognized by the courts in Mississippi, Missouri, North Carolina, Ohio, Pennsylvania, and Tennessee, and there is not entire agreement as to the details of the fifth. The fourth subdivision of section four applies not only to contracts for the sale of land and for the creation of estates or interests in or liens or charges upon land, but also for the disposition of buildings and fixtures which in law are regarded as a part of the land. But growing crops are not within the provision; nor is a contract to sever a fixture from the land and dispose of it when severed. With respect to sales of timber growing upon land, most American jurisdictions hold that the statute applies. The fifth provision of section four applies only to promises which cannot, according to their terms, be performed within a year. Hence it has no application:—

(1) Where no time for performance is fixed,

(2) Where performance is made to depend on a condition or contingency which may be performed or may happen within a year,

(3) Where performance is to take place within a period longer than a year, but may, consistently with such provision, take place within a year.

Seventeenth Section.—The seventeenth section, where it is in force, applies to all sales and contracts for the sale of tangible personal property. And, in this country, it includes also shares of stock and other choses in action (see *infra*, PERSONAL PROPERTY) which have a tangible form. Whether contracts for the future delivery of property are within this section has been the subject of much controversy. In this country, two rules exist. In Massachusetts, a contract is governed by the statute where it is for the sale of articles existing at the time of the contract or for the making and sale of articles such as the seller manufactures or procures for the general market in the ordinary course of his business, whether on hand at the date of the contract or not. This rule is adhered to in California, Connecticut, Georgia, Maine, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, Washington, Wisconsin, and Wyoming. In New York, if the article to be sold is not in existence at the time the contract is made, or is not at that time in a condition to be delivered, the contract is not covered by the statute, unless the acts to be done by the seller are such as will not alter the essential character of the article contracted for. This rule is adopted in Iowa, Maryland, South Carolina, and Vermont.

The Note or Memorandum in Writing.—The note or memorandum need not be made at the time of the contract; a subsequent memorandum will suffice unless made after suit is brought. It need not be in any particular form. Indeed, it may consist of several distinct letters or papers provided they are connected and complete and do not need to be eked out by oral testimony. It must show the terms of the contract and show who are the parties to it. Whether and how far it must express the consideration of the contract has been the subject of much dispute and no general rules can be laid down safely within the compass of this discussion. Only the party who is sought to be held need sign. And the signature need not be at the end. The name written or printed anywhere on the paper, even as a letterhead, will suffice, if adopted by the party to identify the writing as his.

Conditions.—A promise may be absolute, that is, it may be a promise to do something at all events, or it may be subject to limitations. Such limitations may be in respect of the time of performance, or accompany performance, or supervene and defeat a liability to perform. A condition is an act or event which must precede some change in the legal relations of the parties. With respect to the mode of their creation, conditions are express, implied in fact, or implied in law. With respect to the mode of their operation, they are precedent, concurrent, or subsequent. An express condition is one stated in the agreement or promise in express terms. A condition implied in fact is one not expressed in the agreement or promise, but intended by the parties—such intention appearing from the fact that the condition must be performed in order that the promise may be performed. A condition implied in law is one which, without being either expressed or intended by the parties, is supplied or imported into the contract by the courts in the interest of fair dealing. A condition precedent is an act or event which must be performed or exist before any liability accrues under the promise. Conditions are concurrent where liability to perform on each side of a bilateral contract is dependent upon simultaneous performance on the other side. In such cases, the *act* which must precede liability on each side is a tender of performance on the other side. A condition is subsequent where it provides that an existing liability to perform is to terminate or be put an end to by some act or event other than performance itself. Conditions precedent and conditions concurrent may be express, implied in fact, or implied in law. All conditions subsequent are express. In the law of contracts, the courts prefer and imply conditions concurrent wherever possible. As between conditions precedent and conditions subsequent, courts prefer the latter in the law of property, the former in the law of contracts.

Express Conditions, Warranties, Representations.—A representation is a statement, express or by implication (i. e., by acts or conduct), of some material fact affording a reason or motive to another for entering into a legal transaction. A warranty is a contract, collateral to a legal transaction (which may be and usually is itself another contract) by which a party thereto undertakes or promises that cer-

tain facts are or shall be as he represents them to be. The untruth of a representation does not give rise to a cause of action or affect a contract unless the representation was made fraudulently or was made recklessly in known ignorance of the facts represented. The untruth of a warranty, of itself, gives rise to a cause of action upon the warranty. In insurance policies and charter parties a representation or promise, which is made by the parties an essential part of the contract, is called a warranty, and is a condition precedent to liability upon the contract. Whether a representation or promise in a policy of insurance or a charter party is also a warranty, depends on whether the parties have expressly, or by unexpressed intention, gathered from the whole contract, made the validity of or liability under the contract dependent on the truth or the performance of such representation or promise. Express conditions must be complied with strictly, while conditions implied in law require a substantial compliance only. The rule as to express conditions is subject to some qualifications. Courts incline to construe express conditions so as not to work unjust forfeitures or oppressions, as contrasted with mere loss of privilege. Again, in New York, express conditions in building contracts, such as a requirement of production of an architect's certificate as a condition of payment, are treated the same as conditions implied in law. The prevailing American doctrine is that such conditions must be complied with literally, except that fraud of the architect or his refusal to exercise an honest judgment, will excuse a failure to produce his certificate, even though he did not collude with the owner. But fraud of the party who insists upon the condition, or collusion between the owner and the architect in the case put, will excuse from performance of an express condition in all jurisdictions. Where performance of something by the promisee to the satisfaction of the promisor is made an express condition precedent to the liability of the promisor, if the subject matter is one of personal taste and judgment, the decision of the promisor is decisive, even though wrong and unreasonable, if it is honest; but where the subject is one of which any one else may judge equally well, the courts generally construe the condition to require only such performance as ought to satisfy a reasonable man.

Conditions Implied in Law.—The law implies conditions in bilateral contracts only. The reason for implying them in such contracts is that, as there are two promises, each given in exchange for the other, justice and fair dealing demand that neither party be permitted to enforce the promise of the other while in default of performance of his own. Hence, wherever it is possible, consistently with the terms of the contract, the courts will hold that performance, or at least tender of performance, on one side is a condition of calling for performance upon the other side; and they will hold that the two sides of a bilateral contract are conditions concurrent wherever they can reasonably do so. There are, however, cases where this cannot be done, and conditions precedent are implied. A breach of promise gives rise to a cause of action. But if the promise is also a condition, the breach is a defense and an excuse for non-performance on his part of the promise given by the promisee in exchange for the one broken. It is not every breach of the promises made in a bilateral contract which will be held a breach of condition also. If the breach takes place at the outset, before any part of the contract has been performed, a less breach will be held a breach of condition than where it takes place after part performance. But in general, and especially after part performance, the breach of contract on one side, in order to be a breach of condition available to the other side as a defense or as ground for non-performance on that side, must go to the essence of the contract, i. e., must defeat the chief object or at least a very important object of the agreement. In America, the courts generally hold that in mercantile contracts provisions as to time are of the essence of the contract. In other cases the terms and circumstances of the contract must determine the question. A majority of American jurisdictions make it a condition implied in law that the promisor shall not repudiate his promise or announce in advance of the time for performance that he will not perform. In such jurisdictions the other party in such case may treat the contract as broken completely and may sue at once. But in some jurisdictions he must wait till the time fixed for performance has elapsed before suing.

Impossibility of Performance.—Impossibility of performance of a promise may be inherent, that is, the promise may have been to do a thing intrinsically impossible or impossible under circumstances existing when it was made, or supervening; that is, it may have been possible of performance when made or possible intrinsically, but a change of circumstances may have occurred which has made performance impossible. As it is one of the requisites of all legal transactions that the intention of the parties be directed to a possible result, in case a promise is intrinsically impossible it is void. If it was apparently possible, but circumstances unknown to the parties exist which render it impossible, the promise may be voidable for mistake. In case of supervening impossibility some distinctions must be taken. If the promise was intrinsically possible, and the promisor assumed the risk of supervening impossibility, unless the contract is a wager, he is absolutely liable. But in contracts for personal service, it is a condition implied in fact that the person who promises such service shall be able physically to perform.

Contracts in Restraint of Trade.—A contract in restraint of trade may be made as part of and incident to a transfer of a business and its good will from promisor to promisee, or independent thereof. If made as a part of such a transfer it is valid and enforceable, provided it does not go beyond what is reasonably necessary for the protection of the business sold or transferred. In general the restriction should be limited both with respect to time and with respect to space. A general promise not to engage in the business in question anywhere at any time would hardly be reasonable under any circumstances. In drawing such agreements, care should be taken to limit the time and the place to the demands of a reasonable protection of the business transferred, and, in practice, it is safest to have the agreement drawn or passed

upon by a lawyer. An agreement not to engage in any business—not limited to the particular business sold or transferred—is obviously unreasonable and is invalid. Sales of existing business concerns to competitors for the purpose of suppressing competition and creating combinations in restraint of trade are now rendered invalid or at least are visited with penalties by legislation in the several states, and, so far as interstate commerce is affected, by federal legislation.

Wagering Contracts.—Originally wagers were not held intrinsically invalid, but were only invalid legally where the wager involved something inherently illegal or immoral. But legislation changed the rule in England, and in the United States many jurisdictions refused to follow it, so that by judicial decision or legislation all wagers are held contrary to public policy, and void. With respect to wagering contracts of a commercial nature, it may be said that wagers upon the prices of provisions, grain, stock, securities, and the like, upon the basis of "settlement of differences," are unlawful. But this does not mean that all agreements for future sale or partial delivery, even though made on margin or by way of option, are necessarily illegal. In an increasing number of states option contracts of this sort are being declared illegal by statute. But, except as modified by statute, contracts for future delivery are valid, even though the seller does not have the property sold; and buying and selling on margin is not unlawful, provided actual transactions are intended, and not colorable ones to cover actual gambling. Consequently option contracts are not inherently and necessarily unlawful, and the burden of showing that they are colorable and are mere cloaks for what are in fact gambling transactions is upon the person who asserts their invalidity. But if it is shown that neither party intended an actual transaction, each contemplating simply an adjustment by settlement of the difference between the contract price and the market price at the time of settlement, the transaction is void. If both parties, when the contract was made, contemplated actual sale and delivery, they may afterwards settle differences in price by way of performance. If neither intended actual sale and delivery at the time, a subsequent contract providing for actual delivery will nevertheless be upheld. If one of them contemplated actual sale and delivery, but the other intended only a settlement of differences, the former may enforce the contract but the latter may not.

Other Contracts Against Public Policy.—As was said at the outset, it is true of all legal transactions that they must be directed to a legally permissible result. The law will not sanction acts or agreements which have for their purpose anything illegal or contrary to good morals. Hence contracts which have for their plain and acknowledged purpose the violation of the laws of another state are unenforceable. So also the sale of articles which can only be used for illegal or immoral purposes creates no obligation. But sales of ordinary articles of merchandise which can be and usually are used for proper and lawful purposes, are valid, even if the purchaser intends and makes a different use. Yet there may be cases where the purpose is so obviously for use in immoral or unlawful pursuit that the transaction is void, as in case of a letting to a notorious prostitute. All promises and agreements also which tend to corruption, public or private, are void. That is, they are void not only where they involve breach of duty on the part of public officers or deceit of or fraud upon the public, but also where they involve breach of private relations of trust and confidence or fraud upon individuals. Moreover, all promises and agreements that obstruct the administration of justice are invalid. Hence any agreement to stifle a prosecution for a criminal offense, or any agreement, the consideration of which is that one who has committed a crime shall not be prosecuted or that evidence that might convict him shall be suppressed, concealed, or withheld, is void.

Alteration of Written Instruments.—As a general proposition, alteration of a written instrument in any material respect, whether by addition, interlineation, erasure, or substitution, deprives the instrument of legal effect; but to have this consequence the alteration must be made intentionally. An alteration made with the consent of the other party amounts to a new agreement, changing the terms of the original, and will be upheld as such.

Interpretation.—The purpose of interpretation is to find out exactly what the parties intended. To this end the primary clue or index is the literal meaning of the words they have used, or, if the words used have a special significance in the trade, art, or profession in which they were engaged, or a customary meaning in the locality where they contracted, such special or local meaning. If, so considered, their language is ambiguous or the apparent meaning does not seem reasonable, resort is to be had to the context, that is, to the remainder of the instrument or agreement or to instruments or documents executed at the same time or at other times as parts of the same transaction. If the intention still remains in doubt, the intrinsic merit of the various possible interpretations must be considered, and that interpretation is to be adopted which appears most fair, just, and reasonable under all the circumstances. In general, the language of a writing in case of doubt will be taken more strongly against the party who drew it, and hence, presumably, chose language most favorable to himself. The instrument will be construed, so far as possible, so as to reconcile every part of it with every other and thus give effect to every clause and provision; as between an interpretation that would make the instrument or the agreement or any part of it illegal, or invalid, and one that would give it full effect, the latter is to be adopted, and as between those parts which are printed or typewritten and those inserted in writing (or in case of a printed form inserted in typewriting) the inserted matter, in case of conflict, is to be followed.

Drawing Written Contracts.—If an agreement is of enough importance to be reduced to writing, it is usually of enough importance to be drawn or passed upon by a lawyer. A trifling fee at the outset will often save controversy, expense, and litigation later. In general, the danger of contracts drawn up by laymen is, not defect of form, for form counts for little or noth-

ing, but neglect to consider and provide against possible contingencies, so that when something occurs that should have been but was not guarded against or provided for, the writing affords no guide and differences arise. A lawyer, from experience, knows what these contingencies are. It is very rare that a layman appreciates them or that his experience covers all of them. If, however, the layman insists upon drawing his own contract, the chief things for him to do are: (1) to be sure that he clearly understands exactly what the several terms of the agreement are; (2) to state the several things agreed to in plain, simple, non-technical language so clearly that no one can misunderstand, and (3) to ask himself diligently what contingencies may arise to alter or modify the situation, determine what is desired or intended in each of such contingencies, if they happen, and provide fully and clearly for each. Do not try to use technical expressions. Do not try to fill out blank forms. Both are apt to be blind guides, except to the expert. The great thing is to ascertain and to say exactly what you mean. Clear understanding of the precise terms of the agreement and of the contingencies that may affect it is worth more than all the forms that were ever invented. There is always danger that the attention of the layman will be diverted from the substance of the agreement to the form he is trying to follow or the blank he is trying to fill out. No amount of formality will supply deficiencies in substance.

Quasi-Contracts.—The underlying principle of quasi-contract is that one person ought not to be enriched unjustly at the expense of another, and hence where the former, because of mistake, oppression, failure of consideration, or non-performance, impossibility of performance or unenforceability of a contract, is found holding money or property or the benefit of labor or services of the latter, not given to him voluntarily, i. e., as a mere gift, for which he has rendered no equivalent, and which, therefore, it is inequitable and unconscientious for him to retain, the law requires the person holding such money or property to restore the money or the value of the property or services as if he had actually promised so to do.

One who holds money or property paid or delivered to him under a mistake of material fact, is bound to restore the money or the value of the property, unless the person to whom it was paid or delivered has, before he knew of the mistake, changed his position; that is, done something in reliance on or because of such payment or delivery whereby he would suffer loss if compelled to make restitution. Unless there has been a change of position, it does not matter that the mistake was a negligent one on the part of the person who made it. By "material" mistake is meant a mistake inhering in the transaction itself as contrasted with a mistake in the "inducement" thereto—i. e., in the motive or in matters which led to the transaction. To be material, the mistake must be as to the transaction itself, as where one signs a note supposing it is a receipt or a deed of conveyance supposing it is a lease, as to the person, as where one believes he is dealing with one person when in fact it is another person, or as to the object dealt with, as where the parties have one piece of land in mind and actually contract about another. But mistake as to the person is only material in those transactions in which there is a choice of persons. Where, as in sales for cash of property taken after inspection, the person dealt with is wholly indifferent, a mistake in the person is of no consequence. It is generally laid down that mistake of law will not afford ground for relief. But there are many exceptions.

Compulsion.—In the same way money paid by one person to another under compulsion may be recovered back, unless it was actually owing. The compulsion need not be actual physical compulsion. Threatened seizure of or sale of property under legal process, injury to business, or arrest may put such pressure on a person that he does not pay voluntarily. On the same principle, if any one, but especially a public officer or a public service company, extorts money to induce the performance of a duty it owes already without any such payment, the money may be recovered.

Default Under Contract.—Where a party to a contract who has received benefit or advantages thereunder fails to perform his part of the agreement, the other party who has performed or has performed part, may, instead of prosecuting his ordinary remedy for damages for breach of the contract, choose to repudiate the contract on his part also. In such case it follows that the former holds something, not given him as a mere gift, for which he has rendered no equivalent, and he is liable to restore it, if money, or its value, if property or services. In case of services, however, some courts allow only the contract wage or compensation to be recovered. If performance of a contract becomes impossible, money paid or property delivered or services performed thereunder, without any equivalent, may be recovered on the same principle. So also, if the contract is not enforceable because of the Statute of Frauds. But if the contract is void for illegality, there can be no recovery upon Quasi-Contract for money paid, property transferred or services rendered thereunder, because, the parties being equally at fault (in legal phrase, *in pari delicto*), the law will not help either of them. If they are not equally at fault, as, for example, if one of them has been in a position to and has exerted pressure upon the other, or if the transaction was made illegal in order to protect the one from the other, the one less at fault may recover benefits conferred upon the other under the contract for which he has received no equivalent. In most jurisdictions, also, there are special statutes permitting recovery of money lost in gambling.

Negotiable Instruments: Bills of Exchange, Promissory Notes and Checks.—Negotiable instruments, so-called because, unlike other "choses in action" (see *infra*, PERSONAL PROPERTY) the legal title to them could be transferred, and transfer of them by indorsement and delivery to a purchaser in good faith, for value, before maturity, will have the effect of cutting off defenses which the maker may have had against the prior holder, are now governed in most jurisdictions by a statute known as the Negotiable Instruments Law. That statute is modeled upon the English Bills-of-Exchange Act, 1882. It had its inception in this country

in the Conference of Commissioners on Uniform State Laws, which, in 1895, instructed its committee on Commercial Law to prepare a draft of a statute codifying the law of bills and notes. The draft was prepared accordingly, was adopted by the Conference of Commissioners in 1896, and, on the recommendation of the Commissioners, has been adopted in the following jurisdictions: Alabama, Arizona, Colorado, Connecticut, District of Columbia, Florida, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, Wyoming. Probably in a few years it will be in force throughout the United States. In the main the statute does not change the substance of the law as it has existed heretofore, but puts it in a more simple and orderly form and reconciles or eliminates conflicts and inconsistencies, which had grown up gradually in the course of decision in the several states. A summary of its provisions, as nearly as possible in its very words, with an indication of the most important local differences and rules recognized in jurisdictions where the statute is not in force, follows:—

Form and Interpretation.—An instrument to be negotiable must (1) be in writing, signed by the maker or drawer, but pencil writing suffices; (2) contain an unconditional promise or order to pay a sum certain in money; but in Georgia, Illinois, and Indiana, notes payable in produce or merchandise are negotiable by virtue of special statutes, and in the same way notes payable in cotton are negotiable in Mississippi; (3) be payable on demand or at a fixed or determinable future time; (4) be payable to order or to bearer—hence if the instrument is payable to a person named and not to his order or to bearer, it is not negotiable; also (5) where the instrument is a bill of exchange the drawee (person on whom it is drawn) must be named or otherwise indicated with reasonable certainty.

By "sum certain" is meant a fixed, definite sum of money. But the sum payable is a "sum certain" within the meaning of the Negotiable Instruments Law, although it is to be paid with interest or by stated installments or by stated installments with a provision (called an acceleration clause) that upon default in payment of any installment or of interest the whole shall become due, or with exchange, either at a fixed rate or at the current rate, or with costs of collection or an attorney's fee in case payment shall not be made at maturity. Where the Negotiable Instruments Law is not in force, authorities differ as to the effect of making the note payable with exchange. In Minnesota and Texas the rule is the same as that prescribed by the Negotiable Instruments Law. But in Indiana and South Carolina such a provision makes the note non-negotiable. Provisions for payment of an attorney's fee in case of non-payment at maturity are unenforceable in Arkansas, Kentucky, Michigan, Nebraska, North Carolina, Ohio, Oregon, and Virginia. Such a provision destroys negotiability in California, Minnesota, South Carolina, and South Dakota.

A promise to pay is unconditional within the meaning of the Negotiable Instruments Law, although it is coupled with an indication of a particular fund out of which reimbursement is to be made or a particular account to be debited with the amount paid or a statement of the transaction which gives rise to the instrument, such as, for instance, that the instrument was given for the purchase price of something named therein. But an order or promise to pay out of a particular fund is not unconditional, and hence the instrument containing it is not negotiable.

By "fixed or determinable future time" the statute means that the instrument must be payable (1) at a fixed period after date or sight, or (2) on or before a fixed or (absolutely) determinable specified future time, or (3) on or at a fixed period after the occurrence of a specified event which is certain to happen (such as the death of the maker), though the *time* of its happening may be uncertain. But if it is payable upon a contingency, it is not negotiable, even if the event does actually take place. For example, a note payable when some person specified comes of age is not negotiable, because he may not live to come of age, and so the note may not become payable.

If the instrument contains an order or promise to do anything beyond payment of money, it is not negotiable. Exceptions to this are provisions authorizing the sale of collateral securities if the instrument is not paid, provisions for confession of judgment upon the instrument, waivers of exemption and other like laws for the benefit of the maker or drawer, and provisions allowing the holder, if he chooses, to require something to be done instead of payment. Provisions for confession of judgment and for waiver of legal protection or benefits are not allowed in many states, and in these the statute does not change the rule. It merely prevents such provision from affecting the negotiability of the instrument.

It is not necessary that the instrument be dated or recite that value has been received or specify the place where it is drawn or the place where it is payable. In many states, however, there are special statutes requiring notes given in payment for patent rights to state that such is the consideration. Where these or similar statutes are in force, the general provision of the Negotiable Instruments Law does not alter the rule. If no time for payment is expressed, the instrument is payable on demand. When it is knowingly made payable to the order of a fictitious or non-existent person, or the name of the payee does not purport to be the name of any person or the only or last indorsement is an indorsement in blank (that is, an indorsement of the name of the indorser only) the instrument is payable to bearer as well as when it is payable "to bearer" or to a person named "or bearer." Ante-dating or post-dating, unless done for an illegal or fraudulent purpose, does not affect the validity of the instrument.

Consideration.—Every negotiable instrument is presumed to have been issued for a valuable consideration, and every one whose signature appears upon it is presumed to have become a party thereto for value. Any consideration that would support a simple contract (see *supra*, CONTRACTS—*Consideration*) is held to be "value," and in addition (differing from simple

contracts) any antecedent or pre-existing debt. A holder who has a lien upon the instrument (as, for example, a pledgee of a note as collateral security) is considered a holder for value to the extent of his lien. Want of consideration or failure of consideration (i. e., that in exchange for which the instrument was given proves to be of no value or non-existent, or, if a promise, is not done or performed) is a defense against any one except a holder "in due course" (i. e., one who took for value, before maturity, without notice of any defense). If the failure of consideration is partial it is a defense to the extent of such failure except against the holder in due course. An accommodation party (i. e., one who becomes a party to the instrument, without receiving value, in order to lend his name to another), is liable to a holder for value, although such holder knew him to be an accommodation party only.

Negotiation.—A negotiable instrument is negotiated (i. e., transferred so as to make the person to whom it is transferred the "holder" of it) by delivery if it is payable to bearer, and by indorsement and delivery if it is payable to order. The indorsement must be written upon the instrument itself or upon a paper attached thereto.

Indorsements.—An indorsement may be either special or in blank, and may also be restrictive, qualified, or conditional. The holder may convert a blank indorsement into a special indorsement by writing over the signature of the indorser in blank any contract consistent with the character of the indorsement. A special indorsement specifies the indorsee, so that the indorsement of the latter becomes necessary to any further negotiation of the instrument. An indorsement is restrictive when it prohibits further negotiation of the instrument or makes the indorsee agent of the indorser for collection (e. g., "pay John Stiles, for collection," or simply "for collection"), or makes the indorsee a trustee for some one else (e. g., "pay John Stiles for account of Thomas Jackson"). A special indorsement to a person named without adding "or order" or "to the order of" is not restrictive. An indorsee who takes by a restrictive indorsement acquires the right to receive payment and to sue upon the instrument. If the restrictive indorsement authorizes him to indorse (e. g., "pay John Doe or order for collection"), he may transfer his rights as indorsee to another; but in that case his indorsee acquires only the title of the first indorsee under the restrictive indorsement. One who takes by restrictive indorsement takes subject to defenses which the maker might have set up had there been no indorsement. Where the Negotiable Instruments Law is not in force, most jurisdictions hold, as the statute prescribes, that an indorsee for collection may sue upon the instrument. But he cannot do so in Minnesota. A qualified indorsement relieves the indorser of all liability *as indorser*, and operates only to transfer the instrument to the indorsee. It may be made by adding to the indorser's signature the words "without recourse," or any words of similar import. Such an indorsement does not impair the negotiability of the instrument and does not serve to put the indorsee on inquiry as to equities between the original parties. Where the indorsement is conditional, a party liable on the instrument may disregard the condition and pay the holder whether the condition has been fulfilled or not, and the holder will take the money subject to the rights of the conditional indorser. If an instrument payable to bearer is indorsed specially, the instrument is still subject to negotiation by delivery, but the person who indorsed specially is liable as indorser only to such holders as take through his indorsement. If an instrument is drawn or indorsed to a person as cashier or other fiscal officer of a bank or corporation, it is *prima facie* (that is, unless and until the contrary is shown) payable to the bank or corporation and negotiable by its indorsement or by that of the officer. Unless the indorsement bears a date which shows the contrary, every negotiation *prima facie* is considered to have taken place before maturity.

Rights of the Holder.—The holder may sue in his own name (whereas at common law the assignee of non-negotiable choses in action had to sue in the name of his assignor). Payment to the holder in due course of business discharges the instrument. A "holder in due course" is one to whom the instrument was negotiated under the following conditions: (1) it was complete and regular upon its face; (2) he became the holder before it was overdue and without knowledge that it had been previously dishonored, if such was the fact; (3) he took it in good faith (that is, intending actually to buy it as a business transaction, and not merely to cut off defenses of the maker or some other party thereto) and for value; (4) at the time it was negotiated to him, he had no notice of any infirmity in the instrument or defect in the title of the person negotiating it. If the instrument is payable on demand, and is negotiated an unreasonable time after its issue, the holder is not a holder in due course. What is a reasonable time depends upon the facts of each case. A few days could not suggest to any one that the instrument had been dishonored. A few months might, depending on circumstances. A year or more would almost certainly do so. The holder must not only have taken the instrument but must have paid the full amount agreed to be paid therefor before receiving notice of any infirmity in the instrument or defect of title in the person negotiating it, or he will not be a holder in due course. If he has paid part before receiving notice, he is a holder in due course to the extent of such payment. The title of the person who negotiates an instrument is considered defective when he obtained it, or any signature to it, by fraud, compulsion, or other unlawful means, or for an illegal consideration, or when his negotiating it is a breach of faith or amounts to fraud. To constitute notice of an infirmity in the instrument, or defect in the title of the person negotiating it, the person to whom it is negotiated must have had actual knowledge of the infirmity or defect or knowledge of such facts that his taking the instrument amounted to bad faith. A holder in due course holds the instrument free from any defect of title of prior parties and free from defenses available to prior parties among themselves, and may enforce payment for the full amount of the instrument against all parties liable upon it. In the hands of any holder other than a holder in due course,

a negotiable instrument is subject to the same defenses as if it were non-negotiable. But a holder who derives his title through a holder in due course, and who is not himself a party to any fraud or illegality affecting the instrument, has all the rights of the holder in due course through whom he takes as against all parties prior to the latter. By "prior" parties are meant those who became parties by making, drawing, accepting, or negotiating before the indorsement in question. Every holder is taken to be a holder in due course unless and until the contrary is shown. But when it is shown that the title of any person who has negotiated the instrument was defective, the burden is on the holder to prove that he, or some person under whom he claims, took as a holder in due course.

Liability of Parties.—The maker of a negotiable note contracts to pay it according to its terms, and is the person primarily liable upon it. The drawer of a bill of exchange or of a check contracts that the instrument will be accepted or paid, as the case may be, on due presentment, according to its terms, and that if it is dishonored and due notice is given, he will pay the amount to the holder or to any indorser who may be compelled to pay it. The acceptor of a bill contracts to pay it according to the terms of his acceptance, and is the person primarily liable. A person who places his signature upon a negotiable instrument otherwise than as maker, drawer, or acceptor, is taken to be an indorser unless he uses words that clearly show an intention to be bound in some other way (e. g., as guarantor). Where a person who is not maker or drawer or payee puts his signature in blank upon a negotiable instrument before delivery, he is called an irregular indorser. The Negotiable Instruments Law provides that an irregular indorser shall be liable as indorser, subject to three rules: (1) If the instrument is payable to the order of a third person, he is liable to the payee and to all subsequent parties; (2) if the instrument is payable to the order of the maker or drawer, or is payable to bearer, he is liable to all parties subsequent to the maker or drawer; (3) if he signs for the accommodation of the payee (i. e., to enable the payee to negotiate it), he is liable to all parties subsequent to the payee. Every person negotiating an instrument by delivery (i. e., where payable to bearer or indorsed in blank prior to the negotiation) or by a qualified indorsement (i. e., one "without recourse") warrants (1) that the instrument is genuine and in all respects what it purports to be; (2) that he has good title to it; (3) that all prior parties had capacity to contract; and (4) that he has no knowledge of any fact which would impair the validity of the instrument or render it valueless. He is liable for damages for breach of any of the warranties which the law creates, even though he did not indorse at all or indorsed "without recourse." But where the negotiation is by delivery only, only the immediate transferee has the benefit of the warranty involved in the transfer, and the warranty of capacity of the parties to contract does not apply to municipal or corporate bonds or to public or private securities other than bills of exchange and promissory notes. An indorser, except one who makes a qualified indorsement, warrants (1) that the instrument is genuine and what it purports to be; (2) that he has a good title to it; (3) that all prior parties had capacity to contract; and (4) that the instrument is valid and subsisting at the time of his indorsement. In addition to the warranties involved in his indorsement, his indorsement is a contract that on due presentment the instrument shall be accepted, or paid, or both, according to its tenor, and that if it is dishonored, and due notice is given, he will pay the amount of it to the holder or to any subsequent indorser who may be compelled to pay it. Among themselves, in the absence of special agreement, indorsers are liable in the order in which they indorsed.

Presentment for Payment.—Presentment for payment is not necessary in order to hold the person primarily liable on the instrument, but it is necessary in order to hold the drawer of a bill or check and in order to hold indorsers. Where the instrument is not payable on demand, presentment must be made on the day it falls due. If payable on demand, presentment must be made within a reasonable time after the instrument is "issued" (i. e., first delivered, complete in form, to a person who takes it as holder). But a bill of exchange payable on demand may be presented for payment within a reasonable time after the last negotiation of it. Presentment must be made by the holder or by some one authorized to receive payment on his behalf, at a reasonable hour on a business day, to the person primarily liable, or, if he is absent or cannot be reached, to any person found at the place where presentment is to be made. Presentment for payment must be made at the place of payment specified in the instrument, if any is specified. If no place is specified, but the address of the person to make payment is given in the instrument, it must be presented there. Otherwise it is to be presented at the usual place of business or residence of the person who is to make payment. If no such place may be found, with reasonable inquiry, it may be presented to the person who is to make payment, wherever found, or at his last known place of business or residence. If payable at a bank, presentment for payment must be made during banking hours, unless the person to make payment has no funds there to meet it at any time during the day, in which case presentment at any time before the bank is closed on that day is sufficient. If the party primarily liable is dead, and no place of payment is specified, presentment must be made to his executor or administrator, if any. Where the persons primarily liable are liable as partners, and no place of payment is named, presentment may be made to any one, even though the partnership has been dissolved. But in other cases of joint debtors on the instrument, unless a place of payment is named, presentment must be made to all. If the drawer has no right to expect or require that the drawee or acceptor will pay the instrument, presentment for payment is not necessary to hold the drawer; nor is it necessary to charge an indorser where the instrument was made or accepted for his accommodation, and he has no reason to expect that it will be paid if presented. If delay in making presentment is caused by circumstances beyond the control of the holder, it will be excused. But he must make presentment with reasonable diligence after the cause of delay

ceases to operate. Presentment is dispensed with where, after the exercise of reasonable diligence, it cannot be made and where the drawee is a fictitious person. It may also be waived in writing or orally, and waiver may be shown by the usage of the parties or the business. The instrument is dishonored by non-payment when it is duly presented and payment is refused or cannot be obtained, or where presentment is not necessary or dispensed with and the instrument is overdue and unpaid. When the instrument has been dishonored, and notice has been given, it is said that the liability of drawers, indorsers, and parties secondarily liable has "become fixed." The holder now has a right to resort to them for payment, and they are no longer regarded as sureties for the person primarily liable. By the Law Merchant, three days of grace were allowed for payment after the date fixed by the instrument. The Negotiable Instruments Law has abolished days of grace, but it provides that if the instrument falls due on Sunday or a holiday, it is payable on the next succeeding business day. This was the rule of the Law Merchant also. Where days of grace exist, if the last day of grace falls on Sunday or a holiday, but two days are allowed.

Notice of Dishonor.—Notice of dishonor must be given to the drawer and to each indorser, and, in general, any drawer or indorser to whom such notice is not given is discharged. It may be given by or on behalf of the holder or by or on behalf of any party who might be compelled to pay the holder, and on so doing could claim reimbursement from the party notified. It may be given by agent, and the agent may give the notice in his own name. If given by or on behalf of the holder all subsequent holders and all prior parties who have a right of recourse against the party notified are entitled to the benefit of the notice. It may be written or oral. If written it need not be signed, and may be supplemented by an oral communication. A misdescription of the instrument does not invalidate it unless the misdescription actually misleads the party notified. But it must identify the instrument and must indicate that the instrument has been dishonored by non-acceptance or non-payment. It may be given by personal communication or delivery or through the mails, and either to the party himself or his agent. If the party to be notified is dead, it must be given to his executor or administrator, if any. If there is none, it may be sent to his last residence or last place of business. With respect to partners and joint debtors, the rule is the same as in case of presentment. The notice may be given as soon as the instrument is dishonored, and, if the parties reside in the same place, must be given as follows: (1) If given at the place of business of the person to receive notice, before the close of business hours on the day following; (2) if at his residence, before the usual hours of rest on the day following; (3) if sent by mail it must be deposited in the post office so as to reach him in the usual course of mail on the day following. If the parties reside in different places, if the notice is sent by mail, it must be deposited in the post office in time to go by mail the day following the day of dishonor, or if there is none at a convenient hour, by the next mail thereafter. If given in some other manner it must be within the time in which a notice by mail, duly given, would have been received. If properly addressed and deposited in the post office, there is due notice, notwithstanding any miscarriage in the mails; and the term post office in the statute includes branch post offices and letter boxes. Where a party has added an address to his signature, notice must be sent to that address. If he has given no address, it must be sent to the post office where he is accustomed to receive letters, either his place of business, or his office, or any place where he is staying. If he actually receives it in time, it is no matter where it was addressed. Notice may be waived, and a waiver of "protest" is held to waive presentment and notice. Delay is excused and notice itself dispensed with in like circumstances as in case of presentment. But in addition, if drawer and drawee are the same person, or the drawee is a fictitious person, or the drawer has stopped payment, the drawer is not entitled to notice of dishonor. Notice need not be given to an indorser where the drawee is a fictitious person, and he knew it, or where the instrument was made or accepted for his accommodation.

Bills of Exchange.—An inland bill of exchange is a bill which on its face is both drawn and payable within the state. Any other bill is called a foreign bill. The bill may be drawn on two or more drawees jointly, but not in the alternative or in succession. But the drawer or any indorser may insert the name of a "referee in case of need," that is, of a person to whom the holder may apply, in case the bill is not accepted or is not paid. In such a case, the holder may resort to such person or not as he sees fit.

Acceptance of Bills of Exchange.—The acceptance must be in writing, signed by the drawee. The usual form is "accepted," followed by the signature of the drawee. The holder has the right to insist that the acceptance be written on the bill, and may treat the bill as dishonored if this is not done. But an acceptance on another paper will bind the acceptor in favor of any one to whom it is shown and who takes the bill for value on the faith of it. The drawee is allowed 24 hours after presentment in which to decide whether or not to accept, but if he destroys the bill or refuses to return it after 24 hours, he is held to have accepted. This provision is not in force in Illinois.

Protest.—Protest is only necessary in case of dishonor of a foreign bill of exchange by non-acceptance, or, if not previously dishonored by non-acceptance, by non-payment. If it is not made the drawer and indorsers are discharged. But it is much better and safer to resort to a notary public and have protest made in all cases, as the record of the notary affords a certain and convenient mode of proof, and the notary usually has given an official bond upon which recourse may be had if he makes a mistake resulting in loss. The protest must be in writing, signed and sealed by the notary, and must be attached to the bill or to a copy of it. It must be made at the place and on the day of dishonor of the bill. In other respects the rules governing it are similar to those governing notice of dishonor.

Checks.—The Negotiable Instruments Law provides expressly that its rules applicable to bills of exchange payable on demand shall apply to checks, except as otherwise provided. Three special points should be noted: (1) a check must be presented for payment within a reasonable time after it is issued, or the drawer will be discharged from liability to the extent of any loss caused by the delay (e. g., intervening insolvency of the drawee); (2) where the check is certified by the bank on which it is drawn, the certification is equivalent to an acceptance; (3) if the holder procures the check to be certified, the drawer and all indorsers are discharged.

Agency.—An agent is a person appointed to do some act or to act generally on behalf of another. The latter is called the "principal"; and what the agent does in execution of his agency is regarded legally as if done by the principal. An attorney-at-law is an agent who conducts the legal business of his principal, here called his "client." An attorney in fact is an agent appointed by a deed, called a power of attorney. (See *infra*, CONVEYANCING). A factor is an agent to whom goods are consigned for sale upon commission. If he undertakes to become responsible to the principal for payment by or solvency of those to whom he sells, he is called a "*del credere* agent." A broker is an agent employed to buy or sell without having possession of the property or to go between the parties and bring them together.

Appointment of Agents.—In general, no form is necessary. A course of conduct which shows an intention that the agent act for and on behalf of the principal will suffice. And if the course of conduct is such that a reasonable man would so interpret it, those who deal with the supposed agent in reliance on the appearance so created will be permitted to hold the supposed principal as what his acts have made him appear.

Ratification.—Although one who acts as agent has no authority, the person for whom he has assumed to act may treat the act as authorized and thus become bound thereby as if he had authorized it in the first instance. This is called ratification. One may ratify expressly or by accepting the benefit of the transaction with knowledge of all the facts. But one who ratifies must ratify the whole. He cannot ratify that part which is to his advantage and repudiate the remainder.

General and Special Agents: Execution of the Agency.—A general agent is one employed either to manage the whole business of the principal or in a position of a generally recognized character, which, from its nature, carries a considerable apparent authority. A special agent is one appointed for a particular occasion or purpose which does not involve any apparent authority beyond what is specially given. The principal is bound by what the general agent does within the scope of his authority, even if contrary to the instructions given him. He is only bound by the acts of the special agents so far as they were authorized. The agent ought always, if only for his own protection, to act in the name of his principal. Thus he should not sign "Richard Roe, Agent," but "John Doe, by Richard Roe, his agent." Otherwise there is danger that he may be held personally upon a transaction into which he intended to enter as agent only. If he acts in his own name without disclosing his principal, the principal may nevertheless sue or be sued upon the transaction, because in truth it is his. But the agent may be held personally, because the other party dealt with him supposing him to be the party in interest. Also if the principal sues in such a case, the other party may make any defense he might have made against the agent. The agent having been chosen because of the confidence reposed in him personally, cannot delegate his agency to another. But he has the power to do anything reasonably necessary to execution of his agency, which includes the employment of sub-agents for whose acts he is liable as principal. He is responsible to the principal for execution of his authority according to the terms thereof. If he exceeds his authority or violates his instructions, he may make the principal liable to third persons, but he will himself be liable to the principal for the resulting loss. When he deals with third persons as agent, he impliedly warrants his authority, and is liable to them if his acts fail to bind the principal for lack of authority.

Rights and Duties of Agents.—An agent is a fiduciary, that is, he occupies a relation of trust and confidence. Hence he must deal with his principal in the utmost good faith, must fully disclose to him all facts bearing on transactions between himself and the principal, must not make any secret profit out of the agency, and must account to the principal for it if he does, and occupies the position of a trustee with respect to money and property in his hands. He is entitled to be reimbursed for expenses properly incurred in the course of the agency. Whether or not he is entitled to compensation depends upon his contract with the principal.

Revocation.—Agency is terminated by death of either principal or agent. It may also be revoked by the principal unless the agency is "coupled with an interest" (i. e., unless the agent is agent of the principal for some purpose of the agent's as well as of the principal's). But if the agency is generally known, the principal on revoking should notify third persons who have been in the habit of dealing with the agent as such, or he may be bound by the appearance of agency which he suffers to continue.

Suretyship and Guaranty.—A surety enters into a joint or joint and several contract along with the principal debtor (called the principal) upon the same consideration, so that in form both principal and surety have joined in the promise or undertaking. A guarantor enters into an independent contract, collateral to the contract or obligation of the principal, upon an independent consideration, if made after the principal's obligation is incurred, to be answerable for performance by the principal. A guaranty must be evidenced by writing (see *supra*, CONTRACTS, STATUTE OF FRAUDS). As between principal and surety, the former ought to pay or perform. Hence he is said to be primarily and the latter to be secondarily liable. As between the creditor and the surety, the latter is a joint or joint and several debtor. But if the principal knows the latter to be surety, he is bound so to act as not to interfere with the rights of the

surety, as between him and the principal, growing out of the surety's secondary liability.

Release or Discharge of Surety or Guarantor.—As the contract of a guarantor is collateral, obviously he cannot be liable unless there is an obligation on the part of a principal, to which his agreement may be collateral. Hence if the principal is not liable or the liability of the principal is extinguished, the collateral liability comes to an end also. Moreover, the surety or guarantor may be discharged (1) by acts of the creditor without his consent, altering materially the contract with the principal; (2) by acts which, without his consent, take away his right to pay the creditor, and for his own protection obtain thereby the immediate power to enforce the creditor's rights against the principal. Hence an extension of time to the debtor on consideration and for a definite period, a surrender of securities to the principal, or a material variation of the surety's or guarantor's risk, without the latter's consent, is a discharge. In the absence of statute, the better opinion (though the matter is in dispute) is that surety or guarantor cannot compel the creditor to sue the principal first; his remedy is to pay the debt and enforce the creditor's rights against the principal himself for his own protection. But statutes allow him to notify the creditor to sue, and release him in case the notice is not complied with, in Alabama, Arkansas, Illinois, Indiana, Iowa, Kentucky, Mississippi, Missouri, North Carolina, Ohio, South Dakota, Tennessee, Texas, Virginia, and Washington. The same result is reached by judicial decision in New York, Pennsylvania, and partially in Minnesota.

Rights of Surety.—In addition to the right to pay the debt and succeed to the creditor's rights against the principal debtor for his own protection, a surety has a right against the principal to be indemnified for whatever he has been compelled to pay on the debt, against his cosureties to compel them to contribute their shares of what he has had to pay, supposing he has paid more than his share, and against the principal to compel the latter to exonerate him by paying the debt.

Rights of the Creditor.—The creditor, except when notice is allowed as above explained, may proceed immediately against guarantor or against surety, if he is jointly and severally liable, or against principal and surety jointly, if they are jointly liable, to collect the debt. He also has a right to require the guarantor or surety to apply on the debt any securities the principal may have given him for his indemnity.

Partnership. — Partnership is the relation between persons who have agreed to combine their money or property or labor or skill or some of them in a joint enterprise or business, and to share the profits. The basis of partnership is agreement, and the law does not recognize the partnership as an entity or legal person. Herein it differs from a corporation, the basis of which is the authority of the state creating a legal entity or person distinct and apart from the individual incorporators. Hence, while a corporation owes debts, not the stockholders or members, a partnership does not owe debts legally, but the partners owe them. That is, the liability of members or stockholders in a corporation is a limited one, usually extending only to the amount unpaid upon their shares. But the partners in a partnership are joint debtors, and are liable for the whole amount of the partnership indebtedness. It is common, however, for statutes to provide for special or limited partnership, in which a special partner, who advances or has advanced money to the business, receives a share of the profits for the use of his money, and is not liable for debts. Such statutes require that the name of the special partner shall not appear in the firm name, and that the partnership agreement (or articles) shall be filed in some specified public office. It follows also from the legal conception of a partnership that debts due to it are legally due to the partners as joint creditors. Hence, if one partner dies, the debt, in legal understanding, is due to the surviving partner. But he must account to the estate of the deceased partner for the latter's share. Conversely, the legal liability for partnership debts, in case of death of one partner, is imposed on the survivor. But the latter is entitled to be repaid out of the estate of the deceased for anything he may pay upon such debts beyond his share. On the same ground, suits against the partnership originally had to be, and, even after modern legislation allowing suits by or against partnerships in the partnership name, may be brought against the partners jointly, just as against any other joint debtors, and either the property of any partner or the partnership property may be levied upon under execution to pay the debt. Moreover, a creditor of a partner, for a debt in which the partnership has nothing to do, may levy execution upon the partnership property and sell the debtor's interest therein, as in any other case of joint ownership.

Powers and Duties of Partners.—Each partner is the agent of the partnership, and hence of all the partners, with respect to the partnership business. If among themselves they have agreed to limit the authority of some one partner, he may become liable to his co-partners if he exceeds such limitation. But persons who deal with the partnership are entitled to assume that any partner may bind all, unless they know of the limitation. Partnership is a fiduciary relation, and all that was said above (see AGENCY, *supra*) as to the nature and consequences of such a relation applies here also. A partner cannot sell or transfer his share or any part of it so as to bring a new partner into the partnership without the consent of all his co-partners. And if a new one is so brought in, he becomes a co-owner of partnership property and joint debtor for its debts from the time he is taken in. He is not liable for prior debts, and the former partner whose place he takes is still liable therefor. But it may be agreed that he shall assume the liability of the retiring partner.

Dissolution.—A partnership, if formed for a fixed and limited time, is dissolved by expiration of that time; if not, it may be dissolved by notification of any one to the others that it is dissolved. In either case, it is dissolved if all consent, if a partner dies, or if one of the partners becomes bankrupt. It may also be dissolved by a court if one of the partners become insane or incapable of acting, or so conducts

himself as to prevent proper carrying on of the business, or if the business can only be carried on at a loss. Where a court winds up a partnership, it will pay the partnership creditors first out of the partnership assets, and will allow creditors of the individual partners to take only what is left.

Corporations.—A corporation is regarded in law as a person distinct from its members, so much so that it may have rights against them and they in turn have rights against it or toward it. It derives its existence from the state. Formerly each corporation was created by a special act, for that purpose called a charter. The practice now is to provide by general law, that ordinary business corporations may be formed by a simple process of adopting articles of association or incorporation and filing them or a certificate thereof in some designated public office.

Corporations are of two kinds, public and private. A public corporation is one created for some purpose of government, such as a city, a village, a school district. Other corporations, even where they are public-service corporations, like railway, telegraph, telephone, and express companies, are called private corporations. In case of charitable, religious, library, and sometimes social institutions or societies, which are permitted to incorporate, the statutes prescribe an organization without capital stock. But in other cases the interest which the members have in the corporation is represented by shares in the capital stock, the total amount of which is fixed by the charter or articles. The stockholders are not in any sense the owners of the property or assets of the corporation. The corporation owns them. The stockholders own merely the shares, which give them a right to participate in the control of the corporation, receive dividends, if any are declared, and upon winding up of the corporation, to receive a share in the residue after payment of all claims against the corporation in the proportion which their shares of stock bear to the whole capital.

Powers of Corporations.—A corporation may sue and be sued in the corporate name, may have and use a seal, and may make reasonable by-laws, not inconsistent with law, for its government. It also has what is called legally "perpetual succession"; that is, the corporate existence is in no way affected by changes in its membership, and its property and obligations belong to and are those of the legal entity, no matter who are the members or how the membership changes. But the corporation only has the powers and can only use its powers for the purpose provided in its charter articles. An act outside of what is so provided is said to be *ultra vires*, that is, beyond its powers. If it attempts to do *ultra vires* acts, any stockholder may obtain an injunction. The corporation cannot enforce *ultra vires* contracts against third persons, and some authorities hold that *ultra vires* acts are wholly void.

Management of Corporations.—The charter or articles provide how a corporation shall be managed or governed. As a general proposition, the ultimate government is in the meeting of all the stockholders, in which each has one vote for each share which he holds. The immediate management is usually in a board of directors. These directors occupy a fiduciary relation to the corporation and to the stockholders (see *supra*, AGENCY). In case of mismanagement, in breach of the duties imposed by this relation, a stockholder may bring a suit on behalf of the corporation to enjoin the mismanagement and compel restitution to the corporation of money or property it is equitably entitled to.

Stock and Stockholders.—Shares are usually evidenced by certificates and are transferable on the books of the corporation by surrender of the old certificate and taking out a new one running to the new shareholder. The usual practice is to execute a blank power of attorney on the back of the certificate authorizing the holder to make such transfer, so that practically when the original holder has indorsed it, the certificate can pass by delivery. But at law the person who is registered on the books as stockholder is regarded as owning the shares, and he only is entitled to vote at meetings and to receive dividends.

Dissolution.—A corporation may be dissolved by expiration of the time fixed in its charter or articles, by voluntary surrender of its franchises, or by forfeiture, either for not using its franchises or for misusing them, at suit of the state. Statutes in many jurisdictions also provide for the judicial winding up of insolvent corporations, on the vote of the stockholders, or at the instance of certain public officers.

Property.—The law distinguishes two kinds of property, real property and personal property. The distinction is an arbitrary and technical one, and is by no means as easy as the layman usually supposes it. Real property, on the death of the owner, descends at once to the heir or heirs, unless disposed of by will; personal property, whether there is a will or not, passes at once to the executor or administrator, by whom, if disposed of by legacies in the will, it is turned over to the legatees, or, if there is no will, it is distributed among the next of kin of the deceased owner. Estates in land, except for a fixed period of time, i. e., for years, and certain rights called "incorporeal hereditaments," such as rights of way and other like rights in another's land, rights to take something from another's land (called profits), franchises, annuities and rents, are real property. Everything else that may be owned, including estates in land of definite duration, is personal property.

Personal Property.—The technical term for personal property is "chattels" or "goods and chattels." Chattels are of two kinds: chattels real, that is, estates in land less than freehold (i. e., for years or at will), and chattels personal, that is, all other forms of personal property. Chattels personal are classified as choses in possession, that is, tangible corporeal chattels and choses in action, that is, incorporeal chattels, such as notes, book accounts, shares of stock, bonds, judgments, and the like.

Choses in Action.—Originally the law did not allow choses in action to be transferred. Later it allowed transfer of claims upon contract or for injury to property to the extent that the assignee might sue and collect in the assignor's name. Statutes now allow him to sue in his own name in most jurisdictions. But

claims for salary of public officers not yet earned cannot be assigned.

Joint and Common Ownership. — Where two or more persons own a chattel in undivided shares they are to-day owners in common. Partners as to debts due the firm, and trustees, executors, and administrators are an exception. They are held joint owners, so that is one dies the legal title goes to the survivors. In case of ownership in common, the share of a deceased owner is treated like any other property. Ownership in common of chattels is a very unsatisfactory form of ownership. Each owner is entitled to possession, and the possession of one is that of all. Hence unless the chattel is divisible (e. g., so many tons of hay or bushels of grain), if one owner in common excludes the other from the use of the chattel, the latter's only remedy is to go and take it, if he can, without breach of the peace. Even if there is a contract how it shall be used, he can only sue for breach of that contract. If the chattel is divisible, there may be partition by either taking his share. In any case there may be partition by agreement, or if the chattel is indivisible and they cannot agree, by suit for that purpose. If repairs are necessary, either may repair, and if the other has agreed or has been notified and refused to do anything, the latter may be held for his share of the reasonable expense of necessary repairs.

Acquisition of Chattels.—There are two modes of acquisition: original acquisition, by which one gets a new and independent title (without regard to any pre-existing rights of others), and derivative acquisition, in which one gets whatever title the person from whom he takes has to give him. One mode of original acquisition is occupation, i. e., taking possession with intent to become owner, of wild animals (not on another's land), or of abandoned chattels (provided one is rightfully on the land where he finds them). An abandoned chattel is one of which the owner has relinquished possession intending to give up all his rights in it. Another mode is adverse possession of the chattel for the period of the statute of limitations. Another mode is called accession. The person seized of land for the time being, even if wrongfully, becomes the owner of the fruits and products of the soil he removes therefrom while seized. The owner of animals becomes owner of the increase born to such animals. Another form of accession takes place where materials of two persons are united or where one person expends labor upon another's materials so as to change their form. In the former case, if they cannot be separated, the whole belongs to the owner of the principal materials, but the other has a claim for the value of what he thus loses. In the latter, if the new form is of a value greatly in excess of the old one, the person who has made the change by his labor in good faith is owner, but the other has a claim for the value of the materials; if the new form is not of a value greatly exceeding that of the old one, the original owner does not lose his property. Still another mode is confusion. If the property of two persons is confused so that the original components of the new mass cannot be distinguished, each owns an undivided share in the new mass to the extent to which his property is represented therein. If the proportion of the original components to the new mass cannot be ascertained, and the confusion was made willfully and fraudulently by one of the parties, the whole is awarded to the innocent party.

Derivative acquisition takes place by law when one who has converted to his own use another's chattel and has been sued for the conversion pays the judgment. By satisfying the judgment he becomes owner as of the date of the conversion. It takes place by act of the parties in case of gift, legacy, sale, or mortgage.

Gifts.—A gift is a gratuitous transfer of a chattel from one person to another. Gifts must be accepted by the donee (person to whom the gift is made), but acceptance is presumed. They are of two kinds: *inter vivos*, i. e., between living persons, and *causa mortis*, i. e., in contemplation of death and conditioned on death ensuing. Gifts of each kind require delivery of the article to the donee or to some one for him. A gift *causa mortis* is one made in contemplation of death from disease or from some impending peril. If death does not ensue, the gift does not take effect. And the donor (giver) may revoke the gift at any time. When a gift *inter vivos* is complete by delivery or one *causa mortis* by delivery in the lifetime of the donor and death of the donor from the disease or casualty feared, it is not revocable.

Sales.—A uniform statute on the subject of sales of personal property has been approved by the Commissioners on Uniform State Laws, and has been adopted in six jurisdictions. It is likely that eventually it will be put in force throughout the United States. At present, however, the common law on the subject is generally in force. The word "sale" is used in two senses. Strictly it means an agreement by which the seller (legally called the vendor) transfers to the buyer (vendee) the whole of some existing property right for a price in money. But the term is also used to mean a contract to make such a transfer at some future time (executory sale). In an executory sale, one need not be owner; he may bind himself to procure and transfer in the future. But no one can give any better or greater title by a sale than he has to transfer. Even though the buyer takes for value without notice, except in the case of negotiable instruments, he only gets the title of the seller, whatever that was. If, however, one sells something he does not own and warrants the title, in case he afterwards acquires title to it, that title will pass to the vendee, because the law will not allow the vendor to deny the title he purported to convey and warranted. If a bill of sale, i. e., a written transfer of the property under seal (except where seals are abolished, see CONTRACTS, *supra*), is executed and delivered, title passes thereby at once. If not, if the subject of the sale is not specific, e. g., 10 horses, but not 10 particular horses, 10,000 bushels of wheat, but not the wheat in a particular elevator, title passes to the buyer on delivery. If the subject is specific, when title passes depends on the intention of the parties; if they intend an immediate transfer, it passes; if they intend an executory sale to be completed later by carrying out the agreement, it does not. Until title has passed to the buyer, the risk of loss of the article (e. g., by destruction, burning, death, etc.) is on the seller. Delivery to a common

carrier consigned to the buyer is a delivery which passes title to the buyer unless the parties have agreed otherwise. Where the sale is on credit and the property is sent to the buyer by a common carrier or any agency other than the buyer's agent or servant, the seller may stop it while in transit and retake it, in case it has not come into the buyer's possession and control, if the buyer becomes insolvent. This is called the right of stoppage *in transitu*. Where section 17 of the Statute of Frauds is in force (see CONTRACTS, *supra*) it applies to sales.

Warranty.—Every sale of a chattel which at the time of the sale is in the seller's possession carries with it by implication a warranty that the seller has title to what he sells. But there is no implied warranty of quality. As to that the buyer takes the risk unless there is an actual (express) warranty. There are exceptions, however. If something is ordered from a manufacturer for a special purpose of which he has knowledge, he warrants by implication that it shall be reasonably fit for that purpose. Express warranties are subject to an exception that if the buyer had an opportunity to inspect the thing warranted, the warranty does not cover obvious defects which any one could discover by an ordinary examination. If the sale is procured by fraud, it is voidable (see CONTRACTS, *supra*). But if not, a mere breach of warranty does not give the buyer a right to set aside an executed sale. His remedy is to sue for breach of the warranty.

Chattel Mortgages.—A chattel mortgage is in form a conveyance of personal property to a creditor upon a condition that if the debt is paid according to the terms of the obligation, the transfer shall be void and the property revest in the mortgagor. Originally if the debt was not paid at maturity, the mortgagee simply had a complete title to the property. But equity allowed the mortgagor to redeem and the mortgagee to sue in equity to require him to do so, and cut off (foreclose) the right of redemption if he did not. To-day statutes everywhere provide a simple and inexpensive foreclosure by taking possession of the property, selling at public sale after notice, and applying the proceeds on the debt. Blanks for chattel mortgages adapted to local requirements may be procured in any community, but a few suggestions and warnings about the use of them may be made. The description of the property should be such as to afford notice to third persons. Hence the property must not only be described clearly but *located*. The place where the property is situated is an important element of the description, and should not be omitted. It is also important to bear in mind that a power of sale by the mortgagor, without requiring him to account to the mortgagee for the proceeds of sales, is a fraud on other creditors, and makes the mortgage void as to them. If there is nothing in the mortgage upon this matter, but the mortgagee knows of and permits sales without an accounting for the proceeds, other creditors may set the mortgage aside. Where a mortgage is given upon a stock of goods, therefore, one ought to be careful to insert a provision therein covering this point. The mortgagee should also see to it that the form or blank used contains a clause authorizing foreclosure in case the mortgagee feels "unsafe or insecure." This will enable him to take the property, if with good reason he believes his security is becoming impaired. If the mortgage is for a small sum, it is for the advantage of both parties to include a waiver of the statutory requirements as to notice of sale, and even to agree to a private sale. Unless waived, all statutory provisions must be substantially complied with. If not, the mortgagee may become liable to the mortgagor for conversion of the property. Statutory provisions as to recording or filing chattel mortgages vary greatly in the different states. These should be looked up and carefully complied with. Otherwise other creditors may defeat the security.

Possession of Chattels: Bailments.—Without being the owner of a chattel, one may nevertheless have the right to possession of it against every one, including the owner, or against every one but the owner, by reason of bailment, or pledge, or lien, or finding. A bailment is a delivery of possession of a chattel by one person (called the bailor) to another (called the bailee) to be held by the latter for the purpose of the bailment and redelivered when that purpose is accomplished. Bailments are of three kinds: (1) those for the sole benefit of the bailor, such as a deposit for safe keeping without compensation; (2) those for the sole benefit of the bailee, such as gratuitous loan of an article; and (3) those for the benefit of both, such as delivery to a carrier for transportation for hire or delivery to a creditor by way of pledge. In the first class, the bailee is excused if the property is lost or stolen or destroyed unless he was grossly negligent. In the second he is held to a high degree of care, and is liable if the property is lost or stolen or destroyed unless he uses such care. In the third class he is held to ordinary care such as prudent men generally employ.

Pledges.—A pledge or pawn is a bailment of a chattel as security for a debt, the pledgee acquiring a right to retain possession until the debt is paid. If the debt is not paid, he may foreclose by suit for that purpose or he may give reasonable notice to the owner and proceed to sell at auction and apply the proceeds on the debt. The pledgee may assign his rights to another, or even pledge them, if he does so subject to the rights of the pledgee, but he has no right to sell before the debt is due or to repledge as his own so as to cut off the right to redeem. If he does so, the pledgor may sue for conversion and recover the difference between the value of the property and the amount of the debt. Whatever pledgee may do, the pledgor is not entitled to possession until he pays or tenders the amount of the debt. In case of pledges of negotiable instruments or other choses in action, called collateral securities, the instruments, indorsed where necessary, are delivered to the pledgee and a written contract is usually entered into specifying the manner in which the securities shall be disposed of in case the debt is not paid. Reference may be made to Jones, *Pledges* (2 ed.), Boston, 1901, or Colebrooke, *Treatise on the Law of Collateral Securities* (2 ed.), Chicago, 1898.

Liens.—A lien is a right to hold possession of the property of another until some claim of the person in possession is satisfied. This is the original use of the term, and a lien of this sort

is called a "common-law lien." There are also statutory liens, which give a right to sell for satisfaction of the claim, and even, in some cases, to take possession of the property and have it sold. With respect to extent, liens are special or general, that is, they are rights to hold (or hold and sell) for a particular claim, or to hold (or hold and sell) for all sums due from the owner to the lien holder. Of the latter type is the lien of the factor upon goods of the principal in his hands. Special liens are given by the common law to the carrier for freight upon the property transported (but not on other property), to the innkeeper upon all property brought into the inn by a guest which the innkeeper is bound to receive, as security for the board and lodging on that occasion (but not on prior occasions), and to any other person to whom a chattel is delivered in order that he do some work upon or perform some service with respect to it, provided its value is increased by such work or service. Such liens give a right to hold until the claim is paid, but not to sell for payment. Strictly, such a sale can only be had by foreclosure in court. Statutes now give liens also to stable keepers for the keep of horses, and to persons who take animals for pasturage (called "agisters"), and in many diverse cases of the sort. These statutory liens may usually be foreclosed by notice to the debtor and public sale, as in case of a pledge. If the lien holder gives up possession, he loses his lien, and can only sue for the debt.

Finding Chattels.—One who finds a lost chattel (even if on the land of another, provided he is there rightfully at the time) acquires a right to take and hold possession against every one except the owner. He must deliver to the owner, and has no right to hold for expenses incurred or for a reward, unless a definite sum has been offered by way of reward, in which case he can hold for that sum. If a finder loses, a second finder must restore to the former, subject to the paramount right of the owner. An important distinction exists between lost chattels and those that are merely mislaid. An article is lost when, without intending it, the owner has let it get out of his control or possession. If he puts it in a place which is in the custody or control of another intentionally, and then forgets to remove it, the person in charge of such place has the right to hold it, and another cannot claim the right to take possession of it as a finder.

Real Property: Conveyancing.—The law of real property is the most technical and difficult part of our legal system. Hence, unless one is sure that he knows what he is about, it is very unwise for the layman to do anything of consequence involving a point of real property law without the advice of a lawyer. It is particularly necessary to remember that rights and interests in land are governed by the law of the place where the land is situated, and that the laws of the several states differ greatly in many important details in the law of real property. One should not assume that rules with which he is familiar in his own locality will govern estates in land in other jurisdictions. Conveyancing blanks adapted to local requirements may be had of stationers almost everywhere. Hence it would subserve no useful purpose to insert forms here, especially as the practice of different jurisdictions varies so greatly. But a few suggestions and cautions may be of use.

Forms and Conveyancing Blanks.—Care should be exercised in the selection of blank forms of conveyances. There is often a great difference in forms, and one ought never to fill out a form and assume that it will suffice without first reading it very carefully, unless it is one with which he is familiar. Many clauses which are highly desirable in such instruments as mortgages, for instance, will not be found in every blank. It is wise also to look a blank over before using it unless one is familiar with it, in order to avoid mistakes in filling it out. Never abbreviate. Neither the names of parties nor the description of the property should be abbreviated. Avoid also erasures, alterations, and interlineations. They are dangerous and may be fatal to some subsequent use of the instrument which may be desired. Draw it over rather than erase or alter.

Deeds.—Title to freehold estates in land (i. e., for life or in fee simple, that is, to one and his heirs and assigns forever) can only be transferred by a formal conveyance, which takes place to-day by execution and delivery of a deed. Except where private seals are abolished (see CONTRACTS, *supra*), the deed must be under seal. It takes effect when it is delivered, i. e., when the grantor (person who conveys) puts it out of his control with the intention that it operate. He may deliver it upon condition (technically *in escrow*), so that it is beyond his control, and yet will not be turned over to the grantee or will not operate till the condition is performed. A deed which releases or conveys the interest or estate of the grantor without any covenant or covenants as to title is generally called a quit-claim deed. One which contains covenants warranting the title is generally called a warranty deed. The covenants in a warranty deed not only subserve the purpose of assuring the grantor's title, but they also operate to transmit to the grantee or his successors in interest any title which the grantor acquires afterwards, unless he reacquires the title he warranted. Hence a warrranty deed is much to be preferred.

In describing the parties, the first name of grantor and grantee ought to be given in full, as, if litigation ensues, it may be essential to know the full name. If in the chain of title the grantor is described by his initials, it is better to have him make the conveyance by his full name and add a recital to show that he is the person referred to by the initials, as "John Doe, described in a certain conveyance from ..... to ....., dated ....., and recorded in ....., as J. Doe. It often happens that errors creep into conveyances, and that the name under which the title is held is not the real name of the grantor. In such case it is best to describe him by his true name, and refer to the prior conveyance and the description therein as illustrated above. The residence of grantor and grantee respectively ought also to be inserted carefully. While this is in no way essential, it is often highly convenient subsequently when some claim arises with respect to title.

Great care should be taken to have the description of the property complete, certain, and accurate. Avoid such crude and ambiguous descriptions as "the east ten feet of lot one," or "ten feet off of lot two." If it is not possible to describe by reference to a plat or government subdivision, so that the tract must be bounded, always begin at a known point or at a point on a known line, or, if that is impossible, at a point located by course and distance from two known points. So far as possible, run along known lines, stating direction and distance, and, where this cannot be done, wherever possible run parallel to known lines, stating the line to which you run parallel, the direction and the distance. Be careful to see that your boundaries connect. Remember that, in case of discrepancy, monuments and known points prevail over distances, and also that, in general, where a highway or stream is described as a boundary, or a line is run along a stream or highway as a boundary, the middle of the stream or highway is understood. If the parties intend otherwise, care should be taken to make their intention manifest.

Where witnesses are required, be sure that they are disinterested. If different grantors sign at different times, the witnesses ought to indicate whose signature they attest.

With respect to acknowledgment, the following points are important: It should be taken by a magistrate authorized to take it; the magistrate should not be beneficially interested in the conveyance in any way; he should be careful to distinctly ask each grantor if the conveyance is his voluntary act and deed, otherwise, in many jurisdictions, a conveyance of a homestead may fail; if he has a seal he should affix it to his certificate, and he should sign the certificate officially; if the instrument conveys lands outside of the state, the acknowledgment should always be taken before some officer having a seal. Finally, one should see to it that the signatures conform to the names in the body of the deed.

If covenants or conditions restricting the use of the land are desired, a lawyer should be consulted, as the law on this subject is complex and technical.

Mortgages.—What has been said as to deeds applies also to mortgages, which are a form of deed.

Leases.—The foregoing suggestions apply also to leases. But a few further suggestions may be made. At common law the landlord is not bound to make repairs. Hence, if it is intended he shall repair, there must be a covenant to that effect in the lease. In a lease of land with buildings there should also, in most jurisdictions, be a provision as to rent in case of destruction by fire. There should also be provisions as to sub-letting and assignment. If restrictions upon the use of the property are inserted, in order to make them effective there should be a condition that the term shall cease in case they or any of them are not adhered to.

Abstracts of Title.—The purpose of an abstract is to enable a lawyer passing upon the title to do so conveniently and intelligently. *An abstract is of no particular value unless it is examined and the title approved by some competent person.* It must be borne in mind also that there are a number of very important points which an abstract cannot meet for the reason that the record does not and cannot disclose them. Among these are (1) a forged deed; (2) a false certificate of acknowledgment upon conveyance of a homestead; (3) insanity of a grantor; (4) false returns of service in judicial proceedings; (5) the possibility that there are persons in possession whose claims are not of record. These are not all of equal importance in all jurisdictions. But in one jurisdiction or another each one might be fatal.

Landlord and Tenant.—In order to be liable to pay rent, or for the use and occupation of land, one must be occupying as tenant. One who is in possession claiming adversely cannot be held for rent. The remedy against him is to sue for the profits he has received while wrongfully in possession. One may be a tenant, however, without a formal lease, if he is in possesion in subordination to and acknowledging the title of the landlord. The most important incidents of the relation of landlord and tenant are: (1) that the tenant is estopped to deny the landlord's title, that is, having entered as tenant, he cannot assert any claim of ownership or title adverse to the landlord or claim to hold under a different landlord, no matter how well founded the claim may be, without first giving up possession; and (2) that every letting carries with it by implication a covenant on the part of the lessor that the lessee shall quietly enjoy the premises let, that is, that neither the lessor nor any one claiming under or adversely to him shall evict the lessee. The eviction may take place by actual ouster or by depriving the lessee of the use of a substantial part of the demised premises. In case of such an eviction the lessee may sue the lessor for damages, or he may surrender his term. Except in case of eviction, the lessee cannot surrender without the assent of the lessor. Rent is also an incident of the relation. If none is provided for, and it is not intended that the lessee shall hold gratuitously, he will be liable for the reasonable value of use and occupation from the time he took possession. For the lease of itself gives no estate. It merely gives a right to enter on the land and get possession. When possession is taken under the lease, the lessee acquires an estate. Usually rent is provided for by covenants in the lease. In such case, the covenants provide when it is to be given and when it is payable.

Tenancies may be for years, that is, for a definite period of a year or longer, at will, that is, so long as the parties wish, or periodical, that is, for a certain period, as a month, a quarter, or a year, and then for successive like periods until terminated by notice. A tenancy for a definite, fixed period comes to an end by its own limitation when the period elapses. No notice is necessary. A tenancy at will terminates whenever either party so notifies the other, or does any act manifestly inconsistent with the tenancy, or dies. A periodical tenancy may be terminated by notice given by either party. If from week to week, or month to month, or quarter to quarter, notice must be given at or prior to the beginning of a new period to terminate the tenancy at the end of that period. Where it is from year to year, six months' notice suffices at common law, but this has been altered in some jurisdictions by statute. Tenancies may terminate also, under provisions of the lease, for failure to pay rent, for breach of covenant as to use of the land, and the like, if the landlord enforces the forfeiture. Statutes usually provide to-day that a tenant whose rent is in arrears may be treated as holding over his term.

A tenant who holds over his term is called a tenant at sufferance. If, however, he holds over with the consent of the landlord, he is held to be a tenant upon the same conditions as those in the prior lease. Where one is tenant, but no term is specified, he is considered a periodical tenant, according to the nature of the property and custom with respect thereto. In case of farms, which are usually rented by the year, he would be held a tenant from year to year. In case of houses, which are usually rented by the month, a tenancy from month to month would be presumed.

A tenant is liable for damages, and, if the lease so provides, to forfeiture of his term, if he commits waste, that is, if he destroys or permanently alters, without the consent of the landlord, any appurtenance to the land to the injury of the reversion. He may, however, before or at the end of his term, remove trade, ornamental, or domestic fixtures, which he has placed thereon during the tenancy, if he can do so without destroying them or injuring the land. If he accepts a new lease, after having put on such fixtures, he should be careful to expressly reserve the right to remove them.

Wills.—No one ought to attempt to draw any but a very simple will without legal advice. But the following suggestions and cautions may be of use:—

1. If there is any room for dispute as to the sanity of the testator (person who makes the will), care should be taken to fortify against litigation, not only in the scheme of disposition of the estate, but by seeing to it that adequate proof is at hand as to the condition of the testator at the time the will was made.

2. If the circumstances are such that undue influence may be claimed, great care should be taken to meet such claim. The witnesses should be persons whose integrity is not open to question, and who will carry weight with a jury; and the testator should make a clear and explicit statement to them, in a manner in which they will not be likely to forget, and under circumstances precluding all inference that the testator is under compulsion or coercion at the time.

3. Uncertainty in gifts and in descriptions must be carefully avoided. The will cannot be reformed. The testator will be dead when questions arise under it, and oral evidence of what he meant will not be admissible. Hence one should be absolutely sure of all descriptions, both of persons and of property.

4. Remember that property must be given to some one, either specifically or by a residuary gift (i. e., gift of all that remains after specific gifts). Mere exclusion of an heir without a gift to some one else will accomplish nothing.

5. Bear in mind that shares or gifts may lapse by death of the donees before the gifts take effect, and make proper provision therefor.

6. If a paper or document is referred to, and its provisions are to be part of the will, *it must be in existence* when the will is made, and *must be identified* clearly.

7. There ought always to be a gift of the residue of the estate.

8. If there is any reason to suspect a prior will has been made, insert a clause revoking all prior wills. It is safer to insert such a clause in all cases.

9. *Do not alter the instrument after execution.* If a change is desired, re-execute, or execute a codicil.

10. The witnesses ought to be thoroughly disinterested, clear-headed persons, who will be believed by a jury in case of contest. No one should be a witness who benefits under the will in any way.

11. As a contest by disappointed persons, who, if there was no will, would take as heirs or next of kin, is a possibility, if not a probability, see to it that beneficiaries under the will, who will be charged with undue influence, are not about when it is executed and witnessed.

Form of a Will.—The following short form may be used as a guide:—

I, John Doe, of the city of ....., county of ....., and state of ....., do make this my last will and testament, that is to say:—

1. I appoint Richard Roe of said city of ....., executor of this will.

2. I give and bequeath to John Stiles of ....., county of ....., the sum of one thousand ($1,000.00) dollars.

3. I give and devise to Thomas Jones of said city of ....., all of lot numbered one (1) in block numbered one (1) in said city of .....

4. All the rest and residue of my property, both real and personal, of which I shall die seized or possessed, I give, devise, and bequeath to my wife, Mary Doe.

5. I hereby revoke any and all former wills by me made.

In testimony whereof I have hereunto set my hand this ..... day of ..... 19..

John Doe.

Signed, published, and declared by the above named John Doe as and for his last will and testament, in the presence of us and each of us, who, in his presence, and at his request, and in the presence of each other, have hereunto set our hands as witnesses.

George Jackson,
of ....., County of .....
James Brown,
of ....., County of .....

INTEREST LAWS AND STATUTES OF LIMITATIONS.

States and Territories.	Interest Laws.		Statutes of Limitations.			States and Territories.	Interest Laws.		Statutes of Limitations.		
	Legal Rate.	Rate Allowed by Contract.	Judgments, Years.	Notes, Years.	Open Accounts Years.		Legal Rate.	Rate Allowed by Contract.	Judgments, Years.	Notes, Years.	Open Accounts Years.
	Per ct.	Per ct.					Per ct.	Per ct.			
Alabama	8	8	20	6*	3	Nebraska	7	10	(k)5‡‡	5	4
Arizona	6	10	10	5	3	Nevada	7	Any rate.	6	6	4
Arkansas	7	Any rate.	5	5	3	New Hampshire	6	6	20	6	6
California	7	Any rate.	5	4†	2	New Jersey	6	6	20	6	6
Colorado	8	Any rate.	20	6	6	New Mexico	6	12	7	6	4
Connecticut	6	Any rate.	(o)	(e)	6	New York	6	6††	20(n)	6	6§§
Delaware	6	6	20	6‖	3	North Carolina	6	6	10	3*	3
Dist. of Columbia	6	10	12	3	3	North Dakota	7	12	10	6	6§§
Florida	8	10	20	5‖	4	Ohio	6	8	15(p)	15	6
Georgia	7	8	7	6‖	4	Oklahoma	7	12	(k)5(h)	5	3
Idaho	7	12	7	5	4	Oregon	6	10	10	6	6
Illinois	5	7	20	10	5	Pennsylvania	6	6	5(f)	6‖	6
Indiana	6	8	20	10	6	Rhode Island	6§	Any rate.	20	6	6
Iowa	6	8	20 (d)	10	5	South Carolina	7	8	20	6	6
Kansas	6	10	5	5	3	South Dakota	7	12	10(l)	6	6
Kentucky	6	6	15	15	5(a)	Tennessee	6	6	10	6	6
Louisiana	5	8	10	5	3	Texas	6	10	10‡‡	4	2
Maine	6	Any rate.	20	6(c)	6§§	Utah	8	Any rate.	8	6	4
Maryland	6	6	12	3	3	Vermont	6	6	8	6	6§§
Massachusetts	6	Any rate.	20	6	6	Virginia	6	6	20	5*	2¶
Michigan	5	7	10	6	6	Washington	6	12	6	6	3
Minnesota	6	10	10	6	6	West Virginia	6	6	10	10	5
Mississippi	6	10	7	6	3	Wisconsin	6	10	20(i)	6	6
Missouri	6	8	10	10	5	Wyoming	8	12	21	5	8
Montana	8	Any rate.	10 (b)	8	5						

*Under seal, 10 years. †If made in State; if outside, two years. §Unless a different rate is expressly stipulated. ‖Under seal, 20 years. ¶Store accounts; other accounts, three years; accounts between merchants, five years. ††New York has by a recent law legalized any rate of interest on call loans of $5,000 or upward, on collateral security. ‡‡Becomes dormant, but may be revived. §§Six years from last item. (a) Accounts between merchants and consumer, two years. (b) In courts not of record, five years. (c) Witnessed, 20 years. (d) Twenty years in Courts of Record; in Justice's Court, 10 years. (e) Negotiable notes, six years; non-negotiable, seventeen years. (f) Ceases to be a lien after that period. (h) On foreign judgments, one year. (i) Is a lien on real estate for only 10 years. (k) And indefinitely by having execution issue every five years. (l) Ten years foreign, 20 years domestic. (n) Not of record, six years. (o) No limit. (p) Foreign. Domestic, five years.

Penalties for usury differ in the various States.

Arizona, California, Colorado, Oklahoma, Maine, Massachusetts (except on loans of less than $1,000), Montana, Nevada, Rhode Island, Utah, and Wyoming have no provisions on the subject.

Loss of *principal and interest* is the penalty in Arkansas and New York.

Loss of principal in Delaware and Oregon.

Loss of interest in Alabama, Alaska, District of Columbia, Florida, Idaho, Illinois, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, North Carolina (double amount if paid), North Dakota (double amount if paid), Oklahoma Territory, South Carolina, South Dakota, Texas, Virginia, Washington (double amount if paid), Wisconsin, and Hawaii.

Loss of excess of interest in Connecticut, Georgia, Indiana, Kansas, Kentucky, Maryland, Missouri, New Hampshire (three times), New Mexico, Ohio, Pennsylvania, Tennessee, Vermont, and West Virginia.

Interest.—In nearly all jurisdictions it is allowed by law to demand interest on all overdue accounts calculated at a fixed rate from the time the account became due. But the usual business procedure is not to demand the interest unless the creditor is forced to sue for his claim.

By "legal rate" is meant the rate which is usually allowed by law when no rate has been agreed upon by the parties, or in cases in which the law allows interest. "Conventional rate" is the highest rate which may be agreed upon by contract. In Ohio, for instance, the legal rate is 6, while the conventional rate is 8.

Limitations.—Laws of limitation affecting the time at which an action may be begun, measured from the time at which a cause for action occurred. Such laws were passed in the reigns of Edward I. and Henry VIII. The law known as the "Statute of Limitations" was passed in 1624 in the reign of James I. This act has been adopted by the states of the Union with very slight modification.

Generally speaking, actions in which the title to real estate is involved, or those based upon a contract under seal, must be brought within 20 years; upon contracts not under seal, within 6 years; and those based upon personal tort, within 2 years. Some states reduce the longer period to 10 years. Many states make short periods in special cases of administrators and executors in order to expedite the winding-up of estates.

In cases of debt a new promise to pay or a payment on account in many states revives the debt, and the period of limitation would be calculated from the last payment or from the date of the new promise to pay executed in writing. The defense of limitation must be pleaded in the courts of most of the states to be effective.

Judgment.—A temporary or final decision or adjudication of the rights of the parties in an action or a proceeding before a court of justice. This judgment expires or becomes dormant in the states as indicated in the table, and in some states may be revived from time to time. Other modifications are also noted there.

Usury.—Any excess of interest over and above that which is established by law. In some states, as shown above, penalties for usurious rates of interest are provided. When the fact is shown that interest beyond the legal rate has been taken, no plea can justify it. Where a contract has been made involving the payment of a higher rate of interest than the legal rate, no action for usury would lie unless the contracted rate exceeds that allowed by contract.

EIGHT-HOUR LAWS.

ARIZONA.—Eight hours constitute a day's work in all mines and underground workings.

ARKANSAS.—Eight hours of labor constitute a day's work on public roads, highways, and bridges.

CALIFORNIA.—Eight hours of labor constitute a day's work, unless it is otherwise expressly stipulated by the parties to a contract. The time of service of all laborers, workmen, and mechanics employed upon any public works of, or work done for, the State, or for any political sub-division thereof, whether the work is to be done by contract or otherwise, is limited and restricted to eight hours in any one calendar day, and a stipulation that no workman, laborer, or mechanic in the employ of the contractor or sub-contractor shall be required or permitted to work more than eight hours in any one calendar day, except in cases of extraordinary emergency, shall be contained in every contract to which the State or any political sub-division thereof is a party.

COLORADO.—Eight hours constitute a day's work for all workingmen employed by the State, or any county, township, school district, municipality, or incorporated town, and for workingmen in all underground mines or workings and in smelting and refining works.

CONNECTICUT.—Eight hours of labor constitute a lawful day's work unless otherwise agreed.

DELAWARE.—Eight hours are a legal day's work for all municipal employees in the city of Wilmington.

DISTRICT OF COLUMBIA.—Eight hours constitute a day's work for all laborers or mechanics employed by or on behalf of the District of Columbia.

HAWAII.—For all mechanics, clerks, laborers, and other employees on public works and in public offices eight hours of actual service constitute a day's work.

IDAHO.—Eight hours' work constitutes a lawful day's work on all State, county, and municipal works.

ILLINOIS.—Eight hours are a legal day's work in all mechanical employments, except on farms, and when otherwise agreed; does not apply to service by the day, week, or month, or prevent contracts for longer hours. Eight hours constitute a day's labor for persons assessed to work on public highways.

INDIANA.—Eight hours of labor constitute a legal day's work for all classes of mechanics, workingmen, and laborers, excepting those engaged in agricultural and domestic labor. Overwork by agreement and for extra compensation is permitted. The employment of persons under 14 years of age for more than eight hours per day is absolutely prohibited.

IOWA.—Eight hours constitute a day's labor on public roads.

KANSAS.—Eight hours constitute a day's work for all laborers, mechanics, or other persons employed by or on behalf of the State or any county, city, township, or other municipality.

KENTUCKY.—Eight hours constitute a day's work on public roads.

MARYLAND.—No mechanic or laborer employed by or on behalf of the city of Baltimore shall be required to work more than eight hours as a day's labor.

MASSACHUSETTS.—Eight hours shall constitute a day's work for all laborers, workmen, and mechanics employed by or on behalf of any city or town in the Commonwealth upon acceptance of the statute by a majority of voters present and voting upon the same at any general election.

MINNESOTA.—Eight hours constitute a day's labor for all laborers, workmen, and mechanics employed by or on behalf of the State, whether the work is done by contract or otherwise.

MISSOURI.—Eight hours constitute a legal day's work. The law does not prevent an agreement to work for a longer or a shorter time and does not apply to laborers and farmhands in the service of farmers or others engaged in agriculture. It is unlawful for employers to work their employees longer than eight hours per day in mines. Eight hours are a day's labor on highways.

MONTANA.—Eight hours constitute a legal day's work for persons engaged to operate or handle any first-motion or direct-acting hoisting engine or any geared or indirect-acting hoisting engine at any mine employing fifteen or more men underground when the duties of fireman are performed by the person so engaged; also for any stationary engineer operating a stationary engine developing 50 or more horse-power when such engineer has charge or control of a boiler or boilers in addition to his other duties. The law applies only to such steam plants as are in continuous operation or are operated 16 hours in each 24 hours, and does not apply to persons running any engine more than eight hours in each 24 for the purpose of relieving another employee in case of sickness or other unforeseen cause. Eight hours constitute a day's labor upon roads and highways.

NEBRASKA.—Eight hours constitute a day's work on public roads and on all public works in cities of the first class.

NEVADA.—For labor on public highways, in underground mines and smelters, and on all works and undertakings carried on or aided by the State, county, or municipal governments, the hours of labor are fixed at eight per day.

NEW MEXICO.—Eight hours are required as a day's labor on public roads and highways.

NEW YORK.—Eight hours constitute a day's work for all classes of employees, except in farm or domestic labor. Overwork for extra pay is permitted, except upon work by or for the State or a municipal corporation, or by contractors or sub-contractors therewith. The law applies to those employed by the State or municipality, or by persons contracting for State work, and each contract to which the State or a municipal corporation is a party shall contain a stipulation that no workman, laborer, or mechanic in the employ of the contractor, sub-contractor, etc., shall be permitted or required to work more than eight hours in any one calendar day, except in case of extraordinary emergency.

OHIO.—Eight hours shall constitute a day's work in all engagements to labor in any mechanical, manufacturing, or mining business, unless otherwise expressly stipulated in the contract.

OKLAHOMA.—Eight hours constitute a day's labor on public highways.

OREGON.—Eight hours constitute a day's labor on public roads.

PENNSYLVANIA.—Eight hours of labor shall be deemed and held to be a legal day's work in all cases of labor and service by the day where there is no agreement or contract to the contrary. This does not apply to farm or agricultural labor or service by the year, month, or week. Eight hours out of the 24 shall make and constitute a day's labor for all mechanics, workmen, and laborers in the employ of the State or any municipal corporation therein, or otherwise engaged on public works; this shall be deemed to apply to mechanics, workingmen, or laborers in the employ of persons contracting with the State or any municipal corporation therein, for the performance of public work.

PORTO RICO.—No laborer compelled to work more than eight hours per day on public works.

SOUTH DAKOTA.—For labor on public highways a day's work is fixed at eight hours.

TENNESSEE.—Eight hours shall be a day's work upon the highways.

TEXAS.—Eight hours constitute a day's work on public highways.

UTAH.—Eight hours constitute a day's work upon all public works and in all underground mines or workings, smelters, and all other institutions for the reduction or refining of ores.

WASHINGTON.—Eight hours in any calendar day shall constitute a day's work on any work done for the State, county, or municipality. In cases of extraordinary emergency overtime may be worked for extra pay.

WEST VIRGINIA.—Eight hours shall constitute a day's work for all laborers, workmen, and mechanics who may be employed by or on behalf of the State.

WISCONSIN. In all manufacturing or mechanical business where there is no express contract a day's work shall consist of eight hours; this not applying to contracts by the week, month, or year. In all factories, workshops, or other places of manufacturing, children and women are limited to eight hours daily. Also the day's limit on public highways.

WYOMING.—Eight hours' work constitutes a legal day's work in all mines, State and municipal works.

UNITED STATES.—Eight hours shall constitute a day's work for all laborers, workmen, and mechanics who may be employed by or on behalf of the United States.

CANADA. Eight hours shall constitute a day's work for all laborers, workmen, and mechanics who may be employed by or in behalf of the Dominion of Canada.

REQUIREMENTS FOR THE PRACTICE OF LAW.

Qualifications as to citizenship, personal character, education, and professional attainments required by the several states from those who are admitted to the practice of law.

From reports to the United States Bureau of Education.

ALABAMA.—Actual, *bona fide* citizenship. High moral character as testified to by a member of the profession. Education judged from examination. If the study period is passed in a law office, then the judges of the supreme court must make written examination, except in the case of those graduating from Alabama University.

ARIZONA.—A declaration of citizenship and proof of good moral character are required, but there is no distinction between liberal and professional education. The only thing necessary for admission to practise here, if not armed either with a diploma or license from another jurisdiction, is to stand the examination in open court, and by that show such familiarity with the law as will satisfy the court that the applicant is qualified to take care of a practice.

ARKANSAS.—Must be a citizen of the state and of good moral character. The liberal education feature is left to court which examines. The circuit and supreme courts are the only bodies authorized to grant license to practise law. Applicant must stand satisfactory examination in open court, by the supreme court, and by a committee of three lawyers appointed by circuit court when applicant is examined by that court.

CALIFORNIA.—A declaration of citizenship and certificate from two attorneys of court to which applicant has applied for admission that he possesses the character and attainments that entitle him to admission. Examination in open court after filing certificate from two attorneys.

COLORADO.—Must declare intention to become a citizen three months before applying; must have certificate of good moral character; but no special attention paid to liberal education feature. If not a member of the bar of another state, must pass an examination before supreme court or a committee appointed by it in each judicial district.

CONNECTICUT.—Must be a citizen of the United States, 21 years old, and be of good moral character, and must have graduated from a college or secondary school or have been admitted to a college or preparatory school, or passed an examination before committee, for which last he must pay a fee of $5.00. Must have studied law after arriving at the age of 18 for two years, if a college or law school graduate; otherwise, for three years in a law school or under competent professional instruction in the office of a practising attorney or with the judge of the superior court or both, of which period one year, at least, must be spent in this state. Applicants shall be required to pass a satisfactory examination, before a standing committee of 15, upon the law of pleading, practice, and evidence, constitutional law, the law of real and personal property, contracts, torts, equity, criminal law, wills, and administration, corporations, partnership, negotiable paper, agency, bailments, domestic relations, and such additional subjects as committee shall deem advisable.

DELAWARE.—Must be a resident of the state and of "fair" character, and must have a general knowledge of English and American history, mathematics, English grammar, and Latin. A legal course in a law office is not necessary. All applicants for admission, except practising lawyers of other states, are required to study three years under direction of a lawyer or a judge of the state. Examination is made by a committee of the bar.

FLORIDA.—Must satisfy judge that he is 21 years of age, and of good moral character. Shall be examined by the judge to whom application is made or a committee of two appointed by judge.

GEORGIA.—Must be a citizen of the circuit wherein he makes application and of good moral character, as shown by a certificate of two attorneys known to court. Must undergo examination before committee appointed by court on common law, pleading, and evidence, equity, and equity pleading and practice, Code of Georgia, United States and State Constitutions, and the rules of court. Diplomas of certain law schools in Georgia will obviate necessity of examining candidate.

IDAHO.—Must be a citizen of the United States; nothing required in the way of liberal education. He must have a knowledge of the law; it is immaterial how he gets it. A committee appointed by court ascertains fitness.

ILLINOIS.—Must make affidavit that he is of age, a citizen of the state, and a certified transcript from a court of record in this state showing that he is a man of good moral character. Nothing required as to liberal education. Every applicant to practise law, except those who apply for admission upon a license granted in another state, or upon a diploma issued by a law school in the state, shall present to one of the appellate courts proof that he has studied law three years, the same studies prescribed by the regularly established law schools in the state, or a course equivalent thereto, naming the books studied, under the direction and supervision of one or more licensed lawyers or firms of lawyers, and that the applicant has submitted to satisfactory examinations by such lawyer or lawyers at convenient intervals during such period of study, covering progressively the entire course studied, such proof to consist of the affidavit of the applicant and also of the certificate or certificates of the lawyer. Examination is held in open court.

INDIANA.—Every person of good moral character, being a voter, shall be entitled to admission to practise law in all courts of justice. (Constitution, Art. VII., Sec. 21.) From the letter of the attorney general, Honorable William A. Ketchum: The words, "being a voter" has been held by the courts to have no limitation in excluding those who are not voters, and women are admitted to practise. The only substantial requirement is that the applicant shall be of good moral character, and at times this may not be very rigidly insisted upon. It seems to be the theory that it is not very important who is admitted to practise law, as, after he has been admitted to practise if he does not know enough to justify his admission, he will not get any practice anyhow.

IOWA.—Must be a citizen (of the state) and of good moral character. There is no provision regarding a liberal education, but the want of it is considered in determining the applicant's qualifications. Must pursue a regular course in the study of law for at least two years in the office of a practising attorney of this state, or a course of two years of 36 weeks each in some reputable law school in the United States. Examination is conducted by three members of the bar, one of whom must be attorney general. The written questions are prepared by the supreme court; the oral examination is conducted in open court.

KANSAS.—Any person being a citizen of the United States, who has read law for two years, the last of which must be in the office of a regularly practising attorney, who shall certify as to the good character and domicil of the applicant, after passing a satisfactory examination before any district court of the state, and taking the prescribed oath, shall be admitted to practise. Graduates of the School of Law of the University of Kansas are admitted to practise in the district and inferior courts without further examination.

LOUISIANA.—Must be citizen of state; present certificate of good moral character. Must present certificate that two years have been spent in study of law. The court will not be satisfied with the qualifications of a candidate in point of legal learning unless it shall appear that he is well read in the following course of studies at least: Constitution (Story), Law of Nations (Vattel or Wheaton), History of the Civil Law in Louisiana, Louisiana Civil Code, Code of Practice, General Statutes, Institutes of Justinian, Domat's Civil Law, Pothier on Obligations, Blackstone's Commentaries (fourth book), Kent's Commentaries, Mercantile Law (Smith), Insurance (Wood), Negotiable Paper (Story, or Parsons and Daniel), Evidence (Greenleaf, Starkie, or Phillips), Crimes (Russell), criminal procedure (Bishop), and the Jurisprudence of Louisiana.

MAINE.—Nothing in the way of citizenship or liberal education, but character must be satisfactory to justice presiding at time of examination. Must have studied law two years in a lawyer's office or law school, and must be vouched for by the member of bar with whom the student has read. The examining committee is composed of three members of the bar in each county.

MARYLAND.—Must have been a citizen two years (of state), and be of good moral character. No liberal education required by law. Must have been a student of law for the two years immediately preceding his application, and must be examined by court, if not a graduate of a law school in state. The court selects the examining committee.

MASSACHUSETTS.—Must be a citizen of the state, or have declared his intention to become such, and must be of good moral character. Undoubtedly, applicant's command of English, as shown in examination papers, is of weight. Must pass a thorough examination.

MICHIGAN.—Must be a resident in the state, a citizen of the United States, and of good moral character (affidavit of at least two members of the bar of the state in good standing). The board of examiners will regard applicants who have received bachelors' degrees from any reputable college or university as having *prima facie* the requisite general educational qualifications for admission to the bar. So also as to graduates of Michigan normal or high schools, or other reputable institutions of similar character. Recent first grade teachers' certificate will also be accepted. Otherwise applicant must pass examination, especially in arithmetic, grammar, elementary algebra, general American and English history, civil government, composition and rhetoric, and English literature. If the professional examination papers of a college or other graduate show deficiencies in education, the writer will be subject to examination. Graduates from law department of Michigan University or Detroit College of Law, both having a three years' course, are admitted to bar on their diploma. Others must have studied law for three years previous to applying for admission, which shall be conditioned on the applicant's answering correctly 70 per cent. of the questions asked him in a written and oral examination.

MINNESOTA.—Applicant must present his affidavit that he is of age and is a citizen of the United States, or has declared his intention to become such. Also affidavits from two practising attorneys that he is a person of good moral character. Board shall examine applicants in such branches of general education as it may deem expedient. Must be examined by state board of examiners in law of real property, conveyances and trusts, equity jurisprudence, pleading and practice, common law, statute law, code pleading and practice, constitutional law, international law, criminal law, contracts, sales, bailments and negotiable instruments, landlord and tenant, insurance, partnership, agency, suretyship, frauds, damages and liens, torts, domestic relations, executors, administrators, and wills. Attorneys of five years' standing from any other state or territory of the United States or District of Columbia may, in the discretion of the board, be admitted without examination.

MISSOURI.—Must be an actual resident and of good character. No particular qualifications as to liberal education. Graduates of the St. Louis, Kansas City, and Columbia law schools are exempted from examination. Others are required to pass an examination in open court.

MONTANA.—Must be a resident of the United States, or have made a *bona fide* declaration of his intention to become such, and that he is of age; must have testimonials of good moral character, and have studied law for two years, as certified to by two reputable counselors at law. The examination is conducted in open court.

NEBRASKA.—Must be a resident, of age, of good repute, and have studied law for two years. Must at least have a good common school education, which is judged from his composition and spelling at examination. Graduates of the College of Law of the University of Nebraska shall be admitted, as far as professional learning is concerned, without examination. Others are examined by court.

NEVADA.—Resident of the state and of good moral character. A general education only required. Familiarity with the various branches and general practice of the law required, and to this end study in law office is desirable, although not required. The examination is by court or committee.

NEW JERSEY.—Must take the oath of allegiance, be of age, and of good moral character. Must have served a clerkship of four years with some practising attorney of the state, unless he is a graduate of some college or university in the United States, when his clerkship may be acquitted in three years. During the clerkship he must not have been engaged in any other business incompatible with the full and fair *bona fide* service of his clerkship. No person shall be recommended for license as a counselor at law in this state, unless he first submit himself to examination and give satisfactory evidence of his knowledge of the principles and doctrines of the law, and of his abilities as a pleader, nor shall any be admitted to such examination until he shall have practised as an attorney for three years at least. The examination for attorneys and counselors shall be both written and oral. The examining committee is composed of six counselors, two going out each year.

NEW MEXICO.—Must be a citizen of the United States or have declared intention to become such, of good moral character, and *bona fide* resident of New Mexico. Must undergo an examination in open court.

NEW YORK.—Must be a citizen and present certificate of good moral character. Liberal education is required. For college graduates two years' study of law is required (for others, three years) either in law school or in office. There is a state board of law examiners.

NORTH CAROLINA.—One year residence in the state required, as also a certificate of good moral character, signed by two members of the bar. All must undergo an examination and must have read law in a law office or in a law school for 12 months at least. Supreme court conducts examination.

NORTH DAKOTA.—Must be a resident, of good moral character. All are examined, but applicants must have read law in an office or studied in some reputable law school for two years (36 weeks of session being taken as a year). Supreme court examines applicants.

OHIO.—Must be a citizen of the United States or have declared intention, have resided one year in state, and be a person of good moral character. Nothing in the way of liberal education. All must pass an examination, to which those only are admitted who have studied law three years either in an office or in a law school. Supreme court appoints a committee of nine members to examine applicants.

OKLAHOMA.—Must possess a good moral character. Must have acquired the requisite learning. This fact is ascertained through examination by the court. Applicant is examined in open court by committee.

PENNSYLVANIA.—He must be a citizen of the United States and of a good moral character as certified to by two persons. He must have a good English education and a knowledge of the elements of Latin as evidenced by examination. In most counties the rules of court require a two or three years' course of study (prior to final examination, by a committee) in the office of a member of the local bar and require at least one year's actual work in an office, even for students of regular law schools.

SOUTH CAROLINA.—Citizenship required. Must be of age and of good moral character. Graduates at the law school of the State University are admitted without examination; others undergo examination in the course of study prescribed by supreme court.

SOUTH DAKOTA.—Must be a resident of the state, of age, and of good moral character. All are required to pass an examination in open court.

TENNESSEE.—Must be of age and of good moral character. The professional attainments of the applicant are ascertained by any two judges.

TEXAS.—Six months' residence in the state, of age, and good reputation. Graduates from the University of Texas are admitted without examination. Others are examined in law by a committee.

UTAH.—Citizen of United States or one having declared intention to become a citizen. Must be of age and of good moral character. All applicants are strictly examined in open court.

VERMONT.—Must have resided in Vermont six months, be of age, and of good moral character. All are examined in open court by a committee of the bar; but applicant must have studied three years in the office of a practising attorney, though not more than two of these years may be spent in attendance at a law school chartered by any state of the United States.

VIRGINIA.—Must have resided in state six months, be of age, and a person of honest demeanor. All are examined by the supreme court of appeals on common law, equity, commercial law, and practice, and the Code of Virginia, but the diploma of a law school duly incorporated by one of the United States "is considered."

WASHINGTON.—Must be a citizen of the United States, have resided in state one year, have a good moral character, and be 21 years of age. The supreme court, by two of its judges, examines as to general learning, but an attorney of the state must certify that applicant has studied law for two years previous to his application and that he believes him to be a person of sufficient legal knowledge and ability to discharge the duties of an attorney and counselor at law.

WEST VIRGINIA.—Must be a citizen, one year a resident of the county, and have a good moral character. All applicants are now examined by the law faculty of the University of West Virginia.

WISCONSIN.—Must be a resident of the state and be of good moral character. Graduates of the law department of the University of Wisconsin are admitted on their diplomas; others are examined by state board of examiners, if they have studied law at least two years prior to the examination.

WYOMING.—Must be a citizen, of age, of good moral character, and learned in the law, all of which must be passed upon by the standing committee on admission of each court.

EXEMPTION LAWS.

ALABAMA. A homestead not exceeding 160 acres of land, or a lot in a city, town or village, with a dwelling house thereon, not exceeding the value of $2,000; personal property to the value of $1,000; may be selected by the debtor; lot in cemetery used as a burial place for family; pew in church; wages to amount of $25 a month. Waiver of exemption is not valid unless joined in by the wife.

ARIZONA. The homestead of the head of a family in the territory, not to exceed $2,500; personal property of every family, $500 besides wearing apparel, and one half month's wages.

ARKANSAS. For single person, personal property in addition to wearing apparel, $200; for head of a family, personal property to the value of $500; for a head of a family outside of any town or city, 160 acres of land not to exceed $2,500 in value or not less than 80 acres without regard to value; in city or town, not exceeding one acre of the value of $2,500, or not less than one fourth of an acre without regard to value; wages of laborers and mechanics for sixty days.

CALIFORNIA. The homestead on which debtor resides to the value of $5,000, if he is the head of a family; if not, to the value of $1,000. Personal property exempt includes chairs, tables, desks, and books, $200; necessary household and kitchen furniture, sewing machine, stoves, beds, etc.; provisions for family for three months, three cows, four hogs, two horses, oxen or mules; seed, grain, and vegetables for sowing, not above $200 in value; tools and implements of husbandry of the debtor, not exceeding the value of $1,000; the necessary instruments of a surgeon, physician, surveyor, or dentist, together with professional library and necessary office furniture; the professional library of attorneys, judges, ministers of the gospel, editors, school teachers, and music teachers, and their necessary office furniture; miner's cabin, not exceeding $500 in value, with all tools and gear necessary for his business, not exceeding $500. Two horses or mules with harness, and the miner's claim worked by him, and not exceeding $1,000 in value, are also exempt.

COLORADO. A homestead consisting of house and lot in town or city, or a farm of any number of acres, in value not exceeding $2,000, is exempt if occupied by a householder and head of a family, provided it has been entered on record as a homestead and so specified in the title. Personal property, including wearing apparel of the debtor and his family, pictures, schoolbooks, library, etc., and household furniture, not exceeding $100; provisions for six months, tools, implements or stock in trade, $200; one cow and calf, 10 sheep and necessary food for six months; working animals up to $200; the library and implements of a professional man up to $300; pew in church and burial sites and one half month's wages, but in no case less than $30. Pensions are also exempt. The head of a family may select personal property to the value of $1,000; others, to the value of $300.

CONNECTICUT. The homestead actually occupied by the owner not exceeding in value $1,000 is exempt. Personal property is exempt as follows: Libraries not above $500 in value; a cow worth $150; 10 sheep, not exceeding in all $150; poultry not exceeding $25 in value; two hogs and 200 pounds of pork; implements of trade, the horse, harness, buggy, and bicycle of a practising physician, and the boat, not exceeding $200 in value, of a person engaged in fishing, and used for that purpose; necessary apparel, bedding, and household furniture; pew in church and lot in burial ground; one sewing machine; wages due and not exceeding $25, and, under conditions, money due from insurance and mutual benefit societies, are also exempt.

DAKOTA (NORTH and SOUTH). A homestead consisting of not more than 160 acres, with buildings and appurtenances thereon, and personal property defined by statute, aggregating in value not to exceed $5,000 (N. D.), is exempted to a householder. A firm can claim but one exemption, not a several exemption for each partner. Tools and implements of a mechanic to the value of $200, books and instruments of a professional man to the value of $600, are also exempt from seizure.

DELAWARE. Family pictures, family Bible, and library; lot in burial ground and pew in church; family wearing apparel and tools and implements necessary to carry on business, the whole not exceeding $75 in value, are exempt from attachment. In addition to the above the head of a family may claim $200 of personal property. In Newcastle county wages of laborers are also exempt. No homestead law. In the county of Kent the amount of exemption is reduced from $75 to $50, and from $200 to $150 on household goods.

DISTRICT OF COLUMBIA. Family wearing apparel; household furniture to the amount of $300; provisions and fuel for three months; tools or instruments necessary to carry on any trade, to the value of $200; library and implements of a professional man or artist not above $300; family pictures and library to the value of $400; one horse, mule, or yoke of oxen; one cart, wagon, or dray, and harness for such team; one cow, one hog, six sheep, farming utensils, with food for team for three months, are exempt from attachment or sale on execution, except for servants' or laborers' wages. There is no homestead exemption.

FLORIDA. A homestead of 160 acres of land, together with improvements, in the country, or a residence and one half acre of ground in a village or city, is exempted to the head of a family; also personal property to the value of $1,000. No property is exempt from sale for taxes or for obligations contracted for its purchase or for the erection of improvements thereon. The wages of every laborer who is the head of a family are also exempt under any process of law.

GEORGIA. Each head of a family, or guardian, or trustee of a family of minor children, and every aged or infirm person, or person having the care and support of dependent females of any age, who is not the head of a family, is entitled to realty, or personalty, or both, to the value in the aggregate of $1,600. Said property shall be exempt from levy and sale by virtue of any process whatever, under the laws of this state, except for taxes, purchase money of the homestead, labor done thereon, or material furnished therefor, or for the removal of incumbrances.

IDAHO. A homestead worth $5,000 is exempted to a householder who is head of a family; either husband or wife may select the homestead. Personal property is also exempted to the value of $300. Exemption does not extend to purchase-money or to mortgages on the property. Any person other than the head of a family is entitled to an exemption of $1,000.

ILLINOIS. A homestead valued at $1,000 is exempted to every householder who has a family; such exemption not covering liabilities for purchase-money or improvement of the homestead. After the death of a householder his family are entitled to the exemption so long as the survivor occupies it, or until the youngest child is 21 years of age. There are also exempted to every person wearing apparel, schoolbooks, family pictures and family Bible, and $100 worth of other property selected by the debtor. In addition to this, $300 worth may be selected by the debtor if head of a family; but such selection cannot be made from any money or wages due; no exemption is allowed when the debt is for the wages of laborer or servant; $50 of wages is exempt to every head of a family if residing with the same.

INDIANA. There is no homestead exemption; any resident householder has exempted real or personal property, or both, to the amount of $600 on any debt founded on contract since May 31, 1879. On debts founded on contracts made previous to that date, exemption is $300. Exemption does not, in any event, affect liens for labor, purchase-money, or taxes.

IOWA. A homestead in country of 40 acres, or in town or city of one half acre, with improvements and buildings to the aggregate value of $500, is exempted to the head of every family. If less than $500 in value, it may be increased to that amount. It is not exempted from execution for the purchase-money thereof, or for debts contracted prior to its acquirement. Upon the death of either husband or wife the homestead passes to the survivor. Professional men are allowed their libraries, instruments, etc., and a team and wagon; printers retain their presses and type to the value of $1,200. The head of a family may claim wearing apparel, tools, a gun, his library, and furniture to the extent of $200 in value. The personal earnings of the debtor for 90 days preceding the execution, certain stock, with food for them for six months, a pew in church and a lot in a burying ground are also exempt. Non-residents and unmarried persons, not being heads of families, can only claim their ordinary wearing apparel and trunk necessary to carry the same to the value of $75.

KANSAS. An independent fortune is exempted in this state. A homestead of 160 acres of farming land, or of one acre within an incorporated town or city, with buildings and improvements thereon, with no limit to value. The head of every family is allowed personal property as follows: the family library, schoolbooks, and family Bible; family pictures and musical instruments in use; pew in church and lot in burial ground; all wearing apparel of the family, beds, bedsteads and bedding, one cooking stove and appendages, and all

other cooking utensils, and all other stoves and appendages necessary for the use of the debtor and his family; one sewing machine, spinning wheel,and all other implements of industry, and all other household furniture not herein enumerated, not exceeding $500 in value; two cows, ten hogs, one yoke of oxen and one horse or mule, or in lieu of one yoke of oxen and one horse or mule, a span of mules or horses; 20 sheep and their wool; food for the support of the stock for one year: one wagon, two plows, drag and other farming utensils not exceeding in value $300; grain, meat, vegetables, groceries, fuel, etc., for the family for one year; the tools and implements of any mechanic, miner, or other workman, kept for the purpose of carrying on his business, together with stock in trade not exceeding $400 in value; library, instruments, and office furniture of any professional man. Residents, not the head of a family, have tools, implements, and stock in trade up to $400. No personal property is exempt for the wages of any clerk, mechanic, laborer, or servant. A lien on the homestead may be created by husband and wife joining in the mortgage.

KENTUCKY. To bona fide housekeepers with a family are exempted from execution and attachment for debt: a homestead to the value of $1,000; two work beasts, or one work beast and one yoke of oxen; two cows and calves; one wagon or cart; two plows and gear; ten head of sheep; provisions for family and provender for stock not exceeding $70 value; the tools and stock of a mechanic who is a housekeeper and has a family, not exceeding $100 in value; libraries or instruments of professional men, which may not exceed in value $500; the wages of a laboring man to the amount of $50, except for house rent and necessaries.

LOUISIANA. A homestead of 160 acres of land, with buildings and improvements thereon, is exempted to the head of a family, if owned and occupied as a residence, together with personal property, the whole not to exceed $2,000; all wearing apparel, implements, stock, etc., with provisions and supplies necessary for the plantation for one year. If the wife own separate property in her own right to the value of $2,000 there is no exemption.

MAINE. Homestead, $500; $100 wearing apparel, bedding, and furniture; $150 library; $300 team; $50 poultry; $100 sewing machine; $10 lumber; cow and heifer, 10 sheep and lambs, plow, wagon, mowing machine, a two-ton boat, the flax, raw and manufactured, from one acre of ground; provisions, fuel, seed, grain, provender for stock, and tools. After the debtor's death his family has the benefit of the exemptions.

MARYLAND. Besides wearing apparel, books, and tools used for earning a living, there is exempt other property to the value of $100. No homestead.

MASSACHUSETTS. Homestead, $800 (must be recorded as such); furniture, $300; sewing machine, $100; library, $50; tools and implements, $100; stock in trade, $100; boats and outfit, $100; one cow, one hog, and six sheep, and wages under $20.

MICHIGAN. Forty acres of land, with improvements, in the country, or house and lot worth $1,500 in town; furniture, $250; library, $150; two cows, five hogs, 10 sheep, team, tools, provisions, and fuel. No exemptions from execution for purchase-money.

MINNESOTA. Eighty acres, with improvements, in country, or lot with dwelling on it, in town; household property, $500; wagon, plows, and farming implements, $300; three cows, 10 hogs, 20 sheep, yoke of cattle, and a horse, or, instead, a pair of horses; one year's provisions, fuel, feed for stock, and seed grain; a miner's or mechanic's tools and stock in trade to $400; the library and instruments of a professional man; $25 in wages of a laboring man, earned within the last 30 days, and, where the debtor is publisher of a newspaper, his complete outfit to value $2,000, and stock $400.

MISSISSIPPI. To householding head of family, 160 acres of land and improvements in country, or house and lot in town, either to value of $3,000; tools and farming implements necessary for two male laborers; library and instruments of professional man to value of $250; two horses or mules or a yoke of oxen; two cows and calves, 10 hogs, 20 sheep; wagon, $100; personal property, $250; one sewing machine; provisions and provender; wages of a laborer, $50 a month.

MISSOURI. To head of family, 160 acres in the country to the value of $1,500, a lot (30 rods) in small town of same value, or lot (18 rods) in city having 40,000 inhabitants, to value of $3,000; 10 choice hogs, 10 choice sheep and their wool, two cows and calves; all necessary farm implements for one man; two work animals and $25 worth of feed; wearing apparel of family; four beds, bedding, tools, and implements of any mechanic; necessary books for professional men and teachers.

MONTANA. House and a quarter acre lot in town, or a farm of 160 acres, neither to exceed $2,500 in value; personal property to the value of $1,400. No exemptions are good against a mortgage, a mechanics' lien, or a claim for purchase-money.

NEBRASKA. Dwelling and 160 acres of land in country, or two adjoining lots in town, value $2,000. If he has no real property, the debtor may retain personal property to value $500. Clothing, furniture, provisions, animals, tools, and other things as per statute, and 90 per cent. wages of laborer. Exemptions are not good against mechanics' lien, mortgage, or purchase-money.

NEVADA. Homestead, $5,000; tools, implements, and other personal property, as per statute; miner's cabin, $500.

NEW HAMPSHIRE. Homestead, $500; $100 furniture; $100 tools; $200 books; $50 fuel and provisions; sewing machine, cook stove, bedding and clothing, one hog, six sheep, one yoke of oxen or one horse, and four tons of hay.

NEW JERSEY. Homestead, $1,000, and $200 household property.

NEW MEXICO. Homestead, $1,000; $10 furniture; $20 tools; $25 provisions.

NEW YORK. Homestead, $1,000; $250 furniture, tools, team, and other personal property; wages, $20.

NORTH CAROLINA. A homestead to the value of $1,000, and personal property worth $500. No exemption is good against taxes, purchase-money, or mechanics' liens.

OHIO. Homestead is exempt to the value of $1,000; if appraised to a higher value, a partition is made, or an appropriate rental is charged. Clothing and necessary furniture are exempted; tools and farming implements to value $100; $50 worth of provisions and three months' wages; one horse or yoke of cattle, harness, and wagon; one cow, two hogs, six sheep, and 60 days' provender, or, instead, $65 in household property; a professional man's books, $100. When resident debtor, being head of a family, has no homestead, he may retain personal property to the value of $500, besides other exempted property.

OKLAHOMA. Exemption to head of a family outside of city or town not to exceed 160 acres; and in a city or town not more than one acre; in addition thereto, certain personal effects and equipment appertaining to the various vocations. These exemptions do not apply to corporations for profit, to a non-resident, or a debtor who is in the act of removing his family from the territory, or who has absconded, taking with him his family. To a single person: wearing apparel, tools, apparatus, and books belonging to a trade or profession; one horse, saddle, and bridle, or one yoke of oxen; current wages for personal service. In certain classes of debts all exemptions are invalid.

OREGON. Homestead 160 acres not in town, $1,500; if in town or city, not to exceed one block, but in no case to be reduced to less than 20 acres nor one lot. Musical instruments, books, and pictures, $75; household effects, $300; clothing, $100, and clothing to each member of the family, $50; team, tools, instruments, library, or whatever is needed in the trade or profession of debtor, $400; 10 sheep, two cows, five hogs, three months' provisions and six months' provender. No exemption is good against a claim for purchase-money.

PENNSYLVANIA. Clothing, books, sewing machine, and $300 worth of other property. Right may be waived. No homestead.

RHODE ISLAND. Furniture and supplies for family, $300; tools, $200; library, $300; wages, $10; clothing; one cow and one hog; debts secured by negotiable paper. No homestead.

SOUTH CAROLINA. Homestead, $1,000; this right cannot be waived. Furniture, wagons, live stock, and tools, to value of $500. Homestead exemption cannot hold against an execution for the purchase-money, a lien for improvements or for taxes. Any person not the head of a family may have clothing, tools, etc., to $300.

TENNESSEE. Only the head of a family can have the benefit of exemptions; $1,000 homestead and a variety of personal property designated by statute, prominent items, being horses, mules, oxen, cows, calves, wagon, tools, lumber, grain, provisions, beds, bedding, furniture, and $30 wages.

TEXAS. Two hundred acres of land with improvements, in the country, or city property to value at time of being designated as homestead (regardless of the value of after improvements) of $5,000; furniture, farming implements, tools, books, five cows and calves, two yoke of cattle, two horses and wagon, a carriage or buggy, 20 hogs, 20 sheep, provision, provender, and many other articles. The exemption of the homestead is not good against taxes, purchase-money, or mechanics' lien; but in this last case the contract must have been signed by both husband and wife. On the death of a husband, the widow and children may have one year's support out of the estate, and if the property be not in such shape as to be exempted by law, enough may be sold to raise an allowance for homestead to value of $5,000 and other property $500. Any person not the head of a family may have exempted clothing, books, horse, bridle, and saddle.

UTAH. Homestead, $1,500; $250 worth of chairs, tables, desks, also musical instruments actually used by the family; necessary house and kitchen furniture, $300; sewing machine, pictures, wearing apparel, farming implements, $300; seed for planting, $200; crops growing or harvested, $200; miner's cabin, $500; also working appliances for same amount.

VERMONT. Homestead, $500; growing crop, clothing, furniture, sewing machine, tools, one cow, 10 sheep, one hog, three hives of bees, poultry, one yoke of oxen or two horses, fuel, provisions, and provender; also the instruments and library of a professional man, $200.

VIRGINIA. The head of a family who is a householder has a homestead exemption to the value of $2,000, which may be in real or personal property, both or either; also clothing, sewing machine, furniture, and animals; books, $100; tools, $100. The value of the exemptions outside of the homestead is varied according to the number in family, and ranges from $50 to $500.

WEST VIRGINIA. Homestead, $1,000, where the property has been granted or devised for the purpose, to the head of a family, or where he has devoted such property to that purpose by having it so recorded; also personal property to value of $200; tools to mechanic, $50.

WASHINGTON. Homestead (must be actually occupied) to the value of $2,000; clothing, books, bedding, and household goods to value of $500; one small boat to value of $50; two cows, five hogs, bees, poultry, fuel, and provisions. To a farmer, two horses, or two yoke of oxen, and farming implements to value of $500. To professional man, library worth $1,000, office furniture, and fuel. To lighterman, his boats, to value of $250. To drayman, his team.

WISCONSIN. Forty acres in the country, or one quarter of an acre in town, with the dwelling thereon; clothing, household furniture, $200; books, two cows, 10 hogs, 10 sheep, one horse, and yoke of cattle, or a pair of horses and mules, farming tools, one year's provisions and provender. To a mechanic, tools $200; professional man, his library, $200; a publisher or printer, his outfit for $1,500. To any head of a family, three months' earnings, not to exceed $60 a month. No exemption good against a mechanics' lien or claim for purchase-money.

WYOMING. House and lot in town or 160 acres of land in the country, either to value of $1,500; tools, team, and stock in trade of mechanic, miner, or other person, $300. Benefit of exemption can only be claimed by a bona fide resident householder.

ONTARIO. The exemptions from execution are, speaking generally: the beds and bedding in ordinary use by the debtor and his family; necessary wearing apparel and a list of domestic utensils necessarily incident to living, not to exceed in value the sum of $150; necessary provender for 30 days not to exceed in value the sum of $40; a cow, six sheep, four hogs, and 12 hens, in all not to exceed the value of $75; tools and implements ordinarily used in the debtor's occupation to the value of $100, or the debtor may elect to receive the proceeds of the sale of such tools up to $100. Under the Free Grants and Homestead Act, there is an exemption from liability for any debt incurred before the issue of the patent and for 20 years from date of location, except where the land itself is mortgaged or pledged or for the payment of taxes.

QUEBEC. The exemptions from execution are: beds, bedding, and bedsteads in ordinary use by debtor and his family; necessary wearing apparel; one stove and pipes, and a number of smaller articles; all necessary fuel, meat, vegetables, fish, flour not more than sufficient for ordinary consumption of debtor and family for three months; four cows, six sheep, four hogs, and food therefor for the winter; tools and implements or chattels ordinarily used in debtor's occupation. No real estate.

NEW BRUNSWICK. Wearing apparel; bedding, kitchen utensils; tools of trade to the value of $100 are exempted.

NOVA SCOTIA. Necessary wearing apparel; beds, bedding, and bedsteads of debtor and his family; household utensils not exceeding in value $20; food enough for 30 days' consumption and not exceeding in value $40; one cow, two sheep, and hay and food therefor for 30 days; tools or chattels ordinarily used in the debtor's occupation to the value of $30. No real estate.

PRINCE EDWARD ISLAND. Necessary wearing apparel and bedding for the debtor and his family; tools and instruments of his trade or calling; £5 in money and his last cow are exempted from execution out of Supreme Court; wearing apparel and bedding of debtor and his family; the tools and implements of his trade; one cook stove and one cow, in all amounting in value to $50, are exempt from process out of County Court.

MANITOBA. Household goods to the value of $500; tools, agricultural implements, and necessaries used by the debtor in his trade, occupation, or profession, to the value of $500; homestead to the extent of 160 acres being the residence of the debtor, the buildings and improvements thereon; or the town residence of the debtor to the value of $1,500, provided that no real or personal property shall be exempt from seizure or sale under execution for the purchase price of the same. A debtor cannot waive his exemption from seizure and sale under execution.

NORTHWEST TERRITORIES. Necessary clothing of the defendant and his family; furniture and household furnishings belonging to defendant and his family to the value of $500; also certain personalty exclusive of the foregoing and homestead not exceeding 160 acres; house and buildings occupied by the defendant, also the lot or lots on which same is situate according to the registered plan, to the extent of $1,500; defendant is entitled to his choice from a greater number of articles from the same class.

BRITISH COLUMBIA. Personal property of debtor to the value of $500 is exempt from execution. No goods or personalty, however, is exempt from seizure in respect to debts contracted in regard to the identical goods. The stock in trade of a merchant is not exempt from seizure although under $500, and it can be sold to satisfy a judgment. Registered homesteads are exempt from execution to the value of $2,500.

PROPERTY RIGHTS OF MARRIED WOMEN.

ALABAMA. Married women may hold all property, real and personal, acquired before and after marriage, as a separate estate not liable for the husband's debts, and it may be devised or bequeathed as by a single woman. This separate estate is liable for debts contracted by the woman before marriage, and for contracts after marriage for articles of comfort and support of family. The wife is entitled to dower of one half of husband's real estate, if he leave no lineal descendants and his estate is not insolvent; if insolvent, then to one third; one third if there are any descendants, provided she has no separate estate; if her separate estate is less than the dower interest would be, she is entitled to as much as would make it equal. Women attain their legal majority at 21, but may marry without consent of their parents at 18.

ARIZONA. Married women may carry on business and sue and be sued in their own names. All property acquired before marriage, and all afterwards acquired, by gift, grant, devise, or inheritance, is separate estate, liable for her own but not for her husband's debts. She may control it and dispose of it in all respects like a single woman. The wife must join in all deeds and mortgages of real estate except unpatented mining claims.

ARKANSAS. Married women have absolute and unqualified right in property of every kind and are not liable for debts or contracts of the husband. But a schedule under oath, and verified by some other reputable person, must be made by the husband and wife, and filed in the recorder's office of the county where the property is, and of the county where they reside. The wife may control her property, may carry on business on her sole and separate account, may sue and be sued, may make a will and may insure her husband's life for her benefit. The widow is entitled to one third part of the estate, unless legally relinquished by her.

CALIFORNIA. All property acquired in any manner before marriage, or afterwards by gift, grant, inheritance, or devise, is wife's separate property, controlled by her and not liable for debts of the husband. The husband's property similarly acquired is not liable for debts of the wife. All property acquired after marriage by husband or wife, except as above, shall be common property, but under the husband's control. Dower and curtesy are abolished, but the survivor takes half the common property after payment of debts and expenses of administration. A married woman may dispose of her separate estate by will without the consent of her husband and insure her husband's life for her benefit.

COLORADO. Married women are treated in all respects, as to their property rights, as if they were single. A wife may carry on trade or business, sue or be sued, contract debts, transfer real estate, and in all ways bind her separate property, without the husband's joining. She may make a will, but cannot bequeath more than half her property away from her husband without his consent in writing. The husband cannot by will deprive his wife of over one half of his property. Dower is abolished. The husband is liable for debts of the wife contracted before marriage to the extent of the property he may receive through her, but no further.

CONNECTICUT. Previous to the year 1877, the husband acquired a right to the use of all the real estate of the wife during her life and if he had a child by her and survived her, then during his own life as tenant by curtesy. By the Act of May 20, 1877, the rights of married women are materially enlarged. Any woman married after that date retains her real estate as if unmarried. She may make contracts, convey real estate, and sue or be sued in regard to any property owned by her at the time of marriage, or afterwards acquired. The estate is liable for her debts, and, jointly with her husband, for debts contracted for joint benefit of both or household expenses. The separate earnings of a wife are her sole property. A surviving husband or wife is entitled to use for life of one third in value of real and personal property legally or equitably owned by the other at the time of death.

DAKOTA (NORTH and SOUTH). Married women may transact business in all respects the same as if unmarried. Neither husband nor wife has any interest in the separate estate of the other. The earnings and accumulations of the wife are her separate property and not liable for the husband's debts nor even for household debts contracted by her as her husband's agent. Her separate property is, however, liable for her own debts, contracted before or after marriage, if such debts are contracted on her own responsibility.

DELAWARE. Married women, married since 1873, retain all real and personal property held at marriage, or since acquired from any person other than the husband, as their separate estate, and not subject to the disposal of the husband or liable for his debts. They may receive wages for personal labor, sue or be sued in respect to their own property as if unmarried; and the rents, issues, and profits of their separate estate are not controlled by the husband. The widow is entitled to one third dower of all the lands and tenements whereof the husband was seized at any time during her marriage, unless she shall have relinquished such right for and during the term of her natural life. She may be an administratrix, and the husband's life may be insured for her benefit if premium does not exceed $150.

DISTRICT OF COLUMBIA. Married women may bequeath, devise, or convey property or interest therein in the same manner as if unmarried. Real or personal property belonging to the wife at marriage or afterwards acquired is separate estate. She may sue and be sued in all matters pertaining to her property, and the husband is not liable for any contracts made by her in respect to her personal estate.

FLORIDA. Married women retain all real or personal property owned at marriage or acquired thereafter, and are not liable for the husband's debts, without his consent in writing and legally executed. In order that it shall be free from his debts, the property must be inventoried and recorded within six months after marriage or subsequent acquirement of the property. The wife may sell and convey all real estate inherited by her the same as if she were unmarried; but her husband must join in all sales, transfers, and conveyances of her property, both real and personal. She is entitled to dower in a life estate in one third of all the real estate of which her husband was seized and possessed at his death or at any time during his life, unless she has relinquished the same; also an absolute one third of his personalty.

GEORGIA. Married women retain as a separate estate all property in their possession at the time of marriage, or afterwards acquired, and are not liable for any debts, defaults, or contracts of the husband. By consent of her husband advertised for four weeks she may become a free trader, in which event she is liable the same as if unmarried. The wife may not bind her estate by any contract of suretyship, either in behalf of her husband or any other person. The widow takes dower in one third of all the lands of which her husband was seized at his death; and wife and children, after the husband's death, are entitled to one year's support from his property, all other claims yielding to this.

IDAHO. All property, both real and personal, owned at marriage or afterwards acquired, by either wife or husband, remains a separate estate. All property acquired after marriage is held in common. Separate property of the wife should be inventoried with the county recorder; the husband has control of it during marriage, but cannot create a lien or encumbrance unless joined by the wife, who is examined separately. If the husband mismanages, or commits waste, the district court may, on application of the wife, appoint a trustee to manage her separate property. Upon the death of husband or wife, half the common property goes to survivor; if no direct descendants, all goes to survivor.

ILLINOIS. Married women may own in their own right realty and personalty, may sue and be sued, contract and incur liabilities, the same as if unmarried; but they may not enter into or carry on any partnership business without consent of the husband, unless abandoned by him or he is incapable of giving assent. Beyond the necessaries, the husband is not liable for debts of the wife, except in cases where he would be jointly liable if the marriage did not exist. The estate of both is liable for family expenses, but the wife's separate earnings are her own. A surviving wife or husband takes one third of all the realty of the deceased, unless relinquished in due form. The husband and wife are put upon the same footing as to dower, and the estate of curtesy is abolished.

INDIANA. Married women retain all realty and personalty owned by them at marriage, or afterwards acquired, and are not liable for the husband's debts. The husband is liable for debts of the wife contracted before marriage only to the extent of the personal property he may receive from or through her, or derive from sale or rent of her lands. She may sell personal property but she may not convey or encumber her real estate unless the husband joins. Suits against her separate estate should be brought in the name of both. A widow takes one third of her deceased husband's real estate in fee simple, free from all demands of creditors, where the estate does not exceed $10,000; where the estate is over $10,000 and under $20,000 she takes one fourth; and one fifth if it exceeds $20,000. She also takes one third of the personalty after payment of debts, and in all cases takes $500, without accounting, and may occupy the dwelling and forty acres of land for one year, rent free.

IOWA. Married women may own in their own right real and personal property acquired by descent, gift, or purchase, may sell, convey, and devise the same, may sue and be sued, make contracts and buy goods in their own name. Wife or husband is not liable for the debts of the other before marriage, or for separate debts incurred afterwards. The wife's earnings are her own, and her note is good against her own estate. Women attain majority at 18, or earlier, upon marriage; a female of 14 may marry. The surviving wife or husband is entitled to one third of the real estate of the deceased, free from all claims of creditors. If they leave no children, survivor takes one half, parents the other half.

KANSAS. Married women have the same property rights as men, and may make contracts, carry on business, sue and be sued, and sell or convey real estate precisely as their husbands; their earnings or profits are their own. A note or indorsement made by a married woman will bind her property the same as if unmarried. Homestead is absolute property of widow and children, and neither wife nor husband may bequeath more than half their property without written consent of the other. If either dies intestate and without children, the entire property goes to the survivor.

KENTUCKY. Married women may hold real or personal property as a separate estate free from the control of the husband or liability for his debts. By petition to the circuit court, in which the husband must join, she may acquire the right to transact business in her own name. Unless dower be barred, forfeited, or relinquished, she takes one third of the real estate and one half of the personal property.

LOUISIANA. Married women may hold and control both real and personal property owned at time of marriage; all property or revenues of separate property acquired by either husband or wife after marriage is held in common, and is divided equally between them at dissolution of the marriage either by death or divorce. The wife may carry on a separate business, but her husband will be bound by her contracts, so long as the community of property exists; she cannot sue without the concurrence of her husband, nor bind herself or her property for his debts. There is no right of dower to the wife.

MAINE. A married woman holds real and personal property, acquired in any way except from the husband, the same as if single. She may make contracts, sue and be sued, and do business in her own name; and her property may be taken to satisfy judgments against her. Her property is liable only for her own debts. She joins husband in a deed selling his property to relinquish dower. He joins with her in selling hers only when such property comes from him. A wife, being abandoned by her husband, may be allowed to take and use his personal property. Dower, life estate in one third of all husband's real property owned during coverture; one half if no children. He has same interest in deceased wife's estate.

MARYLAND. Property acquired by a married woman is her own, controlled by herself, and is free from her husband's debts. She conveys by joint deed with the husband, but devises and bequeaths the same as if single. She may be sued with her husband on joint contracts made by them, and the property of both is equally liable. Dower one third, if they have children; one half, if none.

MASSACHUSETTS. The property of a married woman is managed by herself, and is not liable for her husband's debts. She may make contracts, sue and be sued, and do business in her own name, provided a certificate is filed by her or her husband in the office of the town clerk. Contracts and conveyances between husband and wife are not allowed. Her conveyances of real estate are subject to husband's tenancy by curtesy. A wife cannot make a will affecting her husband's right to one half of the personal property, or his tenancy by curtesy in her real estate, without his written consent. Dower as by common law.

MICHIGAN. Married women own and control property the same as if single. A wife may do business in her own name and make contracts, even with her husband. Her separate property is liable for wrongs committed by her. Widow has dower, but there is for the surviving husband no right of tenancy by curtesy.

MINNESOTA. A married woman holds property in her own name. She may make contracts, and her property is liable only for her own debts. She cannot sell or convey real estate further than a mortgage for purchase money or a three years' lease, without her husband joining her. Contracts between husband and wife are void. The surviving husband or wife keeps the homestead for life.

MISSISSIPPI. A married woman holds property acquired in any manner, and the revenues therefrom, for her own use and free from control or liability of her husband. She may convey and encumber the same as if single, but husband joins in conveyance. She may devise and bequeath. Deed from husband to wife is void as to creditors at time of making it. A wife may not encumber her estate by mortgage or otherwise for her husband's debts; she may do business on her own account the same as if single, and is then liable for her contracts, housekeeping, and family expenses. She joins her husband in conveyance of homestead, but not in that of his other property. Dower in property of which the husband dies seized.

MISSOURI. A married woman controls her own property, and holds it through a trustee, free from liability for her husband's debts. She may make contracts, sign notes, and do business in her own name. She may make a will. She joins her husband in his conveyances to release dower. Her dower is one third for life of all lands owned by husband.

MONTANA. A list of married woman's property filed and recorded saves it from being liable for the husband's debts, except necessaries for herself and children under 18. A married woman may become a sole trader by recording her intention. If she invests more than $10,000 in business she must make oath that the surplus did not come from her husband. The husband is not liable for debts contracted by her in business. She is also responsible for the maintenance of her children. A surviving husband or wife takes one half of deceased's property, if no children; one third if there are.

NEBRASKA. A married woman holds her separate property free from the disposal of her husband and from liability for his debts. She may bargain, sell, make contracts, do business, sue and be sued, all so far as her separate estate may warrant; but she cannot become surety for another, not even being allowed to bind herself for her husband's debts. Property coming to the wife from the husband is not privileged as her separate property.

NEVADA. The separate property of a married woman which is controlled by herself is such as she may have owned before marriage or acquired afterwards by gift, devise, or descent. All property acquired otherwise, by either husband or wife, is common property, and under the absolute control of the husband. On the death of the husband the widow receives one half of the common property.

NEW HAMPSHIRE. A married woman holds property owned before marriage or acquired afterwards, except what may come from the husband, for her own use. She may sell, convey and encumber, devise and bequeath, do business, give notes, sue and be sued. Her contracts are binding, excepting that there can be no contracts or conveyances between husband and wife, nor can the wife become security for her husband. Wife is entitled to dower.

NEW JERSEY. The property owned before marriage, and such as she may acquire afterwards by gift, descent, or bequest, is the sole property of a married woman and is not liable for the husband's debts. She may make contracts, but cannot sell or encumber her real estate without consent of husband. She cannot indorse notes or become security. She joins husband in his conveyances and mortgages. Dower and curtesy.

NEW MEXICO. The separate property of a married woman is what she owned previous to marriage, or what she may inherit. All that she acquires afterwards, and the revenues of her separate estate, go into the common property. The husband has control and management of her separate estate and the common property. There is no dower, but on decease of the husband the wife's private property is first deducted; then she receives one half of the common property, after all debts are paid. If there be no children she has a right to all the common property.

NEW YORK. Married women may have real and personal property, buy and sell, and do business in their own names. A married woman is liable for debts contracted in her own trade or business, or when an agreement or contract has been made for the benefit of her separate property, when, by the terms of such instrument, her separate property is to be charged with the liability. Dower.

NORTH CAROLINA. A married woman's separate property is not liable for her husband's debts. She may devise and bequeath, but must have husband's consent to convey. Unless she be a free trader, she can make no contract other than for personal or family necessities or for payment of antenuptial debts, without the consent of her husband. She becomes a free trader, the husband assenting, by filing her intention. Common law dower and one year's subsistence.

OHIO. The property of a married woman is not liable for her husband's debts; beyond a three years' lease or a contract for the improvement of her real estate, she cannot sell or encumber it without the consent of her husband. If a married woman engages in trade, her separate property is liable for the debts she may then contract, and she may sue and be sued the same as if single. A deserted wife must procure an order from court, by which she shall have all property rights as a *feme sole*. Dower in all real estate owned by husband during coverture.

OKLAHOMA. Neither husband nor wife has any interest in the property of the other. Either may enter into any engagement or transaction with the other, or with any other person, respecting property which either might, if unmarried, subject, between them, to rules which control the actions of persons occupying confidential relations. The wife may,

without consent of husband, convey her separate property. Woman retains the same legal existence and personality after marriage as before, and receives the same protection of her rights as does her husband. She may hold and transfer real and personal property; may buy and sell goods, give notes or other obligations, and sue and be sued, same as if unmarried.

OREGON. A married woman holds her property free from the control or debts of her husband. She may make contracts, buy and sell, and give notes, and her own property will be liable. The husband joins in her conveyances. She may make a will, but it must not interfere with her husband's rights of curtesy

PENNSYLVANIA. The property of a married woman is held as her separate estate, but is chargeable for family necessaries ordered by her. A wife cannot make a contract or conveyance without her husband joining her. By obtaining leave from the court she may have the benefit of her own earnings. She may make a will, saving the husband's right by curtesy. She may deposit money in bank and write checks against it in her own name. Dower, one third of all real estate owned by husband during coverture.

RHODE ISLAND. A married woman's property is held by trustees for her separate use free from her husband's debts. She cannot make contracts or do business. She may make a will subject to husband's right by curtesy.

SOUTH CAROLINA. The property of a married woman cannot be seized for her husband's debts. A married woman can bequeath, devise, and encumber her separate property. She can buy in her own name, and have conveyances made to her, and make contracts, the same as if she were single. A gift from husband to wife is not good against a creditor's claim. Dower rights.

TENNESSEE. A married woman has her separate property free from the husband's control and from liability for his debts. She may encumber, convey, or devise her separate property without being joined by her husband in the deed. Widow has dower in one third of husband's real estate, and a child's share in his personalty. The husband dying intestate, leaving no heirs, the wife inherits all his property.

TEXAS. The property owned by husband or wife before marriage, and what either may acquire afterwards, by gift, devise, or descent, is community property. The husband controls the common property and the wife's separate estate. The common property is liable for the debts of either, and the husband may dispose of it. At the death of either, the survivor takes one half and the children the other half of the common property. The husband joins wife in conveyance of her separate property. She joins him in conveyance of homestead. A married woman cannot do business in her own name, but she may become security for her husband by mortgaging her separate estate.

UTAH. A married woman's separate property is held, managed, controlled, and disposed of by herself. A wife may carry on business, sue and be sued, give notes and make contracts same as if single.

VERMONT. The property of a married woman is held separate, and is not liable for her husband's debts. In conveyance of the wife's real estate the husband must join in deed. A married woman may make a will. Widow has dower in one third the real estate of which the husband died seized.

VIRGINIA. A married woman holds the property owned by her previous to marriage, and what she may afterwards acquire, as sole trader, free from the control of her husband, and from liability for his debts. She may make a will subject to husband's rights by curtesy. Common law dower.

WEST VIRGINIA. The property of a married woman, however acquired, except from the husband, is held for her sole and separate use. Husband must join in conveyances of real estate. Dower.

WASHINGTON. The property owned before marriage by husband or wife, and all acquired afterwards by gift, devise, or descent to either, is separate property. All otherwise acquired is common property, subject to control of the husband. He also controls the separate property of the wife, but cannot sell or convey it without her joining in the deed. To save the separate property of the wife from attachment for husband's debts, there must be an inventory of it on record.

WISCONSIN. A married woman has all property rights the same as if single. She may buy and sell, lend and borrow, make conveyances, and have real estate conveyed to her, and all such business may be transacted between her and her husband as between strangers. She may sue alone, but in being sued she must be joined to husband. Dower, life interest in one third of all husband's realty held during the marriage. Husband has wife's realty for life.

WYOMING. A married woman may carry on business, make contracts, keep her own earnings, hold property, real or personal, receive the rents in her own name, sue and be sued, make a will, free from any control or interference of her husband, the same as if she were single. Her property is not liable for the debts of her husband. Women in this state have the right to vote and hold office.

CANADA. In the provinces of the Dominion, generally, a married woman holds all her property and earnings, free from the control of her husband. It is liable for her debts before marriage, and her husband is not. She may manage it and bequeath it. She is entitled to dower, but there is no tenancy by curtesy. In the province of Quebec the law is modified by the French law. There all the personal property and gains of both parties are put together, and form the community property, which the husband administers. Each can bequeath only his or her interest, and the heirs of each inherit the interest of each.

DICTIONARY OF LEADING JURISTS.

AKERMAN, AMOS TAPPAN (1823-1880). Attorney general; born in New Hampshire; was graduated from Dartmouth (1842); admitted to the bar (1844); practised in New Hampshire till 1850, when he removed to Elberton, Ga.; at the opening of the Civil War entered the service of the Confederate government in the quartermaster's department; after the war gave his support to the reconstruction policy of the government; served as United States attorney for the district of Georgia from 1866 to 1870; appointed in the latter year attorney general of the United States; was Republican candidate for United States senator but failed of an election (1873).

ALLISON, WILLIAM BOYD (1829-1908). An American lawyer; born at Perry, Ohio; studied law and practised in Ohio until his removal to Iowa (1857); was on the governor's staff during the Civil War; elected to the House of Representatives, serving from 1863 to 1871; in 1872 was elected to the United States Senate, and reëlected five times; the Bland-Allison Act was due to him; representative to Brussels Monetary Conference (1892); prominent in Republican national conventions for presidential nomination (1888, 1896).

ARCHAMBEAULT, HON. HORACE (1857-). Born at L'Assumption, P. Q.; educated at local college and graduated LL.L. with distinction at Laval University (1878); LL.D. (1886). Called to bar (1878); professor of science and law (since 1881); member Legislative Council of Province of Quebec (1888); of Council of Public Instruction (1890); created queen's counsel (1890); attorney general (1897); puisne judge Court of King's Bench, Province Quebec (1907).

BENJAMIN, JUDAH PHILIP (1811-1884). American lawyer and statesman; born in St. Croix, West Indies, of English-Jewish parentage; admitted to the bar in New Orleans (1832); admitted to practise before Supreme Court; United States senator from Louisiana (1852-1861); withdrew from Senate (1861); was appointed attorney general in provisional cabinet of President Davis; was Confederate secretary of war and in 1862 secretary of state; fled to England on the surrender of Lee at Appomattox; admitted to the English bar (1866); became queen's counsel (1872). In 1868 he published a "Treatise on the Law of Sale of Personal Property," which is known as a legal classic. In 1881 he retired and went to Paris.

BERRIEN, JOHN MACPHERSON (1781-1856). Statesman, jurist; born in New Jersey; was graduated from Princeton (1796); admitted to the bar of Georgia (1799), solicitor of the eastern district of Georgia (1809); judge of the same district (1810-1821); sat in Georgia senate (1822-1823); member of United States Senate (1825-1829 and 1840-1852); attorney general of the United States in President Jackson's cabinet (1829-1831); his eloquence before Congress gained him the title of "American Cicero."

BLACK, JEREMIAH SULLIVAN (1810-1883). American jurist; born in Glade, Pa.; admitted to the bar (1831); attorney general of the United States (1857); secretary of state (1860); on the accession of President Lincoln retired from public life; in 1868 counsel for President Johnson in the impeachment case, but withdrew after the answer had been filed; counsel for Tilden before the electoral commission (1877).

BLACKSTOCK, GEORGE TATE (1857-). Born at Newcastle, Ont.; educated at Upper Canada College; called to bar (1879); practised in Toronto; member of Beatty, Blackstock, Nesbitt & Chadwick. Created queen's counsel (1889); unsuccessful Conservative candidate for Lennox (1884); West Durham (1887 and 1891). Director Conservatory of Music, Toronto; member finance committee Liberal-Conservative Union of Ontario; wrote on Venezuelan question.

BLACKSTONE, SIR WILLIAM (1723-1780). Great English jurist; published the first volume of his famous *Commentaries on the Laws of England* in 1765.

BLAIR, HENRY WILLIAM (1834-). American lawyer; born in Campton, N. H.; admitted to bar (1859); served in Civil War; in New Hampshire house of representatives and in state senate (1866-1868); Republican member of Congress (1875-1879); United States senator (1879-1891); framed Blair Common School Bill, and that for U. S. Labor Department.

BONAPARTE, CHARLES JOSEPH (1851-). American lawyer and cabinet officer; born in Baltimore. A graduate of Harvard (1871) and Harvard Law School (1874). Appointed secretary of the navy (1905), and attorney general (March 4, 1907).

BORDEN, ROBERT LAIRD (1854-). Of United Empire Loyalist descent. Educated at Acadia Villa Academy; professor in Glenwood Institute, N. J.; called to bar (1878); located in Halifax; created queen's counsel (1890); distinguished special pleader; counsel for Dominion Government in Queen *vs.* David J. Adams in important Treaty of 1818 case. Hon. D.C.L.; LL.D. Member of Parliament for Halifax city and county (1896-1900); member for Carleton (1905). Elected Conservative leader in the House of Commons.

BRADFORD, WILLIAM (1755-1795). Jurist; born in Philadelphia, Pa.; studied law with Edward Shippen, and was admitted to the bar of the Supreme Court (1779); served in the Revolution; appointed attorney general of Pennsylvania (1780); appointed a judge of the supreme court under the new constitution of Pennsylvania (1791); U. S. attorney general (1794-1795).

BRECKENRIDGE, JOHN (1760-1806). Jurist; attorney general; born in Augusta County, Virginia; chosen a member of the legislature before completing his studies at William and Mary College, but was refused admission because of his being under age; admitted to the bar and began the practice of law in Charlottesville (1785); chosen as representative to the Third Congress, but removed to Kentucky, thus failing to take his seat (1793); is said to have been the author of the Kentucky resolutions of 1798; was assuredly the one who introduced them into the Kentucky legislature; entered the United States Senate (1801); attorney general under Jefferson.

BREWER, DAVID JOSIAH (1837-1910). An American jurist; born in Smyrna, Asia Minor; graduated at Yale (1856) and at Albany Law School (1858); studied law with his uncle, David Dudley Field; was a United States commissioner in 1861-1862; judge of the probate and criminal courts of Kansas; judge of the district court of First Kansas District; justice of the state supreme court (1870-1884); judge of the circuit court of United States in 1884-1889; associate justice of the United States Supreme Court (1889-1910); in 1896 appointed a member of the Venezuelan Boundary Commission; affirmed the right of liquor manufacturers to compensation—this was the decision rendered on the Kansas Prohibition Law; member of British-Venezuelan Arbitration Tribunal (1899); president Universal Congress of Lawyers and Jurists, Louisiana Purchase Exposition, St. Louis (1904)

BREWSTER, BENJAMIN HARRIS (1816-1888). Attorney general of Pennsylvania (1867), when he broke up the Gettysburg Lottery scheme; attorney general of the United States in Arthur's cabinet (1881-1885), when he conducted the "Star Route" trials.

BUTLER, BENJAMIN FRANKLIN (1795-1858). An American lawyer and politician; born at Kinderhook Landing, N. Y.; studied law and was admitted to the bar (1817); district attorney of Albany County (1821-1824); elected to the state legislature (1827); appointed attorney general by Jackson (1833), and by Van Buren in 1837; secretary of war (1836-1837); organized the department of law in the College of the City of New York, and was the principal professor from 1837; United States district attorney at New York City from 1838-1841; served at the head of the electoral college in New York (1844); district attorney from 1845-1848; in 1856 left the Democratic party on the Kansas-Nebraska bill and the repeal of the Missouri Compromise questions.

CAMBACERES (*kon-bah-say-res'*), **JEAN JACQUES REGIS DE, DUKE OF PARMA** (1753-1824). A French statesman; born in Montpellier; president of the convention after the fall of Robespierre; his "Plan of a Civil Code" was the basis of the "Code Napoléon"; in 1799 he was made second consul in France (with Bonaparte and Lebrun); created high chancellor of the empire and Duke of Parma (1808); directed affairs while Napoleon was absent (1813-1814); during the Hundred Days he served Napoleon as minister of justice; exiled in 1816, but restored in 1818.

CHANDLER, WILLIAM EATON (1835-). Lawyer; born at Concord, N. H. Graduated from Harvard Law School (1854), and was admitted to the bar in 1855; reporter of decisions supreme court of New Hampshire (1859); member New Hampshire legislature (1862, 1863, 1864, 1881); solicitor and judge advocate general navy department (1865); first assistant secretary of treasury (1865-1867); appointed solicitor general of United States, but rejected by Senate (1881); secretary of the navy (1882-1885); United States senator (1887-1901); president Spanish Treaty Claims Commission (1901-1907).

CHASE, SALMON PORTLAND (1808-1873). American statesman and jurist; born in Cornish, N. H.; graduated at Dartmouth College (1826); studied law under William Wirt, and was admitted to the bar in 1830; celebrated for his defense in the Matilda case (1837); became known as the leader of the political anti-slavery men; served as senator from Ohio (1849); withdrew from the Democratic party, which had sent him to Congress, when they adopted a pro-slavery platform (1852); became the leader of the Republicans in Ohio, and was chosen governor of that state (1856-1860); failed to secure the nomination for the presidency (1860); appointed by Lincoln secretary of the treasury (1861); appointed chief justice of the Supreme Court (1864-1873); presided at the impeachment trial of President Johnson (1868); candidate for the Democratic nomination for the presidency (1868).

CHOATE, JOSEPH HODGES (1832-). An American lawyer and diplomat. Since 1865 he has conducted many famous trials, both national and international. He defended General Fitz-John Porter, prosecuted the Tweed ring, conducted the Tilden will case, the Chinese exclusion cases, and represented the Canadian government in the Bering Sea dispute. He succeeded John Hay as ambassador to England (1899-1906), after which he resumed his law practice in New York City.

CHOATE, RUFUS (1799-1859). A famous American lawyer and statesman; born in Ipswich, Mass.; graduated at Dartmouth College (1819); studied law and was admitted to the bar (1823); served in lower house of Massachusetts legislature (1826); in state senate (1826); in the national House of Representatives (1831-1834), in United States Senate (1841-1845); ranked high as a debater and able lawyer.

CLIFFORD, NATHAN (1803-1881). American jurist; admitted to the bar (1827), in New Hampshire legislature (1830-1834), speaker (1832-1834); attorney general (1834-1838); congressman (1839-1843); attorney general of United States (1846); envoy to Mexico to arrange treaty of peace (1848); associate justice of United States Supreme Court (1858); president of electoral commission (1877).

COKE, SIR EDWARD (1552-1634). A great English jurist; best known by his treatise *Coke upon Littleton, or the First Institute*, which is still, perhaps, the most authoritative treatise on English law. His other works are *Second, Third, and Fourth Institutes; The Complete Copyholder*, and *Reading on Fines*.

CRITTENDEN, JOHN JORDAN (1787-1863). American statesman; United States senator (1817-1819, 1835-1841, 1842-1848, and 1855-1861); attorney general of United States (1841, 1850-1853); governor of Kentucky (1848-1850); congressman (1861-1863).

CUSHING, CALEB (1800-1879). American politician and jurist; born in Salisbury, Mass. As United States commissioner to China (1843-1845) he concluded the first treaty of the United States with that country (1844). He was attorney general of the United States (1853-1857), and one of the coun-

sel in the *Alabama* case before the Geneva Arbitration Tribunal (1871); was minister to Spain (1874-1877). He is the author of *Reminiscences of Spain, The Practical Principles of Political Economy,* and *The Growth and Territorial Progress of the United States.*

DAVIS, DAVID (1815-1886). An American jurist, born in Cecil County, Md.; graduated at Kenyon College, Ohio (1832); studied law; admitted to the bar (1835); appointed (1862) associate justice of the United States Supreme Court, by President Lincoln; resigned in 1877, having been elected to the United States Senate, where he served from 1881-1883 as president pro tem., after Vice-President Arthur became president; in 1872 he was a prominent candidate for the presidential nomination.

DEVENS, CHARLES (1820-1891). An American jurist; born at Charlestown, Mass.; graduated at Harvard, and was admitted to the bar (1841); member of the state senate (1848-1849); was United States marshal for the district of Massachusetts (1849-1853); served on the Federal side in the Civil War, attaining the rank of brigadier general, and that of major general; served in the superior and supreme courts of Massachusetts from 1867-1877 as associate justice; appointed United States attorney general by President Hayes, serving from 1877-1881; was again in the state supreme court from 1881 till his death.

DICKINSON, DONALD McDONALD (1846-). An American lawyer; born at Port Ontario, New York; was graduated from the University of Michigan (1866); admitted to the bar (1867); in 1888 was appointed postmaster general; was chairman of the National Democratic campaign committee (1892); acted as United States senior counsel before the Bering Sea claims commission (1896); member of court of arbitration to adjust controversy between United States and Republic of Salvador (1902).

ELDON, JOHN SCOTT, EARL OF (1751-1838). Lord high chancellor. Born at Newcastle-upon-Tyne; admitted to the bar (1776); made attorney general, and knighted (1793); appointed chief justice of the Court of Common Pleas (1799); created lord chancellor (1801); as a reward for services rendered the king, George IV., he received the title of Earl of Eldon (1821); retired to private life (1827); was a common-law judge of the highest order.

ELLSWORTH, OLIVER (1745-1807). An American statesman and jurist; born at Windsor, Ct.; admitted to the bar (1771); elected to the Connecticut legislature (1775); sent as a delegate from Connecticut to the Continental Congress (1778-1783); became a judge of the Connecticut superior court (1784); represented Connecticut in the constitutional convention of 1787 at Philadelphia, where he secured the adoption of the Connecticut compromise; instrumental in the organization of the national government (1789); appointed chief justice of the Supreme Court of the United States (1796-1800); sent with Murray and Davie as commissioner to France (1799); was a member of the governor's council in Connecticut from 1802 until his death; received the appointment of chief justice of the state in 1807 but he died before taking office.

ERSKINE, THOMAS, FIRST BARON ERSKINE (1750-1823). An eminent Scotch lawyer; born in Edinburgh; admitted to the bar (1778); entered parliament (1783); opposed Pitt, and it was not till Pitt's death that he gained a position in the cabinet, that of lord chancellor in 1806; received the title of Baron Erskine (1806).

EVARTS, WILLIAM MAXWELL (1818-1901). A famous American lawyer and statesman; born in Boston; studied law, and was admitted to the bar (1841); became leading counsel for President Johnson in the impeachment trial before the Senate (1868); was attorney general of the United States (1869); became chief counsel for the United States before the court of arbitration at Geneva, convened to pass on the *Alabama* claims (1872); leading counsel for Hayes before the electoral commission in 1877; appointed secretary of state by President Hayes (1877-1881); United States delegate to the international monetary conference at Paris (1881); member of the United States Senate (1885-1891).

FAIRCHILD, CHARLES STEBBINS (1842-). Lawyer, banker; born at Cazenovia, N. Y. Graduated from Harvard (1863); Harvard Law School (1865); admitted to New York bar same year, beginning practice at Albany. Became deputy attorney general of New York (1874); attorney general (1876-1877); secretary of the treasury United States (1887-1889); member monetary commission, appointed by executive committee of Indianapolis monetary conference of 1897.

FARMAN, ELBERT ELI (1831-). Jurist; born in New Haven, N. Y.; graduated from Amherst College (1855); admitted to bar (1858); to United States courts (1862); district attorney, Wyoming County, N. Y. (1868-1875); United States diplomatic agent and consul general at Cairo, Egypt (1876-1881); judge mixed tribunals of Egypt (1881-1884); United States member international commission (1883-1884), to determine amounts to be paid the inhabitants of Alexandria for losses in bombardment of 1882; secured gift of "Cleopatra's Needle" for New York (1879).

FIELD, DAVID DUDLEY (1805-1894). A celebrated American jurist; born in Haddam, Ct.; studied law, and was admitted to the bar (1828); appointed a commissioner on practice and pleading by the New York legislature; he prepared Codes of Civil and Criminal Procedure, which were adopted in New York and subsequently in many other states (1848-1850); placed at the head of a new commission to prepare political, penal, and civil codes (1875); suggested to the British Association for the Promotion of Social Science, a plan for the revision and reform of the law of nations; elected president of an association formed at Brussels for the reform and codification of the law of nations (1873); appointed to fill a vacancy in Congress (1876); presided over the Peace Congress in London in 1890.

FIELD, STEPHEN JOHNSON (1816-1899). A distinguished American judge; born in Haddam, Ct. He was a brother of David Dudley Field and of Cyrus W. Field. Went to California in 1849 and practised law; judge of the supreme court of California (1857) and chief justice (1859). Through his decisions regarding titles to lands the law of real property was placed upon a firm basis. In 1863 Lincoln made him an associate justice of the Supreme Court of the United States, where he contributed greatly to American constitutional law by his famous decisions. He was a member of the Hayes-Tilden electoral commission of 1877 and voted in favor of Tilden.

FORWARD, WALTER (1786-1852). An American lawyer and cabinet officer; born in Hartford County, Ct. Elected to Congress, from Pittsburg, Pa. (1822-1825), as a Democrat; then became a Whig; secretary of the treasury under Tyler (1841-1843), after which he practised law.

FULLER, MELVILLE WESTON (1833-1910). Jurist; born in Augusta, Me.; removed to Chicago, Ill. (1856); sat in the Illinois state legislature (1864, 1872, 1876, and 1880); chief justice of the United States Supreme Court (1888-1910) to succeed M. R. Waite; member of the arbitration commission at Paris to adjust the Anglo-Venezuelan difficulty (1899).

GALT, HON. SIR THOMAS (1815-1910). Born in England; came to Canada (1833); studied law; called to bar (1845); elected bencher of Law Society (1855); created queen's counsel (1858); judge Court of Common Pleas (1869); chief justice (1887); knighted (1888) and retired from judicial life in 1894.

GARLAND, AUGUSTUS HILL (1832-1899). An American politician; born in Tipton County, Tenn.; admitted to the bar (1853); although opposed to secession, he joined the Southern cause; was elected to the Confederate Congress (1861); and afterward elected to the Confederate Senate, which position he held until the close of the war; governor of Arkansas (1874) under the new constitution; U. S. senator (1877-1885); U. S. attorney general (1885-1889).

GILPIN, HENRY DILWOOD (1801-1860). Jurist; born in Lancaster, England; educated in England up to 1816, when he removed to America, completing his education at the University of Pennsylvania (1819); admitted to the bar (1822); appointed district attorney for Pennsylvania (1832); appointed solicitor of United States treasury (1837); attorney general of the United States (1840-1841).

GIROUARD, HON. DESIRE (1836-). Born at St. Timothée, P. Q.; educated at Montreal College; studied law; B.C.L. (1860); D.C.L. (1874); called to bar (1860); created queen's counsel (1880); entered political life (1874) representing Jacques Cartier from 1878 to 1896; retired from politics. Distinguished himself in connection with Deceased Wife's Sister bill; was one of group of 16 French Conservative men known as "The Bolters." Contributor to Canadian history, receiving the Confederation

Medal from Lord Aberdeen. Judge of Supreme Court of Canada (1895).

GRESHAM, WALTER QUINTON (1832-1895). American jurist; born near Lanesville, Ind.; admitted to bar (1853); elected to state legislature (1860); brevetted major general Civil War (1865); United States district judge for Indiana (1869); postmaster general (1882); secretary of treasury (1884); United States circuit judge (1884); secretary of state (1893).

GRUNDY, FELIX (1777-1840). American jurist; born in Berkeley County, W. Va. Member Kentucky legislature (1799); elected to Congress (1811-1813); United States Senate (1829); United States attorney general (1838); resigned to reënter Senate (1839).

HALE, SIR MATTHEW (1609-1676). Lord chief justice of England; born at Alderley, Gloucestershire; studied law, and was called to the bar (1637); appointed a judge of the Court of Common Pleas holding this position from 1654 till the Restoration, when he was made chief baron of the exchequer, and knighted; became chief justice of the King's Bench (1671); resigned in 1676.

HARLAN, JOHN MARSHALL (1833-). Associate justice; born in Boyle County, Ky. Studied law at Transylvania University; practised at Frankfort; county judge (1858); elector on Bell and Everett ticket (1860); served in Union army during Civil War (1861-1863); attorney general Kentucky (1863-1867); practised law in Louisville (1867); nominee for governor in 1871 and 1875, but defeated; one of the American arbitrators of Bering Sea tribunal which met in Paris in 1893.

HARMON, JUDSON (1846-). American lawyer; born at Newton, Ohio; graduated from Denison University (1866), and Cincinnati Law School (1869); judge common pleas court (1876-1878); elected in 1878 to superior court of Cincinnati; appointed attorney general of United States in President Cleveland's second cabinet (1895-1897); elected governor of Ohio (1908).

HIGGINS, ANTHONY (1840-). Lawyer; born at Red Lion Hundred, Del.; graduated from Yale; studied law at Harvard and was admitted to the bar in 1864; chairman Republican state committee (1868); United States attorney for Delaware (1869-1876); candidate for Congress in 1884, but defeated; United States senator (1889-1895); counsel for Judge Swayne in his impeachment trial (1905).

HOAR, EBENEZER ROCKWOOD (1816-1895). Jurist; born at Concord, Mass.; studied law, and was admitted to the bar (1835); judge of the court of common pleas (1849-1855); judge of the state supreme court (1859-1869); appointed attorney general of the United States (1869), serving till 1870; member of the Joint High Commission that framed the Treaty of Washington (1871); member of Congress (1873-1875).

HOLMES, OLIVER WENDELL (1841-). Jurist; born at Boston, Mass. Graduated from Harvard (1861), Harvard Law School (1866); served in Civil War, being mustered out with rank of captain. Admitted to Massachusetts bar (1867); practised in Boston; taught constitutional law at Harvard Law School (1870-1871); editor *American Law Review* (1870-1873); member Shattuck, Holmes & Munroe, law firm (1873-1882); professor Harvard Law School (1882); associate justice (1882-1889), chief justice supreme judicial court of Massachusetts (1899-1902); associate justice United States Supreme Court since 1902.

IMPEY, SIR ELIJAH (1732-1809). An English jurist. First chief justice of Bengal (1774-1783); recalled and impeached for condemning to death the famous forger, Raja Nanda Kumar. He was acquitted with honor as an amiable and upright judge.

JAY, JOHN (1745-1829). American statesman and jurist; born in New York City. Was admitted to the bar (1768); was a delegate to the first continental congress (1774), a member of the provincial congress of New York, and president of the continental congress (1778-1779). From 1779 to 1782 he represented his country in Spain; was one of the American peace negotiators in Paris (1782-1783), and helped in securing the ratification of the Federal constitution in New York. From 1789 until 1795 he was the first chief justice of the United States Supreme Court, and in 1794 concluded the Jay treaty with the British government. Was governor of New York (1795-1801).

JEFFREYS or **JEFFERIES, GEORGE, LORD** (1648-1689). Lord high chancellor of England; born at Acton, near Wrexham, Denbighshire; admitted to the bar (1668); was appointed common sergeant of the city of London (1671); became recorder of London (1678); was appointed chief justice of Chester (1680); a baron in 1681; and chief justice of England (1683); presided at the trials of those who had a part in the Rye House and Popish plots, and condemned without mercy; conducted the "Bloody Assizes," after the battle of Sedgemoor, when he ordered 320 executions for high treason (1685); made lord chancellor and keeper of the great seal by James II. (1685); instrumental in consigning the seven bishops to the Tower (1688); attempted flight with his master, James II., but was caught and placed in the Tower, where he died.

JOHNSON, REVERDY (1796-1876). American jurist and statesman; born in Annapolis, Md.; admitted to the bar (1815); state senator (1821-1825); United States senator (1845-1849, and 1863); attorney general (1850); minister to Great Britain (1868).

KENT, JAMES (1763-1847). An American jurist; author of the famous *Commentaries on American Law*, which holds in this country a position similar to that occupied by Blackstone's *Commentaries* in Great Britain.

KNOX, PHILANDER CHASE (1853-). American lawyer and cabinet officer; born at Brownsville, Pa.; admitted to the bar (1875); United States district attorney for Western District of Pennsylvania (1876); became partner in a Pittsburg law firm in 1877, and devoted his time especially to corporation law; president of Pennsylvania Bar Association (1897); attorney general in President Roosevelt's cabinet (1901-1904); member of U. S. senate (1904-1909); secretary of state in President Taft's cabinet (1909).

LAMAR, LUCIUS QUINTUS CINCINNATUS (1825-1893). Statesman; born in Putnam County, Ga.; admitted to bar (1847); elected to Congress (1857-1859); colonel in Confederate army; professor of ethics and metaphysics University of Mississippi (1866-1867); of law (1867-1870); member of House of Representatives (1873-1877); of Senate (1877-1885); secretary of interior (1885-1888); associate justice Supreme Court (1888-1893).

LITTLE, HON. PHILIP FRANCIS (1824-1897). Born and educated in Prince Edward Island; called to bar. Went to Newfoundland (1844); entered legislature (1850); leader of Liberal party in the colony and largely responsible for vital changes in old system of irresponsible rule, advocating self-government for the colony; enlisted John Bright and others until he won his cause (1854). Formed ministry to inaugurate the first government; attorney general (1855); senior judge of Supreme Court (1858); retired to Ireland (1867). Offered the leadership of the National cause, also a seat in Imperial Parliament, but declined both.

LEE, CHARLES (1758-1815). Jurist; born in Fauquier County, Va.; studied law with Jared Ingersoll in Philadelphia, and was admitted to the bar; served in the Virginia assembly; became naval officer of the Potomac district (1795); appointed in 1795 attorney general of the United States by President Washington, holding office throughout John Adams's administration; declined the office of chief justice of the Supreme Court under Jefferson.

LEGARE, HUGH SWINTON (1797-1843). Jurist; born in Charleston, S. C.; studied law, completing his education in Edinburgh; elected to the state legislature (1824-1830); appointed attorney general of the state of South Carolina; opposed extreme measures during the nullification crisis, although in favor of states rights; served as chargé d'affaires at Brussels (1832-1838); elected to Congress; appointed attorney general of the United States by President Tyler (1841); on the retirement of Webster conducted the state department.

LINCOLN, LEVI (1749-1820). A political leader; born in Hingham, Mass.; graduated at Harvard (1772); made clerk of the court in Worcester County (1775), later becoming probate judge; entered state house of representatives (1796); became a member of state senate (1797); elected to Congress (1800); appointed by Jefferson attorney general of the United States (1801); was acting secretary of state for some months during the same year; was lieutenant governor (1807-1808), and governor of Massachusetts (1808-1809).

LINCOLN, ROBERT TODD (1843-). Lawyer; born at Springfield, Ill.; son of Abraham Lincoln; graduated from Harvard (1864); served under Grant in Civil War; admitted to Illinois bar (1867); practised at

Chicago; delegate Republican state convention (1880); presidential elector (1880); secretary of war (1881-1885); United States minister to Great Britain (1889-1893).

McKENNA, JOSEPH (1843-). American jurist; born at Philadelphia; removed to California in 1855; admitted to the bar in 1865; district attorney of Solano County for two terms; member of the state (California) legislature (1875-1876); Republican member of Congress (1885-1893), when he was appointed United States circuit judge; became United States attorney general under President McKinley (1897); succeeded Justice Field in the United States Supreme Court in 1898.

MacMASTER, DONALD (1846-). Born at Williamstown, Ontario. Educated at McGill University; B.C.L., prize essayist, and valedictorian (1871); D.C.L. in course (1894). Called to Quebec bar (1871); appeared before Privy Council in England; served as crown prosecutor in many cases; called to Ontario bar (1882); created queen's counsel (1882); served on Royal Commission (1892); represented Glengarry in Ontario Assembly from 1879 to 1882, when he was returned to the House of Commons for the same constituency; moved the address in reply to the Speech from the Throne (1887), retiring from Canadian politics (1887), declining several nominations. Elected member of Parliament for the Chertsey division of Surrey in England (1910) by a majority of 4,613, in the Unionist interest.

MacVEAGH, WAYNE (1833-). Lawyer; born near Phoenixville, Pa.; graduated from Yale (1853); admitted to bar (1856); district attorney Chester County (1859-1864); captain in Civil War (1862-1863); chairman Republican state committee of Pennsylvania (1863); United States minister to Turkey (1870-1871); member Pennsylvania constitutional convention (1872-1874); head of "MacVeagh Commission" sent to Louisiana (1877); United States attorney general (1881); resigned and practised law in Philadelphia; chairman Civil Service Reform Association of Philadelphia, and of Indian Rights Association; ambassador to Italy (1893-1897); United States counsel in the Venezuelan arbitration before Hague Tribunal (1903).

MANSFIELD, WILLIAM MURRAY, EARL OF (1705-1793). British jurist; born at Perth, called to the bar in 1730; appointed solicitor general in 1741; king's attorney (1754); chief justice of the King's Bench (1756); exposed to much abuse and party hatred because of his opinions, his house, with all his valuable books and manuscripts, was burned in the Gordon riots of 1780; with dignity, he refused indemnification by parliament. Created Earl of Mansfield in 1776; resigned chief justiceship in 1778.

MARSHALL, JOHN (1755-1835). American jurist whose work on constitutional law constitutes a record. Born in Fauquier County, Va.; served in Revolution; admitted to bar (1781); member Virginia legislature (1782); member executive council (1784-1787-1795); adoption of Constitution by Virginia largely due to his efforts; went with Gen. C. Pinckney and Elbridge Gerry to influence the French Directory to remove restrictions laid on American commerce (1797); elected to the lower house of Congress, became an acknowledged leader on constitutional and international law; became secretary of state (1800); chief justice United States Supreme Court (1801-1835), when his great constitutional work was done.

MASON, JOHN YOUNG (1799-1859). A politician; born at Greensville, Sussex County, Va.; studied law and was admitted to the bar (1819); presided over Federal and state courts; served in the Virginia assembly; member of Congress (1831-1837); judge United States district court for Virginia (1837-1844); made secretary of the navy (1844); appointed attorney general in President Polk's cabinet (1845-1846); minister to France (1853); issued with Buchanan and Soulé, ministers of the United States to England and Spain, respectively, the famous Ostend manifesto.

MILLER, WILLIAM HENRY HARRISON (1840-). An American lawyer; born in Augusta, Oneida County, N. Y.; graduated at Hamilton College, Clinton, N. Y.; taught school; practised law at Fort Wayne, Ind. (1866-1874); became law partner of Benjamin Harrison; attorney general of United States (1889-1893); on retirement from public life resumed his law practice.

MOODY, WILLIAM HENRY (1853-). American cabinet officer; born in Newbury, Mass.; member of Congress (1895-1902); in March, 1902, he succeeded John D. Long as secretary of the navy; in 1904 he was made attorney general, and in 1907 associate justice of the United States Supreme Court.

MORRISON, WILLIAM RALLS (1825-). Lawyer; born in Monroe County, Ill.; educated at McKendree College; served in Mexican War; went to California (1849); returned to Illinois (1851); admitted to the bar; clerk in circuit court (1852-1854); member Illinois legislature (1854-1860, 1871-1872); member Congress (1863-1865, 1873-1887); chairman Ways and Means Committee (1875-1877, 1883-1887); introduced "Morrison" bill and several others; interstate commerce commissioner (1887-1897).

NELSON, JOHN (1791-1860). Jurist; born in Fredericktown, Md.; was graduated from William and Mary College (1811); studied law and was admitted to the bar; was a member of Congress (1821-1823); appointed United States minister to Naples (1831); attorney general of the United States (1844).

OGLESBY, RICHARD JAMES (1824-1899). American soldier, lawyer, and politician; born in Oldham County, Ky.; served as lieutenant in Mexican War; represented his district in the state (Illinois) senate (1860), but at outbreak of Civil War resigned to become colonel of Eighth Illinois Volunteers; brigadier general of volunteers (March, 1862); major general (November, 1862); governor of Illinois (1864-1869), for a few months in 1873, and from 1884-1889; member of United States Senate (1873-1879).

OLNEY, RICHARD (1835-). An American politician; born in Oxford, Mass.; graduated Harvard Law School (1858); admitted to the bar (1859); served in Massachusetts legislature (1874); appointed attorney general of United States by President Cleveland (1893-1895); appointed secretary of state serving from 1895 to 1897; carried the Venezuelan controversy with Great Britain to a successful issue (1895).

PAINE, ROBERT TREAT (1731-1814). American lawyer and patriot; born in Boston; graduated at Harvard (1749); was admitted to the bar (1759); was a member of the Massachusetts general court (1773-1774), of the Continental Congress (1774-1778), and signed the Declaration of Independence; in 1777 he served as speaker in the Massachusetts house of representatives; was state attorney general (1780-1790); associate justice of the state supreme court (1790-1804).

PARKER, ALTON BROOKS (1852-). American jurist; born at Cortland, N. Y.; graduated at the Albany Law School (1872), and worked his way through the Cortland Normal School; was surrogate of Ulster County (1877-1885), a representative at the Democratic National Convention (1884), and was offered the office of first assistant postmaster general (1885). In the same year he was made chairman of the Democratic state executive committee, and in 1886, appointed to a position in the Supreme Court; transferred to the Court of Appeals (1889), and made chief judge of the Court of Appeals (1897); was Democratic candidate for president against Roosevelt (1904), and president of the American Bar Association (1906-1907).

PARSONS, THEOPHILUS (1750-1813). American jurist; born in Byfield, Mass.; graduated at Harvard (1769); began practice of law at Falmouth (now Portland, Me.) (1774); member of the constitutional convention which framed a new constitution for Massachusetts (1779-1780); member of the state convention called to ratify the Federal Constitution (1788); in 1801 was attorney general of the United States in John Adams's cabinet; from 1806 till his death he was chief justice of the state supreme court.

PIERREPONT (*peer'pont*), **EDWARDS** (1817-1892). American diplomat; born in New Haven, Ct. Admitted to the bar (1840), and in 1857 was elected judge of the New York superior court. He became attorney general of the United States (1875), tried many famous cases, and won distinction as an orator. United States minister to Great Britain (1876-1877).

PINKNEY, WILLIAM (1764-1822). An American statesman and lawyer; born at Annapolis, Md.; studied law with Justice Samuel Chase; admitted to the bar (1786); member of the convention to ratify the Federal Constitution (1788); elected to the house of delegates (1788); secured (1796) a claim of $800,000 for Maryland on the Bank of England as compensation due American merchants under the Jay Treaty; elected attorney general of Maryland (1805); sent as minister extraordinary to England (1806); recalled (1811); elected to Maryland state senate, but was appointed attorney general of the United States by President Madison (1811); entered the national House of Representatives (1815-1816); minister to Russia and special envoy to Naples (1816); elected to United States Senate (1820).

QUINCY, JOSIAH (1744-1775). American lawyer, orator, and essayist; born in Boston; graduated at Harvard (1763), and with John Adams conducted (1770) the defense of the British soldiers who took part in the Boston Massacre; went South (1773) and arranged for a system of communication between the patriots of that part of the country and those of the North. In 1774 he went to England in the interests of the Patriot party.

QUINCY, JOSIAH (1772-1864). Son of the foregoing; born in Boston; graduated at Harvard (1790); member of the state senate (1804); entered Congress (1805); opposed slavery and maintained that the purchase of Louisiana was sufficient ground for the dissolution of the Union. This was the first utterance of the right of secession made in Congress.

RANDOLPH, EDMUND JENNINGS (1753-1813). An American statesman; born in Williamsburg, Va.; graduated at William and Mary College; joined the cause of the colonies against Great Britain at the outbreak of the Revolution; elected to the Virginia constitutional convention (1776); chosen first attorney general under the new state constitution (1776); member of the Continental Congress from 1780-1782; became governor of Virginia from 1786-1788; appointed attorney general of the United States by Washington (1789) while working at a codification of the Virginia laws; succeeded Jefferson as secretary of state (1795); was counsel for Aaron Burr (1807).

RODNEY, CAESAR AUGUSTUS (1772-1824). Born in Dover, Del.; admitted to bar (1793); elected to Congress (1803-1805); attorney general (1807); state senator from Newcastle ounty (1815); commissioner to report on Spanish Republics (1817); elected United States senator (1822); appointed minister to La Plata (1823).

ROUTHIER, HON. ADOLPHE BASILE (1839-). Born at St. Placide, P.Q. Educated at College Ste. Thérèse and Laval University, taking B.A. (1858); called to bar (1861); created queen's counsel (1873); puisne judge of Superior Court of Province of Quebec. Judge of Vice Admiralty Court (1897); president of St. Jean Baptiste Society. Declined appointment to lieutenant governorship of the Northwest Territories (1897). Wrote under the nom de plume of "Jean Piquefort"; a noted orator; appointed knight commander of the order of St. Gregory by the Pope.

RUSH, RICHARD (1780-1859). Born in Philadelphia; admitted to bar (1800); attorney general of Pennsylvania and United States comptroller (1811); United States attorney general (1814-1817); secretary of state (1817); minister to England (1817-1825); secretary of treasury (1825); Smithsonian commissioner to England (1836-1838); minister to France (1847-1851).

RUTLEDGE, JOHN (1739-1800). American politician and jurist; born at Charleston, S. C.; studied law in England, and began to practise in Charleston in 1761; sent as a delegate to the Stamp Act Congress (1765); sat in the South Carolina Convention of 1774 and the Continental Congress of the same year; in 1776 appointed chairman of the committee which framed the new constitution for South Carolina; became first president under that constitution; was governor of South Carolina in 1779; served during the Revolutionary War with the Army of the South; served in Congress from 1782-1783; was chancellor of South Carolina (1784); member of the convention which framed the Federal Constitution (1787); appointed an associate justice of the United States Supreme Court (1789-1791); chief justice of South Carolina (1791-1795).

SMITH, ROBERT (1757-1842). Jurist; was born in Lancaster, Pa.; was graduated from Princeton (1781); served during the Revolution; studied law, and was admitted to the bar; was state senator from Maryland (1793); member of the house of delegates (1796-1800); secretary of the navy (1802-1805); attorney general of the United States (1805); secretary of state (1809-1811); declined chief judgeship of the district of Baltimore (1806).

SOLEY, JAMES RUSSELL (1850-). Lawyer, author; born in Boston, Mass.; educated at Harvard College and Columbia University Law School; professor United States Naval Academy (1872-1882); professor United States navy (1876-1890); department of education Paris Exposition (1878); assistant secretary of the navy (1890-1893); member New York bar since 1893; Venezuelan counsel at Paris Arbitration, Venezuela and British Guiana Boundary (1899); lecturer Naval War College, Newport, R. I.

STANTON, EDWIN McMASTERS (1814-1869). American statesman; born at Steubenville, Ohio; practised law with much success, and was made attorney general of the United States (1860). In 1862 he succeeded Cameron as secretary of war, in which office he served until 1868. Stanton was made an associate justice of the United States Supreme Court by President Grant (1869), but did not live to assume his new duties.

STRAUS, OSCAR SOLOMON (1850-). Lawyer; born in Rhenish Bavaria. He came to the United States in 1854, and lived in Georgia until 1865, when he removed to New York; received degrees from several universities. Practised law (1872-1881); entered mercantile life and became member of L. Straus & Sons, importers of pottery and glassware; minister to Turkey (1887-1889, 1898-1901); member permanent court of arbitration at The Hague since 1902; secretary of commerce and labor (1906-1909); appointed by President Taft minister to Turkey (1909).

TAFT, ALPHONSO (1810-1891). Jurist; born in Townshend, Vt.; graduated at Yale, studied law and admitted to the bar (1838); practised law in Cincinnati; delegate to the Republican national convention (1856); defeated as a candidate for Congress (1856); judge of the superior court of Cincinnati (1866-1872); became secretary of war (1876) but was transferred to attorney generalship the following May; appointed minister to Austria (1882); minister to Russia (1882-1884).

TANEY (*taw'ni*), **ROGER BROOKE** (1777-1864). A celebrated American jurist, chief justice of the United States Supreme Court; born in Calvert County, Md.; studied law, and was admitted to the bar (1799); appointed attorney general of the United States (1831); succeeded Duane as secretary of the treasury; appointed chief justice of the Supreme Court in John Marshall's place (1836); rendered his most famous decision in the Dred Scott case; he denied the right of the president to suspend the writ of "habeas corpus."

TAYLOR, HON. SIR THOMAS WARDLAW (1833-). Born in Scotland; educated at Edinburgh, taking B.A. (1852), and Toronto M. A. (1856); called to Toronto bar (1858); referee under Act for Quieting Titles (1869); master in Chancery (1872); queen's counsel (1881); puisne judge of Queen's Bench (1883); chief justice of Manitoba (1887); administrator to Province (1893); royal commissioner (1886, 1895); knighted (1897); author of a number of important legal treatises.

WAITE, MORRISON REMICK (1816-1888). American jurist, chief justice of the Supreme Court of the United States (1874-1888); born at Lyme, Ct.; admitted to the bar at Maumee City, Ohio (1839); member of Ohio legislature (1849); appointed (1871) with Caleb Cushing and William M. Evarts to represent the United States at tribunal for arbitration of the *Alabama* and other claims at Geneva.

WHITNEY, SIR JAMES PLINY (1843-). Distinguished Canadian queen's counsel and legislator. Descendant of Henry Whitney, who came from England to Canada, 1640. Educated at Cornwall Grammar School; called to bar (1876); created queen's counsel (1890). Member (and now premier) of the Ontario Assembly in Conservative interest (since 1888). Fine orator; identified with bill to punish bribery. Member of commission to revise Ontario statutes; of council of Trinity College, Toronto, and a prominent representative of diocese of Ontario in General Synod, Anglican Church. Vice-president Liberal Conservative Union of Ontario, 1896. Is an LL.D. of Toronto University, a D.C.L. of Trinity College, and an LL.D. of Queen's University, Kingston, Ont.

WILLIAMS, GEORGE HENRY (1823-). Jurist; born in New Lebanon, N. Y.; studied law and admitted to the bar (1844); elected judge of the first judicial district of Iowa (1847-1852); appointed chief justice of Oregon territory (1853-1857); United States senator from Oregon (1865-1871); member Joint High Commission to settle *Alabama* claims; attorney general of United States under President Grant (1872-1875).

WIRT, WILLIAM (1772-1834). American lawyer, statesman, author; born at Bladensburg, Md.; settled in Richmond in 1806, and won distinction for prosecution of Aaron Burr; member of Virginia legislature (1807-1808); United States district attorney (1816); attorney general during administrations of Monroe and J. Q. Adams (1817-1829); nominated for president in 1832 by Anti-Masonic party.

BOOK V.

COMMERCE.

PEACE.
Mural Painting in the Congressional Library, Washington.
BY GARI MELCHERS.

HISTORY OF COMMERCE. COMMERCIAL DEVELOPMENT OF THE UNITED STATES. IMPORTS, EXPORTS, AND TRADE OF THE UNITED STATES, OF GREAT BRITAIN, AND OF THE WORLD. COMMERCIAL GEOGRAPHY OF THE WORLD. GREAT SEAPORTS AND TRADE CENTERS. TRANSPORTATION: ROADS, RAILROADS, ELECTRIC ROADS, CANALS, RIVERS, WATER WAYS, OCEAN ROUTES. COMMUNICATION: TELEGRAPH, AND TELEPHONE. DICTIONARY OF COMMERCIAL WEIGHTS AND MEASURES. MINERAL RESOURCES OF THE UNITED STATES. PROGRESS TABLE OF THE UNITED STATES. DICTIONARY OF LEADERS OF TRADE AND COMMERCE.

HISTORY OF COMMERCE.

The beginnings of commerce are known to have antedated historic times. Even savage, unlettered races of our own times carry on trade. So it was in ancient times. The earliest recorded transactions are those of the countries in the Tigris-Euphrates valley.

COMMERCE OF THE ANCIENTS.

Mesopotamian Commerce.—Very early in the history of the world, the people living in the valleys of the Tigris and Euphrates rivers developed an important commerce. Their pursuits were agricultural. Goods were brought to ancient Babylon from Arabia, Syria, and Persia, and a very active trade grew up in gold, silver, metals, grain, wool, and building materials. Much information has been given on this subject by the inscriptions on clay tablets which have recently been found and deciphered.

We may place the beginnings of Babylonian trade about the year 3000 B. C.

Egyptian Commerce.—The Egyptians were more agricultural than commercial. The narrow strip of land on the banks of the Nile yielded little more than the vast population of the country consumed. Yet we find Joseph sold by his brethren to merchants carrying spices and balm and myrrh into Egypt for sale there. These goods and precious woods, ivory, gold, wine, and oil were there exchanged for grain, linen, weapons, rings, and chains by a system of barter. The earlier kings of Egypt discouraged commerce and it was not until about 600 B. C. that, under the encouragement of Necho, Greek merchants thronged into Egypt, and developed an active and important commerce. It was Necho who encouraged the Phoenicians to try to sail around Africa and who cut a canal across the Isthmus of Suez. Though this canal filled up with sand its course may still be traced.

Assyrian and Persian Commerce.—When in 745 B. C., Babylon, Armenia, Syria, and parts of Persia and Palestine were consolidated into one empire, the foundations of an important commerce were laid. Safety was insured to the merchant, and Nineveh, the capital, became a great mart for the exchange of wares. Though the empire was short lived, the extension of trade continued long after the fall of Assyria.

Persia was at the height of its power for two hundred years before its conquest by Alexander the Great (330 B. C.). It extended from the Mediterranean Sea to the river Indus; and from the Black and Caspian seas to the Indian Ocean and the Persian Gulf. This vast territory was larger than half of Europe, and the freedom of intercourse and the security which the rule of one sovereign gave greatly encouraged the interchange of goods in one of the richest parts of the world. "The wealth of Ormuz and of Ind" was proverbial even in Milton's time.

Phoenician Commerce. — The Phoenicians laid the foundations of what we now call trade and manufactures. They took raw materials which they procured from other countries, man-

ufactured them at home and distributed the products among other nations. Their ships went far to procure the raw products. We read of their visiting Britain to get tin from the mines of Cornwall. They called these islands the Cassiterites or Tin Islands. The Phoenicians were famous for cloths, glass, metal ware, the purple dye which they derived from the murex, a shellfish, and an extensive list of wares mentioned in the Bible. They dealt with their land neighbors by caravans, but at a period in the obscure past began those daring sea voyages which made them not only the great merchants but the explorers and colonizers of early days. Before 1000 B. C. they had trade with Cyprus and Rhodes. Soon the whole Mediterranean was traversed and daring explorers pushed out into the Atlantic. Carthage was the most famous of the many Phoenician colonies. After 1000 B. C., the importance of Phoenicia declined and Carthage fell heir to the western portion of her dominions and held them until Carthage herself succumbed to the vindictive persecution of Rome.

Greek Commerce.—For five hundred years preceding 600 B. C. Greece prosecuted a system of colonization in the islands and along the shores of the Mediterranean that ultimately gave to Greece a commanding position in the commercial world. She gradually absorbed all of the important trade of the eastern end of the Mediterranean, leaving to Carthage a part of the trade of the western end. The clay, bronze, and woolen industries were developed by Greece to an unprecedented degree as early as 500 B. C. For a little time the Persian invasion of Greece about 500 B. C. interfered with her commercial growth. But the successful resistance of Persia's efforts only heightened the prosperity of Greece and for the next two centuries Grecian commercial and material prosperity was marvelous. The most important markets of the world at that time were Ægina, a little island near Athens, and Corinth. From 500 B. C. to 400 B. C. Athens was the foremost commercial city in the world. She broke the power of Ægina, took away her commerce; and the Piraeus, the port of Athens, was the leading port of Greece until the conquest by Macedonia (about 330 B. C.). Silver and coin from the mines near Athens, oil, figs, honey, wool, marble, pottery, were the chief home exports, though many goods were brought from foreign lands to be transshipped by a carrying trade. The chief imports were wheat from the Black Sea, Sicily, Egypt, Syria, and shipbuilding supplies, fish, slaves, raw products, and luxuries, for which the whole world was ransacked.

With the fall of Alexander's empire about 300 B. C. Grecian commerce declined. Athens went down rapidly; Corinth survived for a time but we find now the rise of great cities. Before Alexander's time Syracuse (in Sicily), Athens, and Carthage were the only cities of the Mediterranean with a population over 100,000. About a century later (200 B. C.), there were four cities with a population over 200,000—Alexandria, Seleucia, Antioch, and Carthage. Syracuse had over 100,000. Corinth, Rome, Rhodes, Ephesus, and one or two others had about 100,000. Alexandria owed its prominence to the fact that it was the only good harbor on the north of Egypt from which the much desired grain of Egypt might be shipped; and in those days it was the greatest market and the largest city in the world.

Seleucia took the place of Babylon and was the beginning of the modern Bagdad; through it passed all of the trade from Persia.

Antioch was the point at which the trade of inner Asia centered, and under the fostering influence of Alexander and his successors enjoyed great prosperity.

Roman Commerce.—Rome was by no means a commercial city nor were her people of a commercial temperament. Rome was the executive department of the greatest administration. She organized and gave to commerce the thing most needed for its development—a sense of security and a protection all over Rome's vast dominions. An enormous population centered in Rome and the people consumed great quantities of food, which poured into the city in the form of either tribute or taxes. Rome then gathered up the threads of commerce as it had been developed by earlier nations and encouraged and protected it to a degree that had never been known before. Up to the time that Rome took the control of practically the known world (from 200 B.C. on) the East had been the foremost in all departments of life, and the West was very backward. The western world owes its development to Roman influence, which was undoubtedly great. Though the discipline was severe under relentless forces such as Julius Caesar, it was what the West needed. Yet it was surprisingly slow to profit by it; for the people seemed stolid and made comparatively little progress. The chief and almost the only industry of western Europe was agriculture, and the people seemed content to raise enough for their own needs and enough for the Roman taxgatherer, so that there was no surplus upon which to lay the foundation of commercial enterprise. When Rome fell (476), these countries lost the protection which Rome had afforded them for nearly five centuries and the people fell a prey to the ravages of invading forces, which hastened the decline that even Charlemagne (800) was unable to stop, and the "Dark Ages" fell upon Europe and its people.

COMMERCE IN THE MIDDLE AGES.

Feudal System.—When the executive and organizing power of Rome was withdrawn from Europe, the government found itself unable to enforce its commands, to collect its taxes, or to perform any of its governing functions along the systematic and effective lines which had been the key to Roman power. Other means had to be adopted and the Feudal system grew up to take the place of government by a central, controlling executive. Powerful feudal lords were told that they must look after and be responsible for territories under their control, collect taxes, dispense justice, exercise governing power, and in return to the king or ruling authority render service in time of war and contribute to the revenues. In place of one central governing power, we find in a country like France in the tenth century probably over 10,000 little self-governing localities, unorganized, disconnected, and in no way united for any common purpose

or with any definite aims. Roads were neglected, so that traveling was often impossible, and they were infested by bands of robbers who plundered and murdered. Furthermore, taxes and duties were levied upon the merchants at every stage of their journey. They were obliged to travel in bands or companies for mutual protection and even then suspected their fellow travelers. The government sought to correct conditions by passing laws which had the effect of restricting still more the little commercial intercourse that was possible.

Markets.—Out of this fearful condition of robbery, murder, plunder, and suspicion grew by law the forming of markets where transactions involving more than a stated sum should be conducted in the presence of officers who should witness the exchange and make it lawful.

Villages.—Out of the feudal system grew the gathering of people in little villages of 100 people under the sheltering and protecting shadow of the feudal castle. The needs of the people in these villages were few and these they were able to supply for themselves. Commerce was to an extent unnecessary. With the people it was either a feast or a famine. When crops were good there was an abundance of food with no means of moving it for sale in other places. When crops were bad there was a famine, for there was no means of obtaining food from other points. So pestilence and famine often added to the miseries of the people, especially in times of feudal war when the fields were devastated or when agriculture was impossible.

A few goods were obtained from outside. Among these were salt, iron, millstones, and there was always a trade in horses and cattle, if these could be driven safely past the bands of roving robbers.

Slave Trade.—All Europe was interested in the sale of slaves. The chief markets were in the cities of the Mediterranean, on the North and the Baltic seas. Bands of slaves, loaded with chains, were driven about from one country to another. Even Bristol, in England, was a slave market in the eleventh century. Many are the regulations regarding the buying and selling of slaves that are to be found upon the law books of England, even as late as the reign of King Alfred.

Towns.—After the year 1000, towns began to spring up over Europe, along the sea coast, and at the intersection of roads. With the rise of towns, manufacturing increased in proportion to the size of the market. In the thirteenth and fourteenth centuries few towns in England had more than 10,000 inhabitants and the very great majority of them had fewer than 1,000. Nuremberg and Strassburg on the continent had not over 20,000, and Frankfort on the Main had fewer than 10,000.

Guilds.—Both merchants and workmen formed associations, called guilds, for their protection and benefit. The merchant guilds were at first private societies, but as the towns found it to their advantage to have the merchants encouraged and protected these guilds became a part of the town government. The chief right which merchant guilds enjoyed was that of exclusive trading in the town. Outsiders might come and sell wholesale to the merchants, but they might not buy without the consent of the merchants' guild.

The craft guilds were societies of workmen which enjoyed a monopoly to the extent that no one might work at his trade unless he was a member of a guild. This monopoly was, at a later time, greatly abused, and interfered with commerce.

Fairs.—As barter or exchange formed so large a part of early commerce, it was found difficult for a seller to meet with the person who had what he wanted to buy and who was willing to exchange it for what he had to sell. Fairs were arranged to meet these conditions, and were held at certain places at stated times for the convenience of the people. There is something of the same accommodation provided for in "market days."

The oldest fair in Europe is that of St. Denis at Paris, founded in the seventh century. Others are that of St. Germain in Paris, Champagne, Bruges, Cologne, Frankfort on the Main, Geneva, Lyons. Stourbridge Fair, near Cambridge, was the largest in England. That of Winchester lasted for 16 days.

Sea Trade.—The Scandinavians were the leaders of the sea trade of Europe. Their boats were small and were used for shore trade and for short trips. The Crusades caused a great development in the sea traffic in the Mediterranean. After the introduction of the mariner's compass, a little before 1200, longer sea voyages became possible; and by 1300 the compass was in general use throughout Europe. With the extension of sea trading there came a great increase in piracy and privateering, which retarded the development of this branch of commerce.

Trade with the Orient.—Europe in the Middle Ages obtained many goods from the Levant which could not be obtained at home. The greatest item of trade between Europe and the East was slaves. These were exported from Europe to the great market of Cairo, and were brought from western Asia and Africa. Among spices brought into Europe were pepper, from the East Indies; cloves from the Moluccas; cinnamon, nutmegs, mace, and ginger. Drugs, sugar, precious stones, and other costly luxuries; indigo, madder, carmine, Brazil wood (which instead of taking its name from the South American country, really gave its name to the country), saffron, shellac, and alum; cotton, and silk. These were among the things which the Crusaders had learned about in the East and of which they had brought back home a taste.

Trade of Venice.—The greatness and the decline of Venice depended upon the trade between Europe and the East. Her merchants penetrated every known country, a system of colonization developed her trade, and her power gave security and protection to all who traded under her flag. She had an overland trade with Germany and with northwestern Europe. She was not content, as Lisbon was at a later date, with receiving goods at her docks and leaving the distribution to other people. She followed up the trade and from its development rose to be one of the foremost of the commercial cities of Europe, if not of the world.

Other Southern Cities.—Genoa shared in the commercial advantages which the Crusades conferred upon southern cities. Pisa, her rival, was conquered at Meloria (1284). Genoa then conducted almost continuous but generally unsuccessful war with Venice; and, while contributing largely to the development of commerce and finance, suffered from having a less favorable location for trade than that of Venice.

Florence was the chief commercial city of the interior, and, though it had no seaport until the conquest of Pisa and Leghorn (1400), carried on a profitable trade in wool and silks.

Marseilles, under the influence of the Crusades, grew commercially, and dealt in wool, linen, wood, metals, wine, oil, and soap.

Commerce in Spain was retarded by the conflicts between the Arabs and the Christian kings, yet Barcelona was one of the most prominent of Mediterranean ports. Her trade with Egypt, Syria, and the Grecian Archipelago was fostered by the protection of the kings of Aragon.

Trade in Northern Europe.—The Baltic exported raw materials, amber, fish, honey, butter, salt meat, furs, skins, tallow, timber, pitch, tar, and turpentine. This class of goods contrasts strangely with the luxuries and delicacies in which Venice and the southern cities dealt. Transportation both by water and on land was cheap, and bulky articles of trade were more easily transferred in the north than around the Mediterranean.

Hanseatic League.—The German towns were not well protected from attacks by feudal lords or by each other. They wisely united for common protection in the fourteenth century. The league comprised the chief German seaports, towns in the interior, and other foreign cities to the number of 100. Lübeck, Hamburg, Brunswick, Cologne, Bruges, Dantzig, Königsberg, and Novgorod were the leaders in what grew to be a great commercial movement equal to that of the later Dutch and the English trade. Factories, in the sense of fortified depots, were centers where trade was regulated by a strict discipline.

Bruges occupied a peculiar position in a sort of neutral zone to which merchants from all the known world flocked in the fourteenth century, making it the greatest market of northern Europe. But as the people of Bruges were content to let foreigners carry on the trade, this importance steadily declined, and in the fifteenth century the trade was taken by Antwerp, which was dominant for a full century.

Trade in England.—From Roman times England enjoyed a monopoly of the tin trade, which brought merchants to her shores in great numbers for several centuries. In mediæval times she added a monopoly of wool. While the merino of Spain yielded a finer grade of wool, sheep throve better in England than elsewhere. From export in wool, England grew to the manufacture of it. But trade was in the hands of Hanseatics, Venetians, and other foreigners in England, who dealt largely in wool, sheepskins, leather, tin, and lead. But by the sixteenth century English merchants awoke from their inactivity and assumed the control of her commercial interests.

Commerce of Modern Times.—Modern commerce is coincident with the great period of exploration and discovery which began about 1500. The discovery of the Cape of Good Hope in 1487, and of the sea route to India in 1498 under the encouragement of Prince Henry of Portugal, introduced oceanic commerce with India and did away with not only the hardships and difficulties which the overland route from India presented, but also with the tolls, charges, and imposts which had hitherto greatly hampered and retarded commerce. The discovery of America in 1492 and its subsequent development poured into Europe great quantities of precious metals, and the yield of gold in 1550 through the discovery of the new mines in Mexico and Peru gave annually to Europe five times as much gold from America as had previously been produced by the mines of Europe and Africa. The immediate effect of these discoveries was the transfer of the trade from the Mediterranean seaports to those of Portugal and Spain.

Spanish Commerce.—In the Middle Ages, Spain had exported wool, iron, and wine. Under Ferdinand and Isabella the textile industries of Toledo grew to considerable proportions. Spain then imported raw silk and exported the manufactured product; factories arose all over the country; her economic development was most wonderful. Equally astonishing was the rapid economic decline that followed. The causes of this decline are remarkably complex; chief among them was bad government; the burden of taxes and the customs duties were intolerable; the colonial policy was bad; at almost every turn trade was restricted; and though in 1750 Spain had attempted to reform her colonial system for the betterment of trade conditions, the effort was made too late.

Portugal.—The discovery of the sea route to India benefited Portugal first, and this Indian trade was for a long time left to Portugal, while Spain enjoyed the great prizes from the New World. Yet she enjoyed it for only one century. Portugal had suffered from the bad effects of Spanish rule, but the loss of her trade was caused largely by her inability to contend against stronger countries like England and Holland, against whom the Portuguese financial resources were too meager to struggle successfully. In a short time Portuguese power in India was broken by England, and the Dutch took from her her eastern islands.

The United Netherlands.—Under the political oppression by Spain, the Dutch suffered commercial restrictions, and they were forced to find their commercial development at sea on account of the difficulties at home. With their political independence their commercial development rapidly increased; their colonial policy was comparatively sound. Through the Dutch West India Company, founded in 1621, the trade west of the Cape of Good Hope was controlled; and, while the Dutch possessions in Brazil and New York were not long held, several small stations upon islands in the Gulf of Mexico and elsewhere served as convenient points through which the Dutch developed their remarkable carrying trade. The development of the East India Company in 1602, a large share of the Baltic trade, a fleet of over 2,000 boats in the

Dutch fisheries, and remarkable progress in manufactures, together with the largest share in the distribution of goods to other countries, form a slight measure of the importance to which the Dutch attained in the early part of this period. The commercial decline in the Netherlands came in the century between 1650 and 1750. The causes of this decline are exceedingly complex, and the most certain thing regarding this difficult economic problem is the fact that the trade was lost to England, which had rapidly grown stronger from the time that Cromwell began to employ the forces of England for the development of her commercial importance. Indeed, it is to be noted that everywhere throughout the world commerce in all nations was very rapidly increasing, so that it may be said that in this development other countries grew so much more rapidly than the Dutch that the internal causes for the decline of the trade had a greater effect than would have been the case under normal conditions. The failure of the Dutch East India Company in 1782, after a career of 200 years in which the dividend ranged from 12½ to 50 per cent., was the result of the inability of the Dutch Company to hold its own against English development in India. The Dutch East India Company left debts of over $50,000,000, which were assumed by the Dutch government.

England.—Up to 1500 the commerce of England was largely in the hands of foreigners, and the trade was principally in raw materials. The Tudor line of kings were skillful commercial diplomats, and the privileges which they secured for English merchants in other countries were the beginning of the commercial growth of England. The extension of sea voyages, beginning with those of the Cabots to America, the remarkable growth of English seaports, and the subdivisions of trade among mercantile companies throughout the colonies, are the most noticeable features in England's commercial policy. The great revolution in manufactures in the eighteenth century, in which cotton, wool, and iron played the most important part, extended both the range of her commercial enterprises and greatly increased her commercial territory.

France.—France did not share in the commercial development of Europe to the same extent as the other countries, chiefly because of her handicap by the Hundred Years' War (1339-1453), which was fought upon French soil and consequently injured her more than it did England. The civil and religious wars which immediately followed, and the consequent expulsion of many of her citizens, greatly contributed to her commercial loss. The absolute power of the king and the slow recovery from the effects of the feudal system also tended to keep down the development of the peasant and lower classes. Under the monstrous burdens of taxation and privileges, commercial development was utterly impossible. A number of commercial companies were founded about 1600, to whom great privileges were accorded in all parts of the French colonies. To foster and develop these, emigration was greatly encouraged, and France soon assumed a very prominent place in the colonial development of the world, but her enterprises in this respect were failures, and these failures are to be traced to one source, namely, to the king. The policy which Louis XIV. adopted destroyed the power of France in other countries, and the year 1763, which closed the Seven Years' War by the Treaty of Paris, also closed these unsuccessful attempts at colonial development by France. At home commercial enterprise increased despite the hampering by customs, tolls, the guild system, the separation of trades, and the burden of restrictions upon manufactures, together with the granting of special privileges to certain manufacturers to the discouragement of others.

German States.—With the decline of the Hanseatic League, when Denmark and Sweden in 1535 broke the monopoly of trade with the Baltic which it had previously enjoyed, and with the expulsion of the members of the league from England by Queen Elizabeth, commerce throughout the German States rapidly declined. In 1600, of the Hanseatic League there remained only the three towns of Lübeck, Bremen, and Hamburg. The cities of southern Germany suffered by the loss of trade consequent upon the discovery of the sea route to India. The burdens of taxation upon merchants, the tolls which hampered the passage of wares from one country to another, the rise of the Dutch to independence, the internal dissensions caused by the Thirty Years' War, and the restrictions of manufactures by the guilds through their monopolies, caused a commercial decline which was most evident throughout the eighteenth century.

Commercial Development of England.—England's great commercial development during the latter part of the nineteenth century was due to three great causes:—

1. The advanced position and ability of the English people in industrial and mercantile spheres.

2. The geographical position of England, and its resources of coal, gave it most favorable facilities for transportation and use of steam machinery.

3. The encouragement of trade by the commercial policy of the government, including repeal of the corn laws and the adoption of free trade principles.

The leading place in the exports of England has for long been held by manufactured cotton goods (amounting to over 5,000,000,000 yards of cotton cloth annually), manufactured iron and steel, machinery, woolen goods, linen goods, leather goods, chemicals, jute, pottery, etc. The imports comprise foodstuffs and raw materials. London is not only the chief port of the United Kingdom, but of the world, because of its enormous import trade. Liverpool, the second port, exceeds London in its exports. Manchester, until recently an inland town, is now, by reason of its ship canal, the sixth port in the Kingdom. England's trade goes to the countries of Europe, to her colonies and dependencies, and to the United States in the order named. A certain decline in England's trade is explained as due (*a*) to insufficient knowledge of the needs of other nations and (*b*) to an unwillingness to adopt trade customs of other nations.

German Zollverein.—A custom-union or Zollverein with a common tariff on the frontiers and free trade within was formed in Germany

in 1828, with three groups of states: one in the north, Prussia and others; a second in the south, comprising Bavaria and Württemberg; and a third embracing a number of states from the center to the coast. From this beginning resulted in 1834 one great union including two thirds of the area and population. After some attempts at free trade, the tariff of 1879 was adopted, which with some changes forms the basis of the present tariff.

COMMERCIAL DEVELOPMENT OF THE UNITED STATES.

Within a little more than a century the United States has passed from the position of a humble aspirant struggling for recognition among the minor countries of the world to the position of one of the richest of all nations in wealth, internal trade, foreign commerce, organized manufacture, area, and population. From a population of 4,000,000 in 1790 to 87,000,000; from a strip along the Atlantic coast to an area embracing nearly half of the continent of North America; from a condition of almost national poverty to the position of a nation almost indifferently assuming burdens of debt, which are so speedily wiped out as to amaze the older nations of the world; from the most meager internal trade to one of the greatest of all nations,—such in a few words has been the astonishing march to the proud economic position in commerce which the United States now occupies.

Early Exports.—In the year 1790 the total exports of the United States but slightly exceeded $20,000,000. Of these the North supplied flour, wheat, lumber, corn, fish, and potash; the South contributed tobacco, rice, indigo, lumber, and naval stores. These are nearly all agricultural products, and of the total quantity tobacco and wheat form nearly one half the total. Clearly the chief occupation at that time was agriculture. The supply of grain was of the utmost importance to the American colonies, and upon this the nation at that time largely relied for its sustenance, consequently but a small quantity of it was exported. It must also be remembered that the exports of the year chosen for illustration were the result of nearly two centuries of agricultural experiment in the nation.

Early Imports.—It is reported that for the year 1791 goods to the value of $25,000,000 were imported. These were manufactures, sugar, molasses, coffee, tea, and liquors. The manufactures were principally those of metal, glass, and the textiles. As early as 1790 there was a cotton factory at Pawtucket, Rhode Island. Factory production, however, did not become general until much later.

Cities of the Period.—New York in 1790 was the most populous city, boasting 33,000; Philadelphia was second, with 28,000; and Boston had 18,000. These, it will be noted, are seaports, and it was in these that the greatest municipal development first took place. From them trade was carried on with Great Britain, France, Spain, the Netherlands, and Portugal. Some slight reaching out towards Asia and Africa had been made, but such goods as were obtained from those countries were procured usually through English agents. Naturally England occupied the first place among the foreign nations trading with the United States, and a very large part of the trade with other European countries was conducted through England. Trade with Great Britain was hampered by the British duties on imported foods. In Colonial times a large quantity of lumber, grain, and fish was exported from the middle and northern colonies to the West Indies in exchange for sugar, molasses, other tropical products, and slaves; and this West Indian commerce continued important after the Revolution, although it was seriously restricted by the laws of Great Britain prohibiting all non-British ships from engaging in the commerce of the British possessions.

Shipping.—About the year 1790 a very considerable increase in the business of shipbuilding took place. The raw materials were extremely abundant in America, and the United States was able both to supply her own demand and to sell ships to the nations of Europe. Notwithstanding the efforts to exclude American ships from a share of the carrying trade of the world, nearly one half of the shipping intercourse between the United States and Europe was conducted by American-built ships. In 1784 the first American ship sailed for China. In 1788 two sailed from Boston to Mauritius and India.

Early Growth.—The European policy adopted towards America for some years after her successful struggle for independence, while not directly one of antagonism, was certainly not one of encouragement. English statesmen had no desire to throw away so profitable a trade as was enjoyed with the United States, and while the sympathies of France, Spain, and the Netherlands lay with the new country they did not feel inclined to take from her goods which they did not really need, although they were quite willing to have her buy theirs. It is true that England did strike a blow at the new country by closing the ports of the British West Indies so far as she could against the American ships. When to these difficulties are added the more important one of America's inability to protect adequately her ships upon the sea, and also the political restrictions, it is not surprising that the commerce of the first 15 or 20 years of the nineteenth century should have shown remarkable fluctuation; but gradually these restrictions were removed and the commercial standing of the United States was much improved by the importance of her export trade in cotton. The Jay treaty with England in 1794 benefited the United States commercially, though it did not secure all that was desired; but the one great cause of the improvement in the commercial condition of the United States was the necessity of the nations of Europe brought on by the wars which followed the French Revolution. Nearly all the nations were maintaining large standing armies, which meant the withdrawal of a great many men from agricultural occupations in their countries and the consequent falling off of the food supply. The domestic and foreign exports of the United States increased wonderfully during this period, and the ability of the United States to secure a safe position among the merchant marines of the time was due to the fact that she succeeded in maintaining her neutrality. Between the

years 1789 and 1810 the tonnage engaged in foreign trade increased from 100,000 tons to over 900,000. During this period there are intervals in the prosperous growth of commerce which are quite noticeable. For a few years following the Peace of 1801 trade with Europe declined. When the war opened again the exports exceeded $100,000,000 in 1806 and 1807; and though between 1803 and 1812 over 1,500 American ships were seized in Europe and the greater part of them condemned and their sailors impressed into the naval service of England, and though an embargo was laid on all vessels in December, 1807, yet, despite these restrictions both at home and abroad by which the commercial prosperity of the country was greatly depressed, the American people were commercially and navally strong enough to maintain their rights in a successful war with England in 1812.

Commercial Expansion.—After the war with England the growth of the commerce of the United States is remarkable for its steadiness. This is in marked contrast to the fluctuations of the period immediately preceding, although it was not until the year 1835 that the exports of the nation reached the figures of the year 1807. It was the policy of European nations, after, as it was before, the Napoleonic wars, to restrict the introduction of foodstuffs by heavy duties. Under this system the United States suffered, and in fact did not wholly recover until after the repeal of the Corn Law in England in 1846. At the same time the United States was making enormous additions to its territory. The Louisiana Purchase of 1803, the annexation of Texas in 1845, the acquisition of the Oregon Territory, or the Great Northwest, in 1846, the Mexican accession in 1848, and the Gadsden Purchase of 1853, gave to the nation practically all of the continental territory it now occupies. But with this added territory came the retarding lack of transportation, which was overcome in time by the building of good roads, the utilization of the magnificent waterways of the country which the steamboat made possible, the building of canals in every direction, and the extension of the railroad system, though in the year 1850 there were comparatively few railroads west of the Alleghany Mountains. During the 10 years immediately preceding the Civil War a great extension of the railroad system in the West occurred, and other improvements in transportation were actively introduced.

Merchant Marine.—While the country was struggling with the great problem of internal transportation, American shipbuilders were holding their own in the development of the merchant marine. Among builders of wooden ships the Americans took first place. The year 1855 stands out as the year in which the greatest tonnage was built in the United States, and this was caused by the discovery of gold in California and the consequent great demand for transportation to the Pacific coast, and the need of transport for European nations engaged in the Crimean War. In the early days of the development of the merchant marine, foreign nations imposed very heavy port duties on American vessels trading with them. The United States naturally retaliated and forbade coastwise trade in America by foreign vessels, refused American registry to foreign-built vessels, and would not allow ships built abroad to sail under the American flag even when bought and owned by American citizens.

Before the Civil War.—In tracing the commercial development of the United States it is convenient to compare the period immediately preceding the disturbing influence of the Civil War with those of both earlier and later times. While the exports in 1790, as noted, yielded slightly more than $20,000,000, it is to be observed that in 1860 they had risen to over $353,000,000. The most important were wool, silk, cotton, and linen, which comprised about one third; iron and steel amounted to $21,000,000. Probably the most notable feature is that before the war the importation of raw materials was very slight, leading to the conclusion that few manufactures were conducted in this country and that the finished product was bought abroad. Among imports, sugar, coffee, tea, tobacco, and molasses amounted to about one fifth of the total.

Manufactures.—The period immediately preceding 1860 was a sort of preparatory system during which the nation was getting ready for the marvelous advances made in the iron and cotton manufactures especially. One of the greatest indications of this was the increased consumption of coal. The United States was slow in following the improvements in the manufacture of iron which had been for years familiar in England. Among the many reasons for this may be mentioned the difficulty of transportation. The coal and iron beds in the United States do not lie so close together as they do in England, and the difficulties of transporting coke and coal were largely responsible for the slow growth of this industry. But however slow the development of the iron and steel manufactures, the vast dimensions to which they have of late years attained have made abundant compensation. The introduction of improved machinery for the manufacture of cotton and the peculiar advantages which the Americans enjoyed for procuring the raw material placed that industry in the front rank by the year 1850, but the woolen industry has at no time been so well developed, largely owing to the fact that the quality of wool grown in the United States is by reason of its short fiber not so well suited for manufacture as is that of other countries.

The North and South.—During the slave period the North outstripped the South in manufactures. The presence of slavery developed the agricultural aspect in the South, and attention was there devoted to the production of raw materials, which was cheaply conducted by slave labor. For many years the South was entirely dependent upon the North for its manufactured goods. At the same time great discontent was manifested by the people of the South by reason of the protective duties imposed upon manufactured goods from 1816 onward. The general complaint in the South was that the tariff was an unjust imposition upon the people of the South, and that it was designed to protect unfairly the people of the North, who enjoyed all of the benefits from it. After the year 1830, when duties were from 40 to 50 per cent., the tariff was considerably modified until in 1842 the tariff level was about 20 per cent., but was

speedily changed back to a higher level only to be again reduced just before the beginning of the Civil War.

Southern Ports.—In the rapid development of cotton exports in the years before the Civil War, Southern ports attained a remarkable degree of prominence, especially New Orleans, Mobile, Charleston, and Savannah, which, measured by exports, surpassed many of the Northern ports; measured by imports, the Northern ports maintained their high position.

Later Development of Commerce.—The importance at the present day of the United States among the commercial nations of the world is best shown in detail by the comparative tables that are to be found elsewhere. The fact that the exports of the United States reached in 1900 the enormous total of $1,394,000,000 is of itself sufficient proof of the impossibility of following in detail the remarkable growth in every direction which has occurred since the Civil War. An important factor in the exports is the agricultural production of the North, and the great increase in this is largely due to the improvements in transportation which have rendered it possible to throw this immense contribution to the world's sustenance upon the foreign markets quickly, cheaply, and easily. The great improvements that have followed in agricultural machinery, and the stupendous scale upon which agricultural enterprises are conducted in the Great Northwest, are also important causes. For purposes of comparison it may be stated that a ton of wheat may now be carried from Minneapolis to Liverpool at a less rate than a farmer 30 years ago could draw it fifty miles by wagon.

TRANSPORTATION.

The Arteries of Commerce.—Transportation is at all times a true criterion of material progress, and its history is interwoven with that of commerce and civilization. Livingstone expressed the opinion that if civilization was to ever penetrate the dark continent of Africa, it must be the result, not of the unaided missionary, but of new trade routes. Cut off the means of transport from any place, however rich in natural wealth, and ruin and stagnation will quickly follow.

(*a*) *On Land.*—In primitive times, as even to-day in unfrequented and inaccessible regions, we find primitive conditions. The sturdy shoulders of the mountaineer, or the head of the swarthy negro, must perforce be employed when other methods are unavailable. In any form of land transportation, the first motive force is always the physical strength of man himself; the second, the strength of animals subjugated by man, (1) as beasts of burden, and (2) as beasts of draught; and, finally, the giant forces of steam and electricity obedient to man's will. In America, at the time of its discovery by Europeans, human strength was the only known means of land transportation, for the natives were on the whole ignorant of the use of beasts of burden; indeed, the fauna of the continent was almost devoid of any suitable species. The Peruvians alone seem to have had, in the llama, the only available beast of burden. Mexico presents a phenomenal instance of commercial development resting almost solely on the most primitive form of land transportation. The Mexican merchants traveled about the country with a horde of porters, each carrying a load of 50 or 60 pounds, and traveling about 15 miles a day. This lack of any natural species suitable to burden-bearing was a heavy handicap to the early races of the new world, which makes the extensive land commerce of the Mexicans a matter of amazement.

The second stage in the development of land transportation is the employment of pack-animals—the ox, the ass, the reindeer, the horse, the camel, the elephant, etc.—animals which were in use in the eastern hemisphere from time immemorial. Their use marked a great advance in efficiency, speed, and economy. The camel, in particular, was intimately associated with the development of eastern trade; in fact, it was the camel alone that made this trade possible. Following the use of pack-animals is that of drawn vehicles; but although wheeled vehicles were known in China, India, and Egypt from remote antiquity, while, as Herodotus tells us, the ancient Scythians or Tatars pitched their tents upon cumbrous wagons, each of which needed over twenty oxen to haul it, yet, as the construction of roads did not keep pace with inventive skill, the vehicles were only of limited usefulness.

The third or modern stage is characterized by the employment of new natural forces, which enable man to overcome all physical obstacles, or bend them to his will.

It must be noted that each stage does not entirely supersede the one before it; for in methods of transportation there is a general interdependence, and newer methods do not wholly supplant, but merely limit the scope of the older. In a less degree, the interdependence of land and water transport is unquestionable. In fact, at the present day, every form of transport that has ever obtained exists in some part of the world or another; whilst any seaport town bears evidence to the mutual dependence of every form of motive power. The case is analogous to the biological fact that numerous stages and types of development are represented by surviving species.

(*b*) *On Water.*—Water transport has always been the more important in the history of the world's commerce. The river was the highway of trade long before roads were dreamed of. The great waterways became the first seats of population and empire. They were the link with the outer world, and were naturally the first channels of transport to be developed. Water transport has ever been cheaper than transport by land, and was one of the earliest means of international trade. Trade invariably seeks the lines of least resistance; hence the routes of ancient commerce followed the world's waterways, and were only checked or cut asunder by barriers of transport. These breaks in transportation, necessitating the transfer of commodities, determined the location of industrial centers. The greatest commercial cities, from ancient times to the present day, have invariably grown up near the junction of land and water transport. Maritime commerce along the coasts grew naturally out of the river trade; and when the art of navigation had so advanced that

the passage to India around the Cape and the crossing of the Atlantic extended the horizon of mediæval enterprise, maritime transportation became the paramount agent of international commerce, and has remained so to the present time.

The same natural forces that revolutionized transport on land created a new era in the progress of water transportation. The triumph over natural obstacles has made for advance in the fundamental requirements of speed, capacity, and economy.

Canals may be regarded either as a branch of land or water transport. Their greatest historical importance was just before the rise of railways. As a branch of land transportation they are disappearing, but as a branch of water transport canals have entered a new stage of development. The modern ship canal has played a part of vast economic importance. It cost the Canadian government over $62,000,000 to have the Gulf of St. Lawrence linked to the Great Lakes; but to-day that seven-linked chain is the greatest freight route in the world, and nearly one third of the population of America is dependent on it for their export and import trade. Bread in Britain would be dearer but for this mighty waterway. The gold-digger would not live in comparative comfort in the far Northwest, if the Yukon, like a natural canal, did not thread a chain of lakes, and on its broad waters in summer and its ice in winter, bear the freight and the mail for the hardy white man.

GLIMPSES OF THE PAST.

I. The Old World.—The Phœnicians were the first navigators and maritime carriers of whom we read. With their oared barks, steered close in shore, they established a route between Egypt and Syria, the corn and ivory of the Nile, and the silk, oil, and spices of western Asia passing through their hands. Then, becoming bolder in navigation, they hoisted sails, and in the days of Solomon penetrated the Red Sea and searched the inlets of the Mediterranean. The empire city of Carthage was founded by them, which marks another epoch in the history of transportation. The strength of Carthage was in her ships. Her mariners passed the dreaded Straits and founded the port of Cadiz; and long before the Roman legions had pierced the hostile north, they had established depots on the shores of Gaul. Carthage, after the destruction of Tyre, became the greatest power in the Mediterranean, inheriting the trade of her Phœnician ancestors with Egypt, Greece, and Asia Minor.

Meanwhile, from early historic times, the caravan movement played its part, and the ship of the desert vied with the ship of the sea as a factor in international trade. By this joint means, commercial intercourse between the Mediterranean and the far East was established. An important route lay by way of the Caspian along an arm of the Oxus, thence by caravan to the Indus, and thence to the marts of India. Another route was through Syria by caravan to the Euphrates, and thence down the river through the Persian Gulf. This route was the making of Palmyra. Maritime transport received a blow from the destruction wrought by the Romans. First Carthage, then Corinth and Athens, and, some 50 years later, Palmyra, in one short period all were annihilated. As time went on, the main routes still centered at the eastern ports of the Levant, and Constantinople rose to greatness and power as the joint mart of the Christian and Moslem traders. The downfall of Constantinople was followed by the rise of Venice, and fresh impetus was given to transportation. The Venetians stretched their hands across the sea, and their ships traded with the known world. But what gave them commercial preëminence was that transportation became with them a science, which they developed assiduously. The Crusades materially promoted the expansion of Venice, besides stimulating international trade generally.

In the North, the opening of trade routes, or, in other words, the development of transportation, lifted the countries on the Baltic out of a state of isolated barbarism. The Hanseatic League (founded 1241) rivaled the enterprise of the Mediterranean powers, and extended its trade by developing its transport on sea and land.

With the conversion of the Turk to Islam came the first staggering blow to Christian trade; the Turk became the gatekeeper of the East, and barred the way to the Western trader. The blocking of the route to India transformed the pent-up energy that had been created, and, as the use of the mariner's compass was better understood, a new tide of discovery set in, and the all-water route to India was the immediate result. This, and the discoveries of Columbus and Cabot, sounded the knell of Venetian and Hansa trade. Gradually the new trade routes were diverted to the North Sea. Thus it came about that the blocking of the trade routes between West and East largely brought about the industrial reformation of Europe, the downfall of feudalism, and the discovery of a new world.

II. The New World.—The aborigines of America, in their warlike excursions, were accustomed to cover enormous distances, and their system of transportation was evolved by the exigencies of a roving life. Though the canoe of the Indian has given place to the steamboat, the trail to the iron way, the pack-horse to the locomotive, yet many of the avenues of modern trade were traversed for centuries before the coming of the white man.

European immigration conferred a lasting boon upon the natives. It gave them the horse, and this the Indians soon learned to utilize as a means of transport. The earliest vehicle devised by the prairie Indians simply consists of two branches or tent-poles attached to the horse like inclined shafts, the ends dragging on the ground. On this is fastened the tent-skins and baggage, providing a seat for the squaw and children. This primitive vehicle is admirably adapted to primitive roads, and not only is it still in use among the Indians, but it is the sole means of locomotion in the forest regions of north Russia, where no wheeled carriage could be hauled through the matted undergrowth of the virgin forests.

The first European settlers depended upon the natural water courses of the country, and it was long before they ventured from navigable streams to seek the wealth of the interior. The vessels used by the east coast settlers blended the types of the Old World and the New; but

none of them were very large. Ships of the sixteenth and seventeenth centuries were usually not of more than 100 tons burden. The first vessels to explore the Maine coast were two barks of 50 tons and 26 tons respectively. The shallop was in much favor in those days; but this vessel was superseded by the sloop and the chebacco boat or pink. Shipbuilding reached a high level in the new colonies. In 1769 they launched 389 vessels—113 square-rigged and 276 sloops and schooners—of an aggregate burden of 20,001 tons. Of these Massachusetts provided nearly one half, New Hampshire and Rhode Island the next larger number, while New York had only 955 tons to her credit. In that year the total imports amounted to £2,623,412, and the exports to £2,852,441. For shallow water navigation the native canoe largely gave place to the skiff or bateau, whilst for down-stream transportation a variety of rude craft came into vogue, such as flatboats or "broadhorns," and arks and rafts of varying dimensions. Before the days of the Erie Canal, the farmers of western and central New York sent their produce to market in arks down the Delaware and Susquehanna. Rafting lumber has continued on an extensive scale in many parts of the United States. For freight and passenger service, "Durham boats" (large canoes 60 ft. by 8 ft. by 2 ft. and drawing, when laden, 20 inches of water), keel boats, and barges came into use. In July, 1794, a fortnightly mail service was established from Wheeling to Limestone (Maysville), Ky. The mail boats were somewhat like whale boats, 24 feet long, and manned by four oarsmen and one steersman. In the same year packet boats for passengers first made trips from Pittsburg down the Ohio, well armed to repel attack. An interesting description of these Ohio keel boats in 1833 concludes thus: "They are sometimes towed up by the steamboats, but it is an *unpopular innovation*." Team boats, or boats propelled by horse power, were in use chiefly as ferryboats. This old Roman expedient was employed at some of the New York ferries from 1814 to 1824.

III. Public Highways.—The construction of roads had an important bearing on civilization and on commerce; and, though many of the historic roads were designed to further the cause of war, they permanently fostered the pursuits of peace, and laid the foundations of social progress. The Greeks were among the first to give attention to public highways, but it was reserved for a commercial people to develop them for travel and transport; hence the invention of paved roads is attributed to the Carthaginians. Rome still further developed this particular industry for military purposes. The first Roman road was the Via Appia, the second the Via Aurelia, and the third the Via Flaminia. Gibbon in his "Decline and Fall of the Roman Empire" says that all the cities in the different parts of the empire "were connected with each other and with the capital by the public highways, which, issuing from the Forum of Rome, traversed Italy, pervaded the provinces, and were terminated only by the frontiers of the empire." This mighty chain stretching from the north of Britain to Rome, and from thence to Jerusalem, measured no less than 4,080 Roman miles, or 3,740 English miles, in length. Many of these roads are still amongst the best in existence. The ancient Peruvians, too, must be numbered amongst the great road makers of the past. There is a magnificent road from Quito to Cuzco in Peru, extending into Chile over the Grand Plateau. There are roads in Peru 2,000 mile long which are marvelous feats of engineering. The downfall of Rome and the establishment of the feudal system caused road building to be neglected for many centuries. Nor was the work of the Romans continued on any organized plan till the establishment of the French national power in the seventeenth century. The far-sighted policy of Louis XIV.'s minister, Colbert, has borne good fruit, as the splendid system of roads now testifies. By establishing a network of navigable canals in connection with these roads, France is less dependent on her railways than any other civilized country. The Grand Trunk road in India must not be omitted. This fine road, stretching from Calcutta to the northwest frontier, was first planned by the Afghân emperor, Sher Shah, in the sixteenth century, and completed under the administration of Lord George Bentinck. In spite of railways the economic importance of such roads is still very marked, for they have worked a silent revolution in the cause of civilization.

Down to the eighteenth century, England was devoid of any system of national roads, and road construction was left to the local authorities. Turnpikes, so called from the pike or bar which can be turned athwart the road till the toll is paid, were first constructed in the beginning of the eighteenth century.

The United States was much later in developing a road and canal system than England or France. In 1792 the first turnpike road in America was built between Philadelphia and Lancaster. These turnpikes lessened the cost of transportation, and made the regularity of transport possible in all seasons. By the year 1828 there was 2,380 miles of turnpike roads in Pennsylvania alone. The most celebrated turnpike in the United States was the "National Pike," leading from Cumberland to Wheeling, and subsequently extended. It was commenced in 1806, and the first stagecoach bearing the United States mails passed over it on August 1, 1818. Gradually turnpikes gave place to free highways, by the authorities of populous centers taking upon themselves the duties of improved road construction. Boston was one of the first to extensively launch on this new policy.

Of the men who have devised new methods of road construction, the best known are Telford (1757-1834) and MacAdam (1756-1886). To MacAdam we owe the word "macadamize." One of the most remarkable road builders that ever lived was the blind Yorkshireman, John Metcalf (1717-1792), who was the first to conceive of a floating road across a marsh.

IV. The Good Old Times.—For hundreds of years no radical improvement had been made in wheeled vehicles, but with the improved condition of the highways a marked advance was made in the vehicles as well. This belated progress in England was partly due to the lingering feudal sentiment that to ride in a carriage was a mark of effeminacy. In those days vehicles had

no spring whatever. In 1766 a line of stage wagons was run between Philadelphia and New York, "with the seats set on springs." These comparatively speedy wagons were known as "Flying Machines." But a fundamental change in the construction of wheeled vehicles was made in 1804, for in that year Obadiah Elliot, an English coach builder, patented elliptical springs in place of the heavy iron and wooden beds till then in use. Within the next ten years the number of carriages increased considerably, and it is estimated that in 1814 there were 69,200 horse-drawn vehicles in Great Britain. Hackney carriages first began to ply for hire as long ago as 1625 in the streets of London; and in 1634 sedan chairs for the first time entered into competition with the hackney carriages. The first man in England to let out hackney horses was the famous carrier of Cambridge, Tobias Hobson (of "Hobson's Choice" fame), immortalized in the *Spectator*. Hobson died at the time of the plague in 1630. Hackney carriages were introduced into France in 1650 by one Nicholas Sauvage, who lived in a house called the Hôtel St. Fiacre, from which circumstance all hackney carriages came to be called *fiacres*. In ancient Rome there were carriages let out for hire which Suetonius called *raeda meritoria*, and *meritoria vehicula*. Hackney carriages in England were long assailed as a public nuisance. The first hackney cab stand was established in London in 1634; but as late as 1660 Charles II. issued a proclamation against hackney coaches standing at street corners. These cumbrous coaches were largely superseded by the lighter cabriolets, which first plied the London streets in 1823. The inhabitants of London favored the new "cab," whose fare was one shilling a mile, as readily as 200 years ago they made use of the watermen's boats on the Thames. The first omnibus appeared in London, July, 1829, plying between Paddington and the Bank of England, and a year later omnibuses were introduced into the United States. In this country important changes were effected in the design of vehicles, the four-wheeler being substituted largely for the two-wheeler. The buggy, an American invention of the early part of the last century, amazed English coach builders by its lightness, ease, and durability. The now popular victoria first came into favor in 1869.

THE NEW ERA.

I. Railways.

"Soon shall thy arm, unconquered Steam, afar
Drag the slow barge, or drive the rapid car."

Erasmus Darwin's prophecy in 1781 was soon to be fulfilled. A sudden wave of invention spread over the Anglo-Saxon race. The evolution of the steam engine ushered in a new era and revolutionized all transportation. In 1787 Oliver Evans of Philadelphia made a model of a steam carriage or locomotive, and sent it to England; about the time that James Watt, the English inventor, had introduced his stationary engine. To the Cornishman, Richard Trevithick, is probably due the credit of making the first practical steam coach, which carried passengers at Camborne, Cornwall, on Christmas eve, 1801. Trevithick continued his experiments, and in 1804 he made several trials on the Merthyr Tidfil line in Wales. An enthusiastic witness has recorded that this train traveled "five miles an hour with ease"; and, further, that it "carried ten long tons of bar iron from Penydarren Iron Works, nine miles to the Glamorganshire Canal, also 70 persons." George Stephenson was the first to make practical use of the multitubular boiler, by which the heating surface is greatly increased. His first locomotive appeared in 1814, but the success of the locomotive was not assured till Stephenson, "the father of the locomotive," brought out the famous "Rocket" in 1829, which on its first trial attained a speed of 29 miles an hour. The "Rocket" embodied a new principle. This was the exhaust draft, a device whereby the exhaust steam from the cylinder supplied oxygen to the flame by creating a blast through the fire box and the tubes of the boiler. Two years previously (September 27, 1827) the first railway in the world was formally opened between Stockton and Darlington. The road cost £250,000, both malleable and cast-iron rails being used. This, after all, was merely a tramway; but the first real railroad in England was that between Liverpool and Manchester, which was opened amid great opposition in 1830. In the same year 15 miles of rail were opened for traffic between Baltimore and Ellicott's Mills, on the pioneer American railroad—the Baltimore and Ohio. Five years later this line extended to 135 miles, whilst there were over 1,000 miles of railroads altogether in the United States, as against some 60 miles in 1830. Belgium had the first railroad on the continent (1837), between Brussels and Mechlin. It was constructed by Pierre Simin under government deeds dated 1834. In 1839 France launched boldly upon the new enterprise, and built a number of railroads. In Massachusetts, railroad companies began to be chartered in 1830, and within five years three lines radiated from Boston, connecting that city with Providence, Worcester, and Lowell.

The imported English locomotives were expensive and not well suited to the light rails and peculiarities of the American tracks; so America began to build its own locomotives in 1831. In that year a clock and watch maker of York, Pa., named Phineas Davis, exhibited his locomotive (the "York") and won the first prize, offered by the Baltimore and Ohio for the best. The well-known philanthropist, Peter Cooper, tried his skill at producing a locomotive, but his best effort did not excel those of his fellow inventors. One of the most famous locomotives still in existence is the "John Bull," made by George Stephenson, and imported from England in 1831. It was exhibited at the Centennial Exposition in 1876, and at Chicago in 1893, and may now be seen in the National Museum at Washington. It was in active use for more than 30 years.

The "iron steed" may now be seen in almost every country in the world; for steam has given wings to travel and transport. No scene is too sacred or beautiful to deter the progress of the locomotive: Benares, Mecca, or Jerusalem, Alpine glade or Himalayan height—it matters not.

European railroads are largely under government control and this policy is an outgrowth of

(1) state subsidies, (2) state construction, and (3) state guarantee of traffic monopolies. The policy of government ownership of railroads is due to various determining factors, such as military necessity in Germany, Russia, Austria, and Hungary. In France such railroads as are not owned by the government are held on leases by which the ownership will eventually revert to the government. In Italy and the lesser European states, and, to a certain extent, in Spanish America, south Africa, India, Australia, and New Zealand, want of private capital and enterprise and the objection to foreign capitalization are the chief determining causes of public ownership; though in the Australasian colonies it was believed that public interests would best be served by such ownership. The only instance of a railroad owned and operated by the United States government is the Panama Railway purchased in 1905. This ownership, in view of its value in connection with the Isthmian Canal, and as a link between the Atlantic and Pacific coast ports, is of great importance to the United States. The only example of a state-owned steam railroad in the United States is a short line in North Carolina, which, however, is at present operated under lease. The Intercolonial Railway of Canada between Montreal and Halifax was built and is operated by the Dominion government in conformity with the provisions of the B. N. A. act of 1867.

The application of steam to various forms of industry has increased not only the output of supplies but the volume of freight. Each increase of traffic makes for improvements in construction; each improvement in construction makes for lower rates; and lower rates make for still greater increase of freight.

In the United States, Canada, Great Britain, and other countries having private railroad systems, the government exercises the right of supervisory control, both as regards the facilities afforded and the rates charged. Such control is necessary in the interests of the general public; for railroads come under the general category of "common carriers," and are compelled by law to carry any person who can pay the fare, as well as to transport freight for the general public without favor or hindrance. As regards passenger rates some states in the Union have passed a law fixing them at a uniform rate of two cents a mile. In other states, while "through" rates are low, local rates vary from two to ten cents a mile. In the matter of freight rates a new classification was introduced by which some goods were charged more than others for the same freight. This plan is more equable than a mileage system under which rates are made proportionate to the distance. To deal with the abuses and irregularities to which the growing competition gives rise, there are two agencies, viz., the states and Congress. Nearly every charter has been granted by the states, and each state can of course only legislate for its own territory. About half of the states have railway commissions with varying degrees of authority; some have the power to give absolute directions to railway companies, while others can merely investigate and issue a report. But no state has the power to control interstate traffic, for any regulations of this nature would be unconstitutional. To remedy the evils of which competing parallel lines were accused, Congress passed an act entitled "An Act to Regulate Commerce" (February 4, 1887). The main objects aimed at were: to prevent unfair discrimination in freight and passenger rates offered to persons and places; to prevent the improper giving of free passes; and to require all charges and accounts to be open to inspection. To enforce the provisions of the law the Interstate Commerce Commission was created, its members being appointed by the President and the Senate.

In Canada, administrative control is vested in a government committee which has power to make regulations regarding speed of trains, etc., and to determine the rates for transportation of passengers and freights. In England, maximum rates are fixed by Parliament. In France the charges of private railroads must receive the sanction of the minister of public works.

The problem of rapid transit in large cities has been largely solved by means of overhead and underground railways. The first elevated railway was built in New York City in 1867, but such lines were not successfully operated until 1872, when the New York Elevated Company began running trains from Battery Park along Greenwich street and Ninth avenue to Thirtieth street. In succeeding years lines were built in Brooklyn, Chicago, and Boston; while in foreign countries elevated railways were constructed in Liverpool, Paris, and Berlin. The first underground line was laid in 1886 by the City and S. London Railway, two parallel tunnels being built from 40 to 80 feet below the surface with a diameter of 10 feet 9 inches. The Twopenny Tube in London was a development of this plan; while to-day London has a veritable network of underground electric railways. Another form of underground railway was introduced in Budapest in 1893, which is known as the "cut and cover" system. Shallow tunnels are roofed with steel beams upon which the street pavement actually rests. Similar lines were built in Boston, New York, and Paris. On practically all elevated and subway railways electricity is now employed.

II. Steamships. — The invention of the steamship slightly precedes that of the locomotive. The first practicable steamboat was the *Clermont*, built by Robert Fulton in 1807, which attained a speed of nearly five miles an hour on her run on the Hudson from New York to Albany. The *Clermont* was the 16th steamboat in order of construction, but was the first to be used permanently. John Fitch, who made an experiment with a small paddle steamer in 1787, did not meet with the same financial success as Fulton in the exploiting of his inventions; for Fulton was the first to put the steamboat business on a sound financial basis. During the next decade steamboats came into general use on inland waters and on the coast. The first steamer for western waters was built at Pittsburg, 1811, and made the trip to New Orleans. Four years later the steamer *Enterprise* (152 tons) was built, and made the run from New Orleans to St. Louis in 25 days. The early progress of American steamboats is shown by the following official records:—

	No.	Tonnage.
From 1807 to 1820 inclusive....	128	25,797.77
From 1821 to 1830 inclusive....	385	65,211.60

To attempt to steam across the ocean did not

favorably impress the average shipowner. However, in 1819, the experiment was made. The *Savannah*, 380 tons, equipped as a full-rigged ship and provided with a 90 horse-power horizontal engine, with side paddle wheels and boilers in the hold, crossed from Savannah to Liverpool in 25 days, 18 under steam. Pitch pine was the fuel employed. After visiting Kronstadt she returned to the United States in October, and shortly afterward her machinery was taken out of her. For a year she ran as a New York and Savannah packet, until she was wrecked on the coast of Long Island. The first boat to cross the Atlantic entirely under steam was the *Royal William*, which made the voyage from Quebec to London in 1833.

Meanwhile, in England, since the year when the *Comet* was launched on the Clyde (1812), the enterprise met with great enthusiasm, in striking contrast to the reception accorded to the first railways. In 1825 the steamer *Enterprise* was fitted out for India, and reached Calcutta after a voyage of 113 days. Regular steamship lines were shortly established from England to the Continent, the Mediterranean, the East and West Indies, and America. Brunel, the celebrated engineer, built the first steamship for transatlantic voyages. His masterpiece, the *Great Western*, 1340 gross tonnage and 750 horse power, was launched at Bristol, England, on July 19, 1837. On April 8, 1838, the *Great Western* crossed to New York, reaching there on April 23. Her return trip was made in 14 days, with a coal consumption of 392 tons, against 655 tons on the outward passage. Between 1838 and 1843 she made 64 trips across the Atlantic. In 1838 three other British steamships crossed the Atlantic—the *Sirius*, the *Royal William* (No. 2), and the *Liverpool*. These three boats were built for the Transatlantic Steamship Company of Liverpool, running in competition with the Great Western Company. A year later the Cunard Company was established, and, backed by Government subsidies, it soon outstripped its rivals in the transatlantic trade. The *Great Britain*, built by the Great Western Company, was the first large iron-hulled steamer, as she was also the first large vessel to adopt the screw propeller. She made her maiden trip in 1844. The first iron-built ocean steamer was the *Rainbow*, 580 tons, launched at Liverpool in 1838. Screw propulsion was regarded as impracticable until John Ericsson, who afterwards built the *Monitor*, had put it to the test; while Thomas Pettit Smith, working on independent lines in England, applied the screw successfully to the *Archimedes*, in 1839. The screw was not universally adopted on ocean liners till 1862, both paddle wheels and wooden hulls lingering much longer in America than in Great Britain. Twin screws first came into use in 1880.

In 1826 the first steamboat navigated the Allegheny River. The trip from New York to St. Louis by steamer, via New Orleans, used to occupy 29½ days. The trip from St. Louis to New Orleans took 12 days in 1823, and 5 years later the *General Brown* made it in 9 days, 4 hours. Thirty years afterwards, so much had steamers been improved, this same passage was easily made in three days.

After the commercial success of the steamship was assured, then began the struggle for supremacy between steam and sail. Larger sailing ships were built, every advantage being taken of the prevailing winds. The substitution of iron for wood was of less benefit to the sailing vessel than to its rival; while the introduction of screw propellers and compound engines, and later of triple or quadruple expansion engines, too heavily handicapped the sailing ships in this unequal contest. Each year, the percentage of steam tonnage increases, while that of sailing tonnage correspondingly declines. Since 1880 further economy has been effected by building special types of vessels for special requirements —swift ocean liners, commodious river boats, barges for coastwise trade, slow but regular freighters, and cheap but accommodating ocean tramps.

The recent adoption of turbine engines in place of modern reciprocating engines marks a further stage of marine development. Besides giving increased speed, the turbine takes up less space, weighs less, and reduces vibration to a minimum. The two sister ships of the Cunard Company, the *Lusitania* and the *Mauretania*, each with a gross tonnage of 32,500, are both equipped with turbines; and not only are they the largest, but their record-breaking passages across the Atlantic in the summer of 1908 prove them to be the fastest vessels afloat.

In comparison with that leviathan of a past generation—the *Great Eastern*, completed in 1859, and whose chief usefulness was in the laying of the Atlantic cable—the following data concerning some of the best known liners of to-day will eloquently show the progress made in the way of speed and power:—

Name.	Built.	H. P.	Gross Tonnage.	Length. Ft. In.	Beam. Ft. In.	Knots Average Speed.
Great Eastern.	1859		18,915	679.6	82.8	13-14
Oceanic.....	1899	27,000	17,274	704	68.	
Deutschland...	1900	37,800	16,502	686.6	67.	
Lusitania	1906	70,000	32,500	790	88.	25.66
Mauretania...	1906	70,000	32,500	790	88.	27½

III. Ship Canals.—With the development of steam navigation and maritime commerce arose the necessity of shortening routes wherever possible, hence canals of large dimensions were constructed to permit the passage of the largest vessels. The value of a ship canal cannot be estimated by the tonnage traffic which yearly passes through. To bring India, for example, within 14 days of London, and thus draw East and West more closely together, is an achievement whose effect on civilization is hardly less appreciable than on commerce. The Suez Canal, which cuts through the Isthmus of Suez and links the Mediterranean and the Red Sea, is one of the world's greatest waterways. Before it was opened in 1869 the ocean trade of Europe with oriental countries was by way of the Cape of Good Hope, and was small in comparison with the enormous volume of traffic which now passes through the canal. The Corinth Canal connecting the Gulf of Corinth with the Gulf of Ægina, though only four miles long, is too beset with difficulties to tempt many vessels from the open-sea route. The Kaiser Wilhelm Canal, which links Kiel Bay with the mouth of the Elbe, is

used by a large number of smaller vessels and barges; but the canal is of greater strategic importance to Germany than as a factor in her commerce. The Panama Canal, rapidly nearing completion, will be the fourth and greatest of the isthmian waterways, and will divert most of the traffic which now rounds Cape Horn. This will effect a greater saving of time and distance than is even done by the Suez Canal. Of local rather than international importance are the Manchester and Amsterdam canals. The waterway from Ymuiden to Amsterdam has had a marked effect on the inland trade of Holland; while Manchester, by virtue of its canal, has now the advantage of a seaport.

IV. Surface Cars.—The first horse cars were designed by Benjamin Outram in the beginning of the nineteenth century, and "Outram roads" soon were abbreviated into "tram roads" or "tramways." One of the earliest tramways ran from Croydon to Wandsworth, London, 1801. The value of the innovation, especially to the working classes and those living in straggling townships, was quickly realized in America. New York City set the lead and laid down the first lines in 1831 from Prince street to the Harlem River via the Bowery and Fourth avenue. The work was intrusted to John Stephenson. In 1852, Second, Third, Sixth, and Eighth avenue lines opened. Boston established a system of street cars in 1856 and Philadelphia in 1859. The improved American car was first introduced into England in 1860, when the first street tramway was opened at Birkenhead. Afterward Birkenhead became a manufacturing center for these cars. Street cars were started in London in 1870, 12 years after their appearance in Paris. A welcome advance was made when San Francisco established a service of cable cars in 1873. Chicago followed suit in 1881; Philadelphia in 1883 on Market street; New York in 1886, and Baltimore not till 1893.

Cable cars were introduced into New Zealand in 1883 and the following year into London. Steam cars were also widely established. Cable and steam have now almost entirely given place to electricity. The first model of a trolley car was made by Thomas Davenport of Brandon, Vt., so long ago as 1835, but electric traction was not thoroughly and successfully tested till the building of an electric locomotive by the Baltimore and Washington Railways in 1851. A speed of 19 miles an hour was attained. An electric tramway was one of the features of the Berlin Exhibition, 1879, and was supplied by the celebrated firm of Siemens & Halske. The success of the trolley was assured, and city after city inaugurated the new service. Cars of American construction have, however, taken the lead in the world's supply.

COMMUNICATION.

I. Post Office.—The transport of messages originated in the Orient. The dâk-runners and mounted messengers, who speeded from post to post in ancient days, foreshadowed a general postal service. We read of Cyrus the Elder, King of Persia, establishing a relay system in 559 B. C.; whilst China had such messengers from earliest historic times. Greece and Rome had a similar service, as also had France under Charlemagne (768-814). At first only official messages were carried, but a letter post for commercial purposes was inaugurated by the Hansa towns early in the twelfth century. The University of Paris in the following century organized a postal service, which was continued till the dawn of the eighteenth century. In England, in the reign of Henry VIII. the Government established a regular service of messengers; and under Edward III. a system of posts was instituted, at which the Royal *Nuncii* could change horses. Sir Brian Tuke was appointed by Henry VIII. the first "Master of the Posts." Gradually the system became more efficient. Thomas Witherings, the first great postal reformer, was appointed postmaster on the accession of Charles I. The royal posts were then opened to the public, and in 1635 Witherings was authorized to establish a "Running Post" between London and Edinburgh, "to go thither and back again in six days." Letters were also to be carried between the chief towns en route, and eight "bye-posts" were organized. The first postage rates were 2d. for 80 miles, or less; 4d. up to 140 miles; 6d. for any longer distance in England; and 8d. to Scotland. These rates were for letters on a single sheet of paper. In 1685 a penny post was introduced into London and suburbs, by a merchant named William Dockwra; but on its success being demonstrated, the crown annexed the undertaking, and Dockwra subsequently was appointed comptroller. In 1701 the rate was doubled. Mail coaches were introduced in 1783.

In the United States an intercolonial postal service was gradually introduced along the coast; and in 1672 the colony of New York established a "post to goe monthly from New York to Boston." Twenty years later the English government placed the colonial postal service under a deputy postmaster general, and in 1710 an extended service was organized. Benjamin Franklin, formerly postmaster at Philadelphia, was made postmaster general in 1753. A penny post was established in Philadelphia; and in 1756 the first mail coach ran between Philadelphia and New York. In 1758, newspapers, which up to that time had been carried free, were charged with postage.

Meanwhile, in England, postage rates were increased from time to time until, in 1812, they were almost prohibitive, the rates ranging from 4d. to 1s. 5d., according to distance. The year 1840 is the great landmark in the annals of the post office, for in that year Rowland Hill, after three years of agitation, succeeded in introducing his great reform, and *penny postage* became an actual fact. An enormous increase of mails at once resulted, due not only to the cheap postage, but to the cessation of illicit traffic in letters. *Postage stamps* came into general use in Great Britain at the same time as the penny postage. The first issue of adhesive stamps in the United States was in 1847.

Money Orders were first introduced in 1792, as a convenience to soldiers and sailors, but in 1838 the scheme was extended to the general public. The United States adopted the money order system in 1864.

Registration of letters was known in England nearly 300 years ago, but not till 1814 were receipts given to the sender. The system was authorized in the United States in 1855.

Other reforms followed. The *Post Office Savings Bank* was established in Great Britain, 1861. Two years later, the English *Free Delivery System* was introduced into the United States, though only in large cities. This was extended in 1887 to cities of 10,000 population, or whose postal receipts amounted to $10,000. The *Special Delivery* was authorized in 1885 and the *Rural Free Delivery* in 1896. *Post Cards* were first used in 1870.

A *Parcels Post* was established in Great Britain in 1883. The limit of weight is 11 pounds for both inland and foreign ports. This reform has not yet been introduced in the United States.

A *Universal Postal Union* was created in 1874, chiefly owing to the efforts of Dr. Von Stephan of Germany. This embraces nearly every civilized country on the globe.

Due largely to that indefatigable reformer, Sir Henniker Heaton, the penny (two cent) postage was established between Great Britain and the United States, October 1, 1908. The total number of post offices in the United States is 62,663, and in the Dominion of Canada, 11,377. Little over a century ago (1800) there were only 903 in the United States.

The United States, Mexico, and the Argentine Republic are the only countries showing a loss in their postal service. In 1907 the United States deficit was $6,653,282.

The Express business plays an important part in transportation in the United States, and performs not only the services of common carriers but to a certain extent takes the place of the Parcels Post in other countries. But whereas the Parcels Post is an international and popular service, the charges on foreign express matter are necessarily so high as to limit the usefulness of the service. As Prof. Emory R. Johnson points out in his admirable text-book, *Ocean and Inland Water Transportation*, "the international parcels post constitutes a useful addition to our postal facilities, and the development of this branch of the postal service would be a public benefit." In all civilized countries every township has its postal facilities, and can receive parcels up to 11 pounds in weight from almost every country except the United States, which mostly restricts the weight of foreign parcels to 4 pounds 6 ounces. To send a package to such of these places as lie miles away from a railway is both costly and uncertain by any private agency; hence the international express traffic is comparatively small in volume and limited in scope. Professor Johnson cogently observes: "Most of the arguments in favor of domestic parcels post within the United States apply to the establishment by our country of a foreign parcels post with a weight limit of at least 11 pounds (5 kilograms) per package. By establishing such a service at rates that would cover only the expenses of the service, the United States could facilitate the development of international intercourse. Such a policy on the part of the United States would limit the development of the international express service performed by private companies in the United States, and would doubtless cause these companies to specialize upon the performance of services other than the transmission of packages of merchandise. This would be a detriment to the private express company, but would be of benefit to the people of the United States."

II. Overland Telegraph. — From earliest times methods of conveying intelligence swiftly to a distance have been universally known and utilized. Fires would seem to have been the first means of comparatively distant signaling. We read of them in the book of Jeremiah, and in Greek and Latin authors; whilst their use in Hindustan and in Europe leaves no doubt as to their wide employment amongst civilized nations. The Indians of America, from the north to Cape Horn, still use lighted fires to announce their special tidings. Another form of optic signal is that of the outstretched or uplifted arm. By such methods the Red Indians recognized each other at a distance. Thus, an arm lifted high, with two fingers raised and the others closed, signified "Who are you?" This system of optical signaling gave birth to the semaphore, which, toward the end of the eighteenth century, came into general use in Europe, and a reminder of which may still be seen on any railroad. The semaphore system was still further elaborated for maritime and military purposes, and flag signaling is a yet more complex development. The heliograph by day and the flash light by night can both trace their evolution to the primeval fire and torch.

The application of electricity is of modern growth, and has revolutionized all previous methods of signaling. The phenomenon of attraction was well known to the ancients. Thales, the founder of Ionic philosophy, who lived 600 years before Christ, noticed the effects of friction on amber; Theophrastus, Pliny, and other writers recorded similar phenomena. In 1727 Stephen Gray, a pensioner of Charterhouse, London, made an electric discharge pass over a circuit of 700 feet. The discovery of the Leyden jar by Musschenbroek of Leyden, in 1746, was very opportune for electrical experimenters, and by its means, in 1747, Dr. Watson, bishop of Llandaff, transmitted a discharge through 2,800 feet of wire, using the earth for the extreme circuit. On August 14 of the same year Watson repeated his experiments over 10,600 feet of wire stretched on poles erected on Shooter's Hill, London. Benjamin Franklin made similar experiments in 1748 over the Schuylkill River, Philadelphia. To Le Sage of Geneva belongs the credit of having established the first telegraph wire for the transmission of intelligible signals. In 1774 he invented a system of signaling by electrostatic action. The next important discovery was made by Romagnesi of Trente, in 1805, but attracted little attention till it was rediscovered in 1819 by Oersted. The discovery was that a wire conveying an electric current is able to deflect a magnetic needle. The following year Schweigger discovered that the deflecting force was multiplied by winding wire several times around the needle. These two discoveries paved the way for the construction of the galvanoscope and galvanometer; and galvanoscopic or "needle" telegraphs were subsequently evolved. In 1832, Schilling, a Russian, invented a five needle telegraph; he also devised a single needle and single circuit telegraph, using reverse currents and combinations of signals for an alphabet. The following year Schilling's telegraph was developed

by Gauss and Weber, who built a line three miles long at Göttingen. Steinheil, on the same principle, built several lines out of Munich, using only one wire and the earth as a ground wire.

Following Sturgeon's invention of the electro-magnet in 1825, and the simultaneous discovery by Faraday in England and Henry in America (1831) of the induction of currents by currents and by magnets, Morse laid the foundations, in 1836, of the present overland electro-magnetic telegraph system. In the same year, in England, Wheatstone with William F. Cooke still further perfected the needle telegraph, and in 1837 were able to put a crude telegraph system into actual service on the London and Blackwall Railway. The needle telegraph, by the way, is still in use on many European railways because of the sensitiveness and reliability of the receiving action. In 1839 the first public line was opened by Wheatstone between Paddington and Slough, England, 20 miles of goose quills being used for insulators.

It was once a popular notion that Wheatstone and Cooke were the original inventors of the electric telegraph. But, strictly speaking, the electric telegraph had no inventor but is rather the result of accumulated discoveries, each inventor adding his part to advance it toward perfection. Perhaps Wheatstone's greatest achievement was his automatic recording telegraph, which is extensively used for press and other long dispatches, and which has attained marvelous speeds for a mechanical recorder.

Morse constructed his electro-magnetic telegraph in 1836, and in the next few years he devised many important modifications. Congress made him an appropriation of $30,000 in March, 1843, and on the 24th of May, 1844, the first telegraph line in the United States was successfully opened between Washington and Baltimore. Since Morse's first message—"What hath God wrought?"—was flashed across the wire, and the practicability of the invention was assured, the electric telegraph has truly put a girdle around the earth, and distance has become annihilated. The alphabet now used, the so-called Morse code, was worked out by Vail, Morse's partner. Outside the United States and Canada a different code, known as the Continental code, is used. The main difference between the two codes is that in the American code "spaced" letters are utilized; thus, the letter "o" consists of a dot, a space, and a dot, the duration of the space being equal to that of a dash.

The next important improvement in telegraphy was the employment of one line wire to convey more than one message at a time. Moses G. Farmer of Salem made experiments in multiple transmission in 1852; and in the year following Gintl of Vienna gave the first hint of the present mode. The solution of the difficulty was effected by Joseph B. Stearns of Boston, who invented the duplex system in 1872. The problem of sending two messages in each direction was first successfully solved by Edison in 1874. Systems of quadruplex were invented by Gerrit Smith of the Western Union Company in 1875 and 1876. Smith's improved method is known as the Western Union Company's Standard Quadruplex. In 1898 Professor Rowland of Johns Hopkins University perfected a system to send 12 messages. The system of harmonic telegraphy elaborated by Elisha Gray of Chicago, as well as by Edison and Bell, is a distinct advance over previous methods. Gray, in 1875, devised a method by which any number of messages may be sent simultaneously, regardless of the speed of transmission.

Autographic telegraphy has been developed of late years, which makes it possible for the handwriting of the sender to be reproduced in facsimile. The telautograph of Elisha Gray has attracted considerable attention. "Facsimile telegraphs" have also been designed, whereby photographic pictures or cuts may be reproduced over the telegraph line.

The telegraphic distribution of time is one of the many services rendered by electricity. Time balls are dropped daily at noon in New York, Boston, Philadelphia, Baltimore, Washington, Newport, Woods Holl, New Orleans, Savannah, and Fortress Monroe. These balls are electrically operated from the master clock in New York, which in turn is controlled from Washington observatory. This noon current is also communicated to a number of other cities. In New York, Chicago, and many large cities a local distribution of time is made from some central master clock.

III. Submarine Telegraph.—Amongst the wonders of a wonder-working century, none are more stupendous than that triumph of genius and perseverance—the submarine telegraph. The earliest recorded experiments in subaqueous telegraphy are those conducted by Dr. O'Shaughnessy, who connected the two banks of the river Hugli in 1838, using an insulated cable consisting of a pitch-coated wire inclosed in a split rattan, and the whole wound round with tarred yarn. Wheatstone, in 1840, suggested a cable between Dover and Calais, and proposed a somewhat similar method of insulation. The distinguished founder of Cornell University, Ezra Cornell, laid a cable 12 miles long in the Hudson River from New York to Fort Lee in 1845. This cable was composed of two copper wires covered with cotton, insulated with india rubber, and incased in a leaden pipe. The use of gutta-percha was what really made marine telegraphy practicable. The first experimental cable, insulated by means of gutta-percha, was laid across the Straits of Dover between Calais and Cape Grisnez in 1847; and after this successful demonstration the problems of the submarine telegraph were vigorously grappled with. In 1848 a gutta-percha insulated cable was laid across the Hudson from Jersey City to New York; and in the following year Siemens, the first inventor of a machine for applying gutta-percha to a wire, laid a conductor in Kiel harbor for the purpose of firing mines. In the same year (1849) C. V. Walker, electrician to the South-Eastern Railway, laid a cable sheathed in gutta-percha two miles long in the English Channel, and, the shore end being connected with the overland wire, messages were successfully exchanged with London. In 1850 a company was formed in England to lay a cable from Dover to Calais. The plan succeeded, but the cable soon after was accidentally broken by a Boulogne fisherman.

A stouter cable was then devised by T. R. Crompton on the type of the iron pit-rope, and weighing about seven tons to the mile; and in 1851 the new cable was laid across the English Channel. This proved a complete success, and remained in use for many years. After three unsuccessful attempts, a cable was laid, in 1853, by Charles Bright, between Great Britain and Ireland. Sunk in 180 fathoms of water, this was the greatest depth at which a cable was laid for some years. So great an impetus had been given to submarine telegraphy, that within the next decade several lines were established not only from England to the Continent, but between Sweden and Denmark; Italy, Corsica, and Sardinia; also between Sardinia and Africa. Even these successes, which crowned repeated failures especially in the deeper Mediterranean, created no popular enthusiasm for a trans-oceanic line. But faith in the feasibility of a longer cable grew; and very soon a few enterprising scientists, backed up by financiers in America and England, determined to attempt the laying of a cable across the Atlantic. In 1852 F. N. Gisborne, an English engineer, obtained a concession for connecting St. Johns, Newfoundland, with Canada; and Cyrus West Field, a retired New York merchant, organized a syndicate to carry out the project. This was in 1854, and two years later, at the second attempt, cable communication between St. Johns and Canada was an accomplished fact. This was the first time that stranded copper wires were used in place of the single solid wire previously used as a conductor.

And now began the greatest undertaking of the nineteenth century. With the United States and the British Governments as sponsors, the first historic effort to lay the Atlantic cable was begun on August 6, 1857. The work was to be divided between two vessels—H. M. S. *Agamemnon* and the United States frigate *Niagara*, —the latter to lay the first half of the cable from Valentia, Ireland. But when about 380 miles had been laid, the cable snapped. In the following June, a second attempt was made by the same two vessels, and ended in even greater disaster. The public branded the enterprise as a "mad freak of stubborn ignorance"; but with splendid pluck and determination a third and successful effort was made in September of the same year. On August 5, 1858, a date which ranks with that of Columbus' discovery, the two hemispheres were linked together amid universal rejoicings. The first Atlantic message voiced the sentiment of Christendom:—

"Europe and America are united by telegraphy. Glory to God in the highest, on earth peace, good will toward men."

The messages exchanged by Queen Victoria and President Buchanan were signals for renewed enthusiasm. Unhappily, the cable failed after only a few weeks' trial; the insulation giving way under the excessive high-potential currents from enormous induction-coils. The year 1865, however, saw the paying out of another cable from the stern of the *Great Eastern;* but this attempt ended in disaster. In 1866 the *Great Eastern* recommenced her task, and the third Atlantic cable was established successfully July 27; whilst the 1865 cable was recovered and likewise completed.

The rate of signaling was at first slow; but as the staff became more proficient, the rate increased from eight words a minute to 15 and 17 words on each line, with the application of Varley's condensers. Unlike aerial lines, the battery-power necessary to effect the transmission of cable messages does not merely depend on the size and length of the conductors employed. The electrostatic capacity of the line was found to play an important part, and signals were discovered to be slower in transmission. Thomson (Lord Kelvin) estimated that the rate of signaling would be inversely as the square of the cable's length. The ordinary Morse instrument was found to be too slow, and insufficiently sensitive for transatlantic cabling. But the mirror galvanometer, invented by Thomson, followed some years later by his siphon recorder, effectually removed this difficulty. All important long distance cables are now duplexed, so that messages may be sent simultaneously in opposite directions. Since the special application of Wheatstone's automatic transmitter, the rate of speed by cables of the newer type is raised to 50 five-letter words per minute.

Deep sea cables are open to every kind of risk: the chafing of rocks and currents, the ravages of the teredo or boring worm, the insidious corrosion that searches every flaw—these are "faults" to which a cable is ever liable.

During a brief period of 50 years the submarine telegraph has rapidly extended until now there are no less than 15 cables crossing the Atlantic, representing a capital of over $100,000,000. This competition has helped to lower the tariff from £1 (with a minimum of £20 per message) to the present uniform Atlantic rate of 1s. per word. The enterprise of ocean telegraphy has made the world its own, and to-day there are about 250,000 nautical miles of submarine cable in working order throughout the globe, a length sufficient to engirdle the earth over ten times.

IV. Wireless Telegraphy.—The so-called "wireless telegraphy" is really a misnomer, and has caused the more pedantic German scientists to rename it "spark telegraphy."

The possibility of transmitting electric signals without conducting wires is not a new discovery. Morse experimented on quite a large scale in 1842, and so did many others, the principle of each experiment being the use of land or water to conduct the current from point to point. The invention of the Bell telephone in 1878 gave a new impetus to those experiments; for the telephone, being sensitive to the smallest currents, enabled much fainter signals to be detected than was previously possible. Bell himself made some experiments in this connection, on the Potomac River. One of the first to grasp the potentialities of the new invention was W. H. Preece, whose immediate desire was to establish communication with lighthouses and lightships. In 1882 Preece made some successful trials across the Solent Lakes; he succeeded in telegraphing between Lavernock Point in South Wales and the island of Flat Holm, three miles away. Equally successful trials were made by him

between Arran and Kintyre in Scotland. But whilst the conduction properties of the earth were relied on by Preece, he also availed himself of induction across the intervening air space. It is therefore difficult to say how much of his success was due to conduction and how much to induction.

Wireless or etheric telegraphy by true induction was not seriously attempted till John Trowbridge, of Harvard, advocated the method in 1880. But it remained for Marconi, who patented his system in June, 1896, to so overcome the initial difficulties as to be able to launch a commercially practicable method of telegraphy, based on Hertzian waves. Its principles were known, but its practical application had not as yet been tested. As long ago as 1842, Joseph Henry had noted the phenomena attending the discharge of a Leyden jar, and three years later Michael Faraday advanced his famous theory of the electro-magnetic origin of light. Maxwell mathematically deduced similar conclusions in 1864; while Hertz demonstrated, in 1888, that electric waves are analogous to light waves, and follow the same law. Hertz did more; he showed how to produce these waves, as well as how to detect them. Lodge, Kelvin, Tesla, Edison, and other experimentalists each added his quota, and thus the way was prepared for Marconi. With his improved transmitter—a sparking apparatus of the same type as that used by Hertz—Marconi discovered that not only would electric waves traverse long distances, but were unaffected by intervening obstacles. Marconi obtained the patronage of the British postal officials, and his experiments were more and more successful. On March 28, 1899, his system was working between England and France; and in December, 1901, the dream of the inventor was realized, and etheric communication established across the Atlantic. The British admiralty adopted Marconi's system in 1900; and scores of ocean liners installed his apparatus. The Lloyds adopted his system exclusively for use throughout the world. Since June, 1904, a *Daily Bulletin* of news by "wireless" has been issued to passengers on board the Cunard mail steamers. The public wireless service is also in operation across the Adriatic Sea, between Bari in Italy and Antivari in Montenegro. Wireless telegraphic stations are now established in almost every quarter of the globe. Since January 1, 1905, the telegraph offices in the United Kingdom have received and delivered Marconi telegrams to and from ships at sea; and on October 19, 1907, a commercial transatlantic wireless telegraph service was inaugurated, the ocean messages being transmitted between Cornwall and Newfoundland.

The De Forest system is the one chiefly employed in the United States. De Forest claims to be able to syntonize his circuits. The receiver in this system is a telephonic apparatus, which the operator can turn at will to various transmitters with different wavelengths. Another American system is the Fessenden, which is controlled by the National Electric Signaling Company of Washington. The Lodge-Muirhead system is that used by the British Army, and is also used between the Andaman Islands and the mainland of India and Burma. To Sir Oliver Lodge belongs the credit of devising the first system of wireless telegraphy based on electric resonance.

Of such vast importance is the new discovery that an international conference was opened at Berlin, October 3, 1906, settling arrangements for the working of all stations open to general wireless telegraphic service. It was there laid down that priority must always be given to messages from ships in distress.

V. Telephone.—The annals of applied science reveal no greater marvel than the rapid growth of the telephone. When we look around the world, and see the telephone in use in every office and almost every modern home, it is hardly conceivable that little over three decades ago the invention was commercially unknown.

It is well known that sound is transmitted by waves of condensation and rarefaction, which affect the drum of the ear. Wheatstone, in 1831, showed that these waves could be transmitted a short distance through wooden rods, and afterwards conveyed to the ear by the consequent vibrations. For centuries it has been known in India, that, by connecting two diaphragms with a stretched cord or wire, vibrations given to one diaphragm would be transmitted to the other, over a considerable distance. A similar instrument is now used and known as the mechanical telephone. To produce these vibrations by means of an electric current was the problem of the electric telephone. Various discoveries were made toward this end. Dr. Page, of Salem, Mass., in 1837, found that magnetized substances could reproduce sound. Charles Bourseul, in 1854, seems to have first suggested the agency of an electric current. Seven years later, Philip Reis, of Friedrichsdorf, constructed a short line, which failed to reproduce speech and was only partially successful with musical sounds. Graham Bell was undoubtedly the first to produce a thoroughly practicable telephone, and patented his invention in 1876. Almost simultaneously, Elisha Gray announced somewhat similar discoveries. Both Bell and Gray pointed out that the variations of the current may be produced by causing the vibrations of the diaphragm to vary the resistance of the circuit. This principle lies at the base of every type of "microphone," an instrument which, as its name implies, transmits and renders audible, feeble sounds. Hughes produced his microphone in 1878, and among others who have added improvements to the telephone may be mentioned, Edison, Blake, Berliner, Gray, Gower, and Hunnings. The first practical telephone line ever built was in Boston, in 1879. The Bell Telephone Association was formed that year, and the New England Telephone Company in February, 1878, and the Bell Telephone Company in the following July. These companies are all absorbed in the American Telegraph and Telephone Company, formed in 1899.

Long distance telephony is a wider development of the telephone system, and is a characteristic feature of an age which requires its means of communication to be increasingly rapid, reliable, and ready to hand. Except in certain details of apparatus and circuits, long-distance is the same as the ordinary telephony. The longer the circuit, however, the greater is

the difficulty in obtaining clear reproductions of speech, due to these two causes: (1) To the attenuation, or great impedance, of the circuit; and (2) To the failure of the receiving apparatus to correctly reproduce the quality of the sounds, due to the fact that the intensities of the different sounds are not correctly reproduced in accordance with their volume. The longest telephone circuit is the New York and Chicago line, which is 950 miles in length, and consists of 1,900 miles of conductor. The line was opened October 18, 1892. The conductor is No. 8 B. W. G. hand-drawn copper wire, 0.165 inches in diameter, with a resistance of 2.05 ohms per mile, and weighing 455 pounds per mile. The poles are of cedar or chestnut, 35 feet high and upwards, and average 45 to the mile. Conversation has been carried on over this line, by extension, between Boston and Milwaukee. By successive connection of several lines, regular telephonic service can be carried on over a distance of more than 1,500 miles.

It has been found possible to transmit speech to moderate distances without any wires at all, by means of solar rays. An instrument called a photophone has been invented for the purpose of these radiophonic communications. The discovery stands in the same relation to the electric telephone (which is really an acoustic telegraph) as the heliograph does to the telegraph. Radiphonic communication can even be carried on along beams of light, without the aid of a receiving apparatus. This is effected by allowing the transmitted beam to fall upon a suitable material, such, for instance, as a sheet of hard rubber. The periodic expansion and contraction caused by the periodic variations of the heat imparted by the beam cause the rubber disc to reproduce the sound from the transmitter. This property of substances is called sonorescence.

VI. Wireless Telephone.—Since Marconi's success in turning the ether vibrations to account in his system of wireless telegraphy, many inventors have essayed to apply the same principles to wireless telephony. Success over limited distances has repeatedly been achieved; though, as in wireless telegraphy, one of the main problems has been to syntonize the circuits so as to insure perfect selectivity. During the British naval maneuvers in 1908, the British Admiralty opened communication with Hertzian waves between its own office in London and the fleet in the North Sea. But the longest distance in which wireless telephone tests have been made was in July, 1908, when A. Frederick Collins, the originator of the long distance wireless telephone, successfully exchanged messages between Newark, N. J., and Philadelphia.

What Marconi has done for etheric telegraphy, Collins is doing for the sister science, etheric telephony, and for distances up to about 100 miles, the present apparatus devised by Collins has proved to be thoroughly practicable. The rights of the patentee are now vested in the Collins Wireless Telephone Company of Newark, N. J., which shows that the invention has already entered the commercial stage. A feature of the Collins system is a self-regulating arc-lamp, which has revolving electrodes in place of the usual induction coil employed in spark telegraphy. This "oscillation arc" provides the means for setting up sustained electric oscillations in the radiating aerial wire, and these oscillations, modified by the human voice, are transmitted through space in the form of electric waves. Impinging on the receiving aerial wire, the waves are reconverted into continuous electric currents of high frequency, which, actuating a sensitive thermo-electric detector, reproduce the spoken words clearly and loudly.

Telephone Statistics.—The following are the latest statistics made public by the American (Bell) Telephone and Telegraph Company. The figures are for January 1 of each year:—

	1906	1907	1908
Exchanges and branch offices	4,532	4,889	5,108
Miles wire poles and buildings	2,159,567	2,754,571	3,057,138
Miles underground	2,345,742	3,241,471	3,883,051
Miles of wire submarine	9,373	11,690	6,322
Total miles of wire	4,514,682	6,007,732	6,946,511
Total circuits	1,135,449	1,384,175	1,541,727
Total employees	74,718	90,324	88,274
Total stations	2,241,367	2,727,289	3,035,533

In addition to the total number of stations given in the table, there were on January 1, 1908, 755,316 stations belonging to independent companies connected by agreement to the Bell toll line system, so that, adding also the telephones employed for private line purposes, there was a total of 3,839,000 stations connected with the Bell system.

The number of instruments in the hands of licensees under rental at the beginning of 1908 was 7,544,105. The number of exchange connections daily in the United States is 18,130,803, or a total per annum of about 5,838,100,000. The average number of daily calls per subscriber is six. The capital of the company is $179,595,255.

What are known as independent telephone companies, as distinguished from Bell companies, are nearly all represented in the International Telephone Association. Of these there are about 9,000 companies operating an aggregate of over 3,500,000 instruments. The capital invested is approximately $350,000,000, the number of stockholders 500,000, and the income roughly is $105,000,000. During the last year the principal feature of the independent companies' activities was the extension of long-distance business. The Middle West has been best developed, and at present over independent lines continuous communication is possible throughout nearly all of the territory within the east and west limits of Philadelphia and Nebraska and Kansas, and the north and south limits of Minneapolis and Birmingham. The increase in business, according to locality, during 1907, varied from 10 to 40 per cent and averaged between 15 and 20 per cent.

Telephone messages per annum (latest estimates): France, 205,685,374; Germany, 1,207,446,753; Great Britain and Ireland, 723,246,368; United States, 9,000,000,000; Austria, 166,474,183; Denmark, 108,750,035; Hungary, 82,909,800; Belgium, 53,977,696; Switzerland, 36,803,415; Netherlands, 31,470,095. In Italy and Spain the use of the telephone is very limited.

According to the census of 1905 the total value of telephonic apparatus manufactured during that year was $15,863,698, as compared with $10,512,412 for the census of 1900. Of this total value, $824,204 represented the value of 850,815 transmitters; $696,113, the value of 831,195 receivers; $6,483,418, the value of 887,447 complete sets of instruments; $68,826, the value of 4,560 interior systems complete without instruments; $5,154,447, the value of 4,283 central switchboards; $564,795, the value of 3,917 private exchange boards; and $2,071,895, the value of telephone parts and supplies (chiefly the signaling apparatus in magneto-telephone sets and the line protector fuses, etc.).

Illinois is the chief center of telephonic manufacturing industry in the United States, both as to number of factories and as to output. More than half the total product, or $8,357,521, was from that state. The output of New York was also large, but not quite half that of Illinois.

UNITED STATES POST OFFICE.

For the fiscal year which ended June 30, 1908, the gross expenditures were $208,351,886.15, showing a deficit of $16,873,222.74, with an additional loss from fire, burglary, etc., of $37,056.25. The following comparative statement shows the receipts and expenditures of the post office department for the 10 years ending 1908:—

Fiscal Year.	Receipts.			Expenditures.
	Revenue.	Treasury grants.	Total.	
1899	$ 95,021,384.17	$7,902,040.58	$102,923,424.75	$101,632,160.92
1900	102,354,579.29	6,250,019.95	108,604,599.24	107,740,267.99
1901	111,631,193.39	4,001,345.17	115,632,538.56	115,554,920.87
1902	121,848,047.26	2,490,635.34	124,338,682.60	124,785,697.07
1903	134,224,443.24	3,753,955.50	137,978,398.74	138,784,487.97
1904	143,582,624.34	7,631,837.43	151,214,461.77	152,362,116.70
1905	152,826,585.10	14,931,688.45	167,758,273.55	167,399,169.23
1906	167,932,782.95	11,071,558.22	179,004,341.17	178,449,778.89
1907	183,585,005.57	7,624,439.99	191,209,445.56	190,238,288.34
1908	191,478,663.41	13,035,430.16	204,514,093.57	208,351,886.15

The postal business for seven fiscal years was as follows:—

Fiscal year ending June 30.	Pieces of Mail handled in Railway Mail Service.	Registered Matter in R. M. S.	Total.
1902	15,062,830,640	24,174,174	15,087,004,814
1903	15,999,802,630	29,897,063	16,029,699,693
1904	17,132,840,230	36,699,264	17,169,539,494
1905	18,122,903,880	41,648,933	18,164,552,813
1906	19,531,882,475	45,562,459	19,577,444,934
1907	20,483,995,350	51,321,134	20,535,316,484
1908	21,650,849,745	57,416,565	21,708,266,310

Burglaries of Post Offices.—The number reported increased from 2,647 in 1907 to 3,304 in 1908, about 25 per cent, while the arrests for the two years numbered 1,984 and 2,548 respectively, an increase of 28 per cent.

City Delivery.—The service embraces 1,330 offices and 26,352 regular letter carriers, and delivers mail to approximately 45,000,000 people.

Classified Weight and Revenue.—The report of the special weighing of the mail under authority of Congress from July 1, 1907, to December 31, 1907, separates mail matter and the revenue derived therefrom into the following relative proportions:—

Description.	Per cent of weight.	Per cent of revenue.
First-class mail matter	12.81	75.74
Second-class mail matter	63.91	5.19
Third-class mail matter	14.61	14.63
Fourth-class mail matter	4.79	4.44
Congressional franked matter	.37	....
Departmental penalty matter	3.51	....

The number of pounds of second-class matter mailed during the entire fiscal year upon which postage at the cent-a-pound rate was paid was 694,865,884, creating a revenue of $6,948,658.84. The number of pounds of second-class matter mailed free of postage within the county of publication during the fiscal year was 51,701,277, constituting 6.92 per cent of the entire amount of second-class matter mailed during the year in the United States.

Dead Letters.—The total number of pieces of mail matter received during the year was 13,145,172. There were returned to senders 7,202,684 letters and parcels.

Electric and Cable Car Service.—The number of routes in operation is 508, with a length of routes of 6,764 miles and an annual travel of 11,716,416 miles. The annual rate of expenditure, exclusive of the Chicago underground electric service ($172,600), was $641,736.32. The rate of cost per mile of travel was 5.47 cents, and the cost per mile of length of route was $94.86.

Foreign Mail Service. — The aggregate weight of United States mails dispatched to foreign countries by sea was 2,231,147 pounds of letters and post cards and 12,466,612 pounds of other matter; the total cost of the service was $2,875,911.72.

Inspection and Certification.—The gross amount of fines and deductions from the pay of postal contractors and others (1908) was $1,045,062.06, the amount of remission on account of satisfactory explanations $269,607.26, leaving a net total of fines and deductions amounting to $775,454.80.

International Parcel Post.—The weight of the parcel post mails dispatched from the United States was 968,513 pounds, consisting of 350,484 parcels, and the weight of the parcel post mails received was 584,667 pounds, consisting of 200,660 parcels. Of the total weight of parcels dispatched 211,199 pounds were for Europe and consisted of 161,117 parcels, and of the total weight of parcels received 435,162 pounds were from Europe, and consisted of 145,123 parcels.

Issue of Postage Stamp Paper.—The total number of ordinary, postage-due, and special delivery stamps, stamped envelopes, newspaper wrappers, postal cards, and international reply coupons issued during the year was 9,772,059,664, and of stamp books 18,213,310. The revenue value of these issues was $176,974,190.24, an increase of $3,967,713.97 over 1907.

Mail Messenger Service.—There are 7,654 routes in operation, with a length of routes of 5,079 miles and an annual travel of 11,878,031 miles. The annual rate of expenditure was $1,459,694.68. The rate of cost per mile of travel was 12.29 cents, and of mile of routes, $287.36.

Money Orders.—The number and value of money orders issued by the post office department were as follows:—

Year.	Domestic.		International.	
	Number.	Amount.	Number.	Amount.
1907	62,069,783	$479,650,342.64	3,640,136	$84,080,711.06
1908	64,864,570	498,699,637.49	3,711,640	88,972,388.31

The fees for issuing money orders amounted to $4,703,886.57. The gain on foreign exchange purchased for the year in the settlement of foreign money-order balances was $324,244.03. The number of money-order offices is 43,313.

Railroad Mail Transportation.—The number of railroad mail routes in operation is 3,293, with a length of 213,220 miles and an annual travel of 407,799,039 miles. The annual rate of expenditure for this service (1908) was $44,722,985.47 or $209.75 per mile of route, while the average cost per mile of travel was 10.96 cents.

Railway Mail Service.—There are 1,575 lines of railway post offices on railroads, steamboats, and electric cars, operating over a total of

208,481 miles of routes. The total number of officers and employees in the service is 15,295. The number of miles traveled by clerks while distributing mails is estimated at 288,889,195. The expenditure for the fiscal year on account of officers, clerks, and other items was $17,373,336.92. During the year there were four railway postal clerks and two substitute clerks killed and 104 postal clerks and substitutes seriously injured and 536 slightly injured in railroad accidents.

Railway Post Office Car Pay.—The annual rate of expenditure for railway post office car service was $4,681,777.58.

Redemption of Stamped Paper.—The value of postage stamps, stamped envelopes, newspaper wrappers, and postal cards redeemed from postmasters and destroyed was $734,211.12, consisting of 16,699 claims.

Registration.—The aggregate number of letters and parcels registered, paid, and free, were as follows:—

Regulation Screen Wagon Service.—There are 309 wagon routes in operation, with a total length of 1,031 miles and an annual travel of 4,454,373 miles. The annual rate of expenditure was $1,331,572.30, the rate of cost per mile of travel 29.89 cents, and per mile of length of route, $1,291.27.

Rural Delivery.—On November 10, 1908, there were in operation 39,516 routes with a patronage of over 18,000,000 people. Rural delivery is established on nearly 1,000,000 miles of roads throughout the country. The expenditure for 1908 was $34,361,463, as against $14,840 in 1897.

Special Office Service.—There are 1,120 special offices with an aggregate length of routes of 12,453 miles, and of annual travel of 3,298,069 miles, involving an expenditure of $28,828.

Star Route Service.—There are 14,032 routes in operation with a length of routes of 182,286 miles, and an annual travel of 94,314,842 miles, and an annual rate of expenditure of $6,865,476.

Year.	Number of post offices.	Number of Registrations. Paid. Domestic.	Paid. Foreign.	Free.	Total paid and free.	Fees received.
1902	75,924	17,636,071	1,992,072	3,203,257	22,831,400	$1,570,251.44
1903	74,169	19,940,205	2,449,148	3,561,825	25,951,178	1,791,148.24
1904	71,131	21,601,667	2,794,070	3,818,133	28,213,870	1,951,658.96
1905	68,131	23,324,040	3,014,115	3,862,022	30,200,177	2,107,052.40
1906	65,600	26,343,453	3,606,458	4,215,573	34,165,484	2,395,992.88
1907	62,659	29,749,206	4,281,373	4,225,070	38,255,649	2,722,446.32
1908	61,158	31,712,794	4,411,116	4,027,887	40,151,797	2,889,912.80

Total Service.—The entire mail service of the United States, including star, steamboat, special-office, railroad, mail-messenger, regulation, screen or other wagon, and electric or cable car service, in operation June 30, 1908, was as follows:—

State or Territory.	Total Number of Routes.	Total Length of Routes in Miles.	Total Annual Rate of Expenditure.
Maine	580	5,771.70	$ 544,421.15
New Hampshire	272	2,260.60	247,024.13
Vermont	256	2,263.76	270,142.89
Massachusetts	487	3,843.51	1,094,495.30
Rhode Island	72	555.72	69,016.82
Connecticut	223	1,924.95	727,366.74
New York	1,621	11,467.30	4,127,411.71
New Jersey	435	2,770.53	787,043.51
Pennsylvania	1,849	13,921.337	2,926,919.99
Delaware	46	384.31	51,120.24
Maryland	326	4,278.59	1,043,333.41
Virginia	1,105	13,211.11	1,492,499.10
West Virginia	835	8,364.54	519,520.05
Total first section	8,107	74,017.957	$13,900,315.04
North Carolina	747	10,535.92	$ 1,129,859.74
South Carolina	340	4,964.30	451,567.10
Georgia	482	9,703.27	1,055,768.33
Florida	473	7,346.95	533,117.10
Porto Rico	52	3,483.49	77,788.21
Alabama	615	8,092.35	643,929.62
Mississippi	594	9,017.81	741,289.24
Tennessee	462	5,939.98	544,393.23
Kentucky	1,218	13,913.01	1,298,127.22
Total second section	4,983	72,997.08	$ 6,475,789.79
Ohio	905	14,628.80	6,524,465.43
Indiana	473	6,872.45	1,655,596.81
Illinois	641	12,571.96	3,637,379.14
Michigan	698	10,544.09	1,336,945.36
Wisconsin	540	9,275.64	1,470,189.82
Minnesota	530	12,187.45	1,782,310.19
Iowa	455	10,111.93	1,903,048.32
Missouri	880	13,577.28	2,133,782.03
Total third section	5,122	89,769.60	$20,443,717.10

State or Territory.	Total Number of Routes.	Total Length of Routes in Miles.	Total Annual Rate of Expenditure.
Arkansas	871	11,857.55	$ 1,078,078.66
Louisiana	680	7,964.10	545,295.29
Texas	1,166	26,529.57	2,129,474.91
Oklahoma	671	12,735.99	1,239,916.05
Kansas	556	12,801.49	2,040,940.35
Nebraska	430	11,812.01	2,846,502.88
South Dakota	292	7,407.53	421,511.02
North Dakota	377	10,251.89	1,502,256.48
Montana	286	8,021.	413,009.13
Wyoming	215	5,808.34	380,204.36
Colorado	406	8,960.23	806,052.53
New Mexico	324	7,586.89	586,924.95
Arizona	141	4,244.88	382,213.87
Utah	217	4,557.41	339,345.87
Idaho	284	5,850.63	440,030.82
Washington	478	8,322.98	751,828.14
Oregon	393	8,803.62	675,375.89
Nevada	151	5,823.45	261,176.45
California	840	17,103.57	2,361,884.03
Alaska	72	17,071.02	501,479.20
Hawaii	67	10,223.54	109,984.70
Samoa	2	185.	1,000.00
Total fourth section	8,919	213,922.69	$19,814,255.58
Grand total	27,131	450,707.327	$60,634,077.51

Railway Mail service	$17,479,504.84
Pneumatic-tube service	532,679.74
Special-office service	28,828.61
Freight or expressage	211,890.30
Buildings for use of post office department	43,511.31
Mail equipment	489,765.45
Miscellaneous expenses	805.58
Aggregate	$79,421,063.34

COMMERCIAL GEOGRAPHY OF THE WORLD.

AACHEN. The German name of Aix-la-Chapelle.

AALBORG. Fourth city of Denmark, in Jutland, near the Cattegat. Population (1901), 31,462.

AARHUS. Second city of Denmark, in Jutland, on the Cattegat. Population (1901), 51,909.

ABERDEEN. Fourth largest city of Scotland; population (1901), 153,108; on the North Sea, 111 miles north of Edinburgh, at the mouth of the Dee; manufacturing and shipbuilding city. In 1860, King's College (founded 1494) was incorporated with Marischal College (founded 1593) to form the University of Aberdeen. It has over 1,100 students in all faculties; library of 140,000 volumes.

ABU-SIMBEL. In Nubia, on the left bank of the Nile. Contains two notable rock-cut temples built by Rameses II.; one, the temple of Ammon of Thebes; the other of Ptah of Memphis. The former is 119 feet wide and over 180 feet high, with four colossal seated figures over 65 feet high. Its great outer hall is 58 by 54 feet, supported by two rows of square pillars, four in a row, each 33 feet high. In front of the Ptah or smaller temple are six statues of King Rameses and his queen, each 33 feet high. The temples were discovered by Burckhardt.

ABYSSINIA. A monarchy in eastern Africa, south of Nubia, between the Red Sea and the Blue Nile; area about 210,000 square miles; population estimated at 3,500,000. The people are an intermingling of Hamites from the north, Semites from Asia, and negroes from the south. They are very dark in color and much like Arabs. The principal language is Amharic. Most of the people call themselves Christians, but are cruel and superstitious. The country is a high table-land, with mountains sometimes three miles high and many of them with flat tops. Massowa, the chief seaport, is owned by Italy, which, until March 1, 1896, claimed a protectorate over the whole country. In that year the Abyssinians defeated the Italians at Adowa and have since been independent. In 1898 England ceded about 8,000 square miles of East Somaliland to Abyssinia.

ACHAEA. The modern province of Achaea and Elis contains 1,901 square miles with a population of 237,000.

ACHELOUS (*ak-e-lo'us*). The longest river in Greece; rises in Mt. Pindus and flows south after a course of 100 miles into the Ionian Sea; not navigable.

ACONCAGUA. The highest mountain in America. Extinct volcano in the Andes on the boundary line between Chile and Argentina; height, 23,080 feet.

ADELAIDE. Population (1901), 39,200; including suburbs, 162,200. Capital of South Australia, on the Torrens, 7 miles from Port Adelaide (its harbor on the Gulf of St. Vincent).

ADEN. Population (1901), 41,222; area, 75 square miles. A volcanic peninsula and town on the southern Arabian coast, 100 miles east of Bab-el-Mandeb. A very important British coaling station.

ADIRONDACKS. A group of mountains in northeastern New York. The system is independent of the Appalachians and attains its greatest heights at Mount Marcy and Mount McIntyre, over 5,000 feet. Saranac Lake, Lake George, Schroon Lake, Lake Placid, the Fulton Chain, Long Lake, and Keene Valley are the chief resorts. There are hundreds of lakes within the limits; the largest are Champlain and George. The term is loosely applied to an area of over 12,500 square miles in which the mountains are situated.

ADMIRALTY INLET. The main passage of Puget Sound, in the state of Washington. It is from one to ten miles wide. Seattle, Port Townsend, and Tacoma are the chief towns on it. The channel is several hundred feet deep.

ADMIRALTY ISLAND. A well wooded and watered island, 80 miles long, belonging to Alaska.

ADMIRALTY ISLANDS. About 40 islands forming part of Bismarck Archipelago, northeast of New Guinea. They have been a German protectorate since 1885. The largest island is 50 miles long. The inhabitants are savages.

ADRIANOPLE. A city in the Turkish Empire about 130 miles from Constantinople; population, about 81,000; rebuilt by the emperor Hadrian. The city was taken by the Russians, unopposed, in 1878.

ADRIATIC SEA. That part of the Mediterranean between Italy on the west and Austria-Hungary and Albania on the east. Its depth varies from 5,000 feet in the south to only 500 feet in the north. The chief ports on it are Trieste, Venice, Fiume, and Brindisi. The Adige and Po flow into it. The Strait of Otranto connects it with the Ionian Sea.

AEGEAN (*e-je'an*) **SEA.** That part of the Mediterranean between Asia Minor on the east and Greece and European Turkey on the west. The Bosporus, Sea of Marmora, and the Dardanelles connect it with the Black Sea. It is studded with islands, which form the Grecian Archipelago. The islands are divided into two groups, the Cyclades and Sporades. They are mostly of volcanic origin.

AFGHANISTAN. Population, about 5,000,000; area, 225,000 square miles. A country in Central Asia between British India and Persia on the east and west respectively; Russia, Bokhara, and the Pamir on the north, and Baluchistan on the south. It is 500 miles from north to south and 600 miles from east to west.

AFRICA. Population estimated at 175,000,000 (15 to the square mile); area, 11,250,000 square miles, exclusive of islands. Third continent in size, counting the two Americas as one. Extreme length from Cape Blanco in Tunis to Cape Agulhas, about 5,000 miles; extreme width from Cape Verde to Cape Guardafui, 4,500 miles. The coast line is only 18,400 miles long because it is so regular.

AIX-LA-CHAPELLE. Population (1905), 144,095. A frontier city in Rhenish Prussia; an important railway center and an extensive mart for the commerce of Prussia.

ALABAMA. Population (1900), 1,828,607; area, 52,250 square miles, of which 710 are water; colored population, 827,307; German, 3,634; English, 2,347; Irish, 1,792; Scotch, 1,223. The largest cities are Birmingham, Mobile, and Montgomery. The farm area (1904) was 20,685,427 acres, of which 8,654,991 acres are improved. Value of the farm land, $36,105,799; of all farm property, $179,399,882. The crops in 1905 were: maize, 42,971,548 bushels; wheat, 1,041,082 bushels; oats, 3,165,574 bushels; rice, 45,780 bushels; cotton, 1,470,674 bales (of 500 lbs.); 68 factories consuming raw cotton, with 829,835 spindles and 228,942 looms. Coal output (1904), 11,262,016 tons, worth $13,480,111. There are 66 counties in the state; 35 senators, 105 representatives; sessions are held once in four years and are limited to 50 days. Average temperature in the north, 59.70°; in the south, 66.60°. Rainfall, 54 inches in the north; 63 inches in the south. Length, about 336 miles; width (average), 175 miles.

ALASKA. Population (1900), 63,592, of which 30,507 (27,307 males) were white, and 29,536 Indians, Eskimos, Aleuts, etc.; 3,116 Chinese; 265 Japanese and 158 negroes. Area, about 590,800 square miles. Bought by the United States from Russia in 1867 for $7,200,000. The number of sealskins shipped in 1905 was 14,368. The annual catch of salmon is valued at $8,500,000; 30 companies have 55 canning and 12 salting establishments. In 1904 the gold output was 443,177 fine ounces, valued at $9,160,458; of silver, 193,695 fine ounces, worth $110,405. At Fort Yukon the thermometer sinks to 70° below zero in winter.

ALBANY. Population (1900), 94,151. Capital of New York state, on the west bank of the Hudson River, 145 miles north of New York City and 200 miles west of Boston. It is the terminus of the Boston and Albany railroad and of the Erie Canal. The state capitol at Albany is one of the finest capitol buildings in America.

ALBERT EDWARD NYANZA. A lake in central Africa on the boundary line between the Congo Free State and the British protectorate of Uganda, a little south of the equator, about 50 miles long, and 3,100 feet above the sea level. It is connected with the Albert Nyanza by the Semliki River. One of the sources of the Nile. Discovered by Stanley, in 1876.

ALBERT NYANZA. The northernmost of five large lakes in Central Africa which form the reservoir of the Nile. It is 100 miles long and 25 miles wide. Its surface is 2,100 feet above the sea. It was discovered by Baker in 1864.

ALEPPO. Population, 127,150. One of the most important towns of Syria, 80 miles east of the Mediterranean Sea. Its trade is considerable and is attracting many Europeans. It is the seat of a United States consul.

ALESSANDRIA. Population (1901), 71,293. An important town, 47 miles from Genoa. The principal armory of the Piedmontese in the insurrection of Lombardy and Venetia (1848-1849).

ALEUTIAN ISLANDS. A group of over 150 islands forming a continuation of Alaska and running out into Bering Sea towards Asia. The natives are known as Aleuts, and numbered (1900) 2,000.

ALEXANDRIA. Population, 319,766, of whom 268,669 are Egyptians, 46,113 foreigners, and about 5,000 nomad Egyptians. The principal port of Egypt, situated on a peninsula which forms two harbors, and visited by over 2,800 vessels annually. Built by Alexander in 332 B. C.

ALGERIA. A French colony in north Africa. Population, 4,774,042, consisting of 2,000,000 Berbers, 1,000,000 Arabs, 764,480 foreign born, including 300,000 French and 47,564 Jews. Area, 184,000 square miles. It fronts 650 miles on the Mediterranean and runs inland from 320 to 380 miles. Morocco is on the west, the Sahara Desert on the south, and Tunis on the east. The capital is Algiers. Formerly called Numidia, as united under Massinissa and Jugurtha. It became a Roman province (48 B. C.); afterwards it was independent, till the inhabitants invited Barbarossa, the pirate, to assist them against the Spaniards, who, however, seized it (1516). Some time afterward it became the property of the Turks; reduced by Admiral Blake (1655); bombarded by the French (1761); bombarded by the British fleet and the Christian captives set free (August 27, 1816). The French army, under the command of General Bourmont, landed in the Bay of Sidi-Feruch, June 14, 1830; the city was taken July 5; and the whole of the territory of Algeria was subsequently reduced and became a province of France.

ALGIERS. Capital of Algeria, on the west shore of the Bay of Algiers. Population (1901), 96,542; with suburbs, 138,708.

ALLAHABAD. The seat of government of the Northwest Provinces of British India, at the junction of the Ganges and Jumna, 72 miles west of Benares; 496 miles by land and from 808 to 925 miles by water from Calcutta; 386 miles from Delhi; and 840 from Bombay. Population (1901), 175,750. A railway center, a place of pilgrimage, and a great commercial town. The name means "The City of God."

ALLEGHANIES. A name given to the mountain range which traverses Pennsylvania, Maryland, West Virginia, and Virginia, parallel to the Blue and Blue Ridge ranges. The general direction is northeast and southwest. They are rich in coal and iron. The name is sometimes loosely applied to the whole Appalachian range.

ALLEGHENY. A city in Pennsylvania, opposite Pittsburg, at the junction of the Allegheny and Ohio rivers. Population (1900), 129,896, including 30,200 of foreign birth and 3,300 negroes.

ALPS. A mountain system of southern Europe which includes Switzerland and extends into Italy, Austria, France, and Germany. It covers an area of from 80,000 to 90,000 square miles. The total length is over 600 miles and the width from 75 to 150 miles. There are hundreds of peaks in it of over 10,000 feet. Mont Blanc, the highest, is 15,781 feet. The range takes different names in different localities and is much subdivided. The chief passes over the Alps are: (1) La Corniche, a military road from Nice to Genoa. (2) The road over the Col di Tenda between Nice and Cuneo, of which the highest point is 6,150 feet. (3) the road over Mont Genèvre between Provence and Dauphiné and Turin; highest point, 6,100 feet. (4) the carriage road over Mont Cenis, made by Napoleon in 1805 and connecting Savoy with Piedmont; highest point, 6,850 feet. Near this is the railway tunnel of Mont Cenis. (5) Little St. Bernard Pass, connecting Savoy with Piedmont; highest point, 7,180 feet. Over the Central Alps are: (1) Great St. Bernard Pass, connecting the valley of the Rhone with Piedmont; highest point, 8,120 feet. Crossed by Napoleon in 1800. (2) Magnificent road over the Simplon made by Napoleon (1801-1806), connecting Valais with Piedmont and Lombardy; highest point, 6,590 feet. (3) St. Gothard Pass, connecting Lucerne with Lago Maggiore; highest point, 6,936 feet. (4) San Bernardino Pass; 6,770 feet. (5) Splügen Pass, used by the Romans and by the Germans in early times, connects the valley of the Rhine and the Adda; 6,945 feet. (6) Furka Pass, a wagon road connecting the heads of the Rhine and Rhone; 7,992 feet. (7) Stelvio Pass, the most elevated carriage road in Europe; 9,055 feet; between Tyrol and Lombardy. (8) Brenner Pass, from Innsbruck to Trent and Verona; 4,490 feet. The roads over the Western Alps are much lower. There are four railways which cross the Alps; Mont Cenis, between France and Italy; St. Gothard, connecting Lake Lucerne and Lago Maggiore; Simplon, from the upper valley of the Rhone to Lago Maggiore; Brenner, from Munich and Innsbruck to Verona and Venice. Arlberg is the great highway between Austria and Switzerland. The Gornegrat railway, the highest railway in Europe, climbs up to an elevation of 9,908 feet near the Matterhorn.

ALTAI MOUNTAINS. A range in central Asia on the borders of Siberia and the Chinese Empire. They run northwest and southeast. The highest point is Mount Bielukha (White Mountain), over 14,800 feet. The Trans-Siberian railway crosses the range near Lake Baikal.

AMAZON. A river in South America. From the head waters of the Ucayali to the mouth of the Amazon is more than 3,300 miles. It is formed by the union of the Ucayali and the Marañon rivers, which rise in the Andes. The river is two miles wide where it enters Brazil and expands to a width of over fifty miles at its main mouth; while from headland to headland where it enters the sea its width is fully 150 miles. It drains 2,500,000 square miles. The river is navigable by large vessels for 2,200 miles, and considerably farther for small boats. Regular lines of steamers run from the mouth to Yurimaguas on the Huallaga arm of the river in Peru.

AMERICA. America was first discovered by Christopher Columbus (1492); South America by Columbus in 1498; and North America by John Cabot, a Venetian (1497). Area, about 16,000,000 square miles, of which North America has about 8,300,000 and South America, 7,700,000. Population, 143,588,000, of which North America has about 100,000,000 and South America over 43,000,000. The greatest length of America is over 9,000 miles, exclusive of islands; greatest width of mainland, about 3,300 miles. It is divided into two nearly equal parts connected by the Isthmus of Panama. **NORTH AMERICA.** The surface is broken by two ranges of mountains. One, on the west, the Rocky Mountains, which in reality consists of two ranges inclosing the valley of the Great Salt Lake; the other, on the east, the Appalachian, which also consists of two ranges. The highest mountain in North America is Mount McKinley, 20,464 feet, though Mount St. Elias (18,100 feet) long enjoyed this reputation. The volcano Orizaba in Mexico is 18,250 feet high. The principal Arctic river is the Mackenzie; those on the west are: Yukon, Columbia, and Colorado; the Mississippi and Rio Grande are the largest flowing into the Gulf of Mexico; the most important on the Atlantic side are the St. Lawrence, Hudson, and Susquehanna. Thirteen colonies declared themselves independent of the British crown (July 4, 1776) and were recognized as such by England (1783). American Congress first met at Philadelphia (September 5, 1774); removed to Washington (1801). **CENTRAL AMERICA** lies between Mexico and Colombia. The Cordilleras extending through it connect the Andes and the Rocky Mountains. Its people are mostly Indians and half-breeds, with few whites and negroes. **SOUTH AMERICA** has a very even coast line with few good harbors. The Andes run near the west coast and extend from Central America to Cape Horn. The highest peak is Aconcagua, 23,080 feet. The great rivers are on the east and include the Amazon, Orinoco, and La Plata. South American independence was established and recognized by the United States and England, who sent consuls to the new states (1824).

AMIENS. Capital of ancient Picardy, on the Somme, 81 miles from Paris. Population (1901), 90,758. Noted for its world-famous cathedral.

AMOY. A city and seaport of China in the province of Fu-kien, situated on Amoy island, opposite Formosa. Population (1904), 114,100. The tea destroyed in Boston Harbor (1773) came from Amoy. Opened as a port of foreign commerce by the British (1842). Every year 100,000 emigrants pass through Amoy on their way to Singapore.

AMSTERDAM. Capital of the Netherlands, at the confluence of the Amstel and the Y (pronounced Eye). Population (1904), 551,415. The city is cut up into ninety islands by rivers and canals which are crossed

by more than 300 bridges; it has great art galleries and is a center of learning. Its diamond polishing factories are the greatest in the world and are controlled by Portuguese Jews, who employ over 12,000 workmen.

AMU or **AMU-DARYA.** A river in central Asia flowing northerly into the Aral Sea. It is navigable for over 1,600 miles and is especially valuable for irrigation.

AMUR. A river of Asia which in a course of nearly 2,800 miles forms part of the boundary of Manchuria and flows into the strait between the island of Saghalin and the mainland near the Sea of Okhotsk. The river is wide in its lower course and is free from ice for six months in the year.

ANDES. The great mountain chain of South America running from Cape Horn to the north of the continent parallel and close to the Pacific coast, a distance of 4,500 miles. The average breadth is 150 miles and average height, 12,000 feet. Aconcagua, 23,080 feet; Chimborazo, 20,498 feet; Cotopaxi, 19,613 feet; Antisana, 19,335 feet; Huascan, 22,051 feet; Huandoy, 21,089 feet; Misti, 20,013 feet; Ancohuma, 21,490 feet; Illampu, 21,275 feet; Illimani, 21,030 feet; Mercedario, 22,315 feet; Toroni, 21,340 feet are among the highest peaks, many of them volcanoes. The Oroya railway (highest point, 15,665 feet) crosses the Andes and connects Lima and Callao with Oroya and Concepcion. Another railway connects Mollendo with Puno on Lake Titicaca.

ANGOLA. Portuguese colony in west Africa. Area, 484,800 square miles; population, 4,119,000. It touches Congo State, British South Africa, German Southwest Africa, and French Congo. The capital is S. Paul de Loando. The coast line is 1,000 miles.

ANGORA. Turkish province in the interior of Asia Minor, 220 miles from Constantinople. Also a city of the same name within the province. Area of the province, 27,370 square miles; population, 932,800. Population of city, about 30,000. Noted for the breed of long-haired goats. Dogs, rabbits, and cats are also long-haired, a peculiarity dependent upon the climate.

ANNAM or **ANAM.** The central division of French Indo-China from Cochin China on the south to Tonquin on the north with a coast line of 750 miles. Area, 50,000 square miles; population estimated between 5,000,000 and 6,000,000. France gained the territory by conquest between 1862 and 1886.

ANNAPOLIS. Capital of Maryland, on the Severn River, 2 miles from Chesapeake Bay, 26 miles from Baltimore and 37 miles from Washington, D. C. Population (1900), 8,525. The seat of the United States Naval Academy (established 1845).

ANNAPOLIS. A seaport in Nova Scotia, Canada, on Annapolis Basin. Formerly the site of Champlain's colony of Port Royal (1604). 100 miles west of Halifax. Population (1901), 1,019.

ANN ARBOR. County seat of Washtenaw County, Michigan, on the Huron River, 38 miles west of Detroit, on the Michigan Central and the Ann Arbor railroads. Population (1900), 14,509. The seat of the University of Michigan.

ANTICOSTI. A barren island in the Gulf of St. Lawrence and within the Province of Quebec, Canada. It is 135 miles long; extreme width, 40 miles; area, 2,500 square miles; population, 250. Acquired (1896) as a game preserve by M. Menier, a Paris manufacturer.

ANTIGUA. A British West Indian island, the most important of the Leeward Islands. Area, 108 square miles; population (1901), 34,971, of which only 5,000 are white. Capital, St. John (population, 10,000). Discovered by Columbus (1493); acquired by England (1632). Slavery abolished in 1834.

ANTILLES. A name applied to the West Indies exclusive of the Bahamas. Total area, 90,000 square miles; divided into the Greater and Lesser Antilles. In the former are Cuba, Jamaica, Haiti, and Porto Rico.

ANTIOCH. A city in Syria; built by Seleucus after the battle of Ipsus (300 B. C.); 100,000 of its inhabitants killed by the Jews in one day (145 B. C.). The modern town of Antakiyeh, in Aleppo, is situated on the site of ancient Antioch. Population from 18,000 to 28,000.

ANTWERP. The second city of Belgium, on the right bank of the Scheldt. Noted for its fine Gothic cathedral, containing three great paintings by Rubens; picture gallery; and public buildings. Population (1904), 291,949.

APENNINES. A spur of the Alps running through Italy with a total length of 800 miles and breadth of from 25 to 85 miles. The average height is 4,000 feet. Monte Corno (9,580 feet) is the highest peak.

APIA. Chief town of the Samoan Islands, on the northern coast of the German island of Upolu. Population, 3,750, of whom 250 are Europeans.

APPALACHIANS. An extensive mountain system in eastern United States extending from northern Alabama and Georgia to Albany, N. Y. The Adirondacks are geologically separate from these. The system is divided into Blue Ridge, Alleghany Mountains, Catskills, Shenandoah, Cumberland, Clinch, Highlands of New Jersey, White Mountains, Black Mountains, and Unaka. The highest peak is Mount Mitchell in the Black Mountains (6,710 feet).

ARABIA. The southwestern peninsula of Asia. Length, 1,500 miles; breadth, 1,200 miles; area, 1,200,000 square miles; population estimated at 3,500,000 to 5,000,000. The most important cities are Mecca, Muscat, Jeddah, Hodeida, Medina, Riad, Aden and Mocha.

ARAL. A salt-water lake in Russian central Asia, east of the Caspian Sea. Greatest length, 230 miles; greatest width, 182 miles; area, 25,050 square miles. The fourth largest lake in the world. The largest are Caspian Sea, Lake Superior, and Victoria Nyanza. It is 163 feet above sea level and 250 feet above the Caspian. Its average depth is only 50 feet.

ARCHANGEL. A Russian city in Archangel government, on the Dvina River, 26 miles from the White Sea and 740 miles north of St. Petersburg; the only large city close to the Arctic Circle. The harbor is free from ice only from July to September. Population, about 22,000.

AREQUIPA. The second city in Peru, on the Chile River, 105 miles from the port of Mollendo. Population (1901), 35,000.

ARGENTINA or **ARGENTINE REPUBLIC.** The second largest state in South America, on the extreme south of that continent. Length 2,300 miles; breadth, from 200 miles in the south to 1,000 miles in the north. Total area, about 1,135,840 square miles. Population, 5,410,028. The chief towns are Buenos Aires, Córdoba, Rosario, Tucumán, Mendoza, Sante Fé, and Paraná.

ARIZONA. Population (1900), 122,931; area, 113,020 square miles, of which 100 are under water. Indian population, 26,400, of which 20,100 are Navajos. The foreign population (24,233) is chiefly Mexican (14,172). The largest cities are Tucson, Phoenix (capital), Prescott, and Jerome. The farm area (1900) was 1,935,327 acres, of which 254,521 acres were improved. Alfalfa is the chief crop, then wheat and barley. Much has been done by irrigation to overcome the dry climate. In 1905 there were 106,605 horses, 3,923 mules, 19,233 milch cows, 512,294 other cattle, 816,141 sheep, and 18,184 swine. In 1904 the output of copper was 199,481,044 pounds, valued at $24,935,131; 1,779,967 pounds of lead, valued at $3,478,532; 2,314,940 ounces of silver, valued at $1,325,303.

ARKANSAS. Population (1900), 1,311,564, of whom 366,856 were colored and 14,289 were foreign born (5,971 Germans). The largest city is Little Rock. The total farm area in Arkansas (1900) was 16,636,719 acres (6,953,735 acres improved). In 1904-1905 905,000 bales of cotton (500 lbs. to the bale); 734,300 pounds of tobacco, valued at $102,802; 464,000 pounds of wool, valued at $232,000; 2,009,451 tons of coal were produced. There are 25,600,000 acres of timber land. First settlement was made by the French, at Arkansas Post (1685). Admitted to the Union in 1836. The mineral resources of the state are very large, and receive much attention. Stock raising is extensive. Agriculture is the chief industry, corn, cotton, and wheat being the leading productions. Oats, tobacco, sweet potatoes, and fine fruits are also produced to a considerable extent.

ARKANSAS RIVER. Next to the Missouri the largest branch of the Mississippi. Rises in Colorado and flows through Kansas, Oklahoma, and Arkansas. It is 2,000 miles long and is navigable for 650 miles.

ASAMA-YAMA. The highest active volcano in Japan (8,280 feet high). Its last eruption was in 1783. Its crater measures three quarters of a mile in circumference

ASBURY PARK. A city in Monmouth County, New Jersey, 6 miles from Long Branch, on the Atlantic coast. One of the most popular watering places. Population (1900), 4,148.

ASCENSION. A volcanic island in the Atlantic, 700 miles northwest of St. Helena. Area, 35 square miles. It belongs to Great Britain and is used as a coaling and victualing station. Chief town, Georgetown.

ASHANTI or **ASHANTEE.** A British crown colony of the Gold Coast on the west of Africa. Area, about 10,000 square miles; population estimated at 3,000,000. Capital, Kumasi. Ashanti was placed under British protection in 1896. In 1900 the natives rose in sudden rebellion, and in 1901 the country was definitely annexed to Great Britain.

ASIA. The largest division of land on the globe. Area, exclusive of islands, about 16,000,000 square miles. The islands add about 1,000,000 square miles. Population, estimated, 850,000,000. The distance from the Dardanelles to Japan is 5,500 miles; from Malacca in the south to Cape Tchelyuskin in Siberia is 5,100 miles. The coast line is about 33,000 miles long. Its mountains comprise the Altai, Himalaya, Hindu-kush, Pamir, Tibet, Taurus, Anti-Taurus, Libanus, Anti-Libanus, and the highlands of Armenia. Highest known point is Mount Everest, 29,000 feet, now believed to be the loftiest point on the earth.

ASSAM. A division of British India bordering on China, Burma, and Bengal. Area, 52,078 square miles; population (1901), 6,122,201, of whom 1,500,000 are Mohammedans. Over 70 different dialects are spoken in Assam. About 300,000 acres are now under tea cultivation. Shillong is the chief town.

ASSINIBOINE. A river in Manitoba, Canada, formed by the junction of the Qu'Appelle and Souris rivers. The Assiniboine flows into the Red River at Winnipeg. It is 400 miles long.

ASTRAKHAN. A province of Russia bordering on the Caspian Sea; the fourth in size, having an area of 91,337 square miles. Population, about 1,000,000. The chief town is Astrakhan, on an island in the Volga, 60 miles from the Caspian Sea and 933 miles from Moscow. Population (1900), 121,580.

ASUNCION. Capital of Paraguay, on the Paraguay River. Population (1905), 60,259.

ATHABASCA LAKE. In Canada, in the province of Alberta. It is 230 miles long with an average width of 20 miles. It receives the waters of the Athabasca River (647 miles).

ATHENS. Capital of Greece, three miles inland from the coast of Attica. Its harbor is the Piraeus. Population (1906), 170,000.

ATLANTA. Capital of Georgia, in Fulton County, 171 miles north of Augusta and 274 miles from Savannah. Population (1900), 89,872, including 39,500 negroes and 2,500 of foreign birth. Known as the "Gate City." One of the most important railway centers of the South.

ATLANTIC CITY. A seaside resort on a small sandy islet (Absecon Beach) in New Jersey, 60 miles from Philadelphia and 137 miles from New York. Population (1900), 27,838. Summer visitors, about 300,000.

ATLANTIC OCEAN. Over 9,000 miles long; average width, about 3,000 miles; narrowest place is between Cape Palmas in Africa and Cape Sao Roque in South America (1,900 miles); area, 30,000,000 square miles, exclusive of arms and inlets; average depth, between 50° N. and 50° S., 13,000 feet; shallower north and south of these limits; greatest depth, found by the Challenger, 27,366 feet, found north of Porto Rico. The temperature of the water on the floor of the ocean varies from 32° F. to 37° F. The average temperature of the surface water varies from 82° F. in equatorial regions to 32° F. in polar regions. The speed of ocean currents varies from 20 to 75 miles a day.

ATLAS MOUNTAINS. A range extending from Morocco to Tunis in northern Africa. The highest peaks are Jebel Ayashin, 14,600 feet, and Tamjurt, 14,500 feet.

AUCKLAND. Capital of Auckland, on the North Island of New Zealand. Distant 1,315 miles from Sydney, 1,650 from Melbourne, 5,440 from San Francisco. Population (1901), 34,216.

AUGUSTA. Capital of Maine, on the Kennebec River, 45 miles from its mouth, 74 miles from Bangor, and 170 miles from Boston. Population (1900), 11,683.

AUGUSTA. City in Richmond County, Georgia, on the Savannah River, 231 miles from its mouth, 132 miles from Savannah. One of the largest cotton markets of the South. Population (1900), 39,441.

AUSTIN. Capital of Texas, in Travis County, 186 miles from Houston, on the Colorado River. Its capitol, cost $3,500,000, is the largest state capitol in the United States. Population (1900), 22,258.

AUSTRALIA. An island-continent in the southern hemisphere. Greatest length, 2,500 miles; greatest breadth, 1,950 miles; area, 2,972,906 square miles. Population (1901), 3,773,370. The average height of land is only 1,300 feet. Mount Kosciusko (7,336) and Mount Townshend (7,352 feet) are the highest peaks. The Murray River, with its great branch the Darling, is by far the longest river, being navigable for over 1,700 miles.

AUSTRIA-HUNGARY. Area, 240,942 square miles, not including 23,262 square miles of the recently annexed provinces of Bosnia and Herzegovina. Greatest length east to west, 800 miles; north to south, 650 miles. Population (1900), 45,310,835. One of the most mountainous countries of Europe. The chief ranges are Alps, Carpathians, and Bohemian Highlands. The highest summit is the Ortler Spitze, 12,800 feet, in the Alps. The highest in the Carpathians is Gerlsdorfer Spitze, 8,700 feet. The longest river is the Danube.

AZORES. A group of islands in the Atlantic, 800 miles west of Portugal, to which they belong, stretching over 400 miles, with an area of 1,005 square miles. They are nine in number, of which Saint Michael's (299 square miles), Pico (173 square miles), and Terceira (164 square miles) are the largest. The highest volcanic summit is Pico Alto, 7,540 feet. Population (1900), 256,291, chiefly Portuguese.

AZOV, SEA OF. A gulf connected by the Strait of Kertch with the Black Sea, inclosed by Russian territory. Greatest length, 200 miles; width, 120 miles; area, 15,000 square miles.

BAB-EL-MANDEB. The strait connecting the Red Sea with the Arabian Sea and separating Arabia from Africa; divided into two channels by the island of Perim. A dangerous passage, hence called "the gate of tears."

BADAJOZ (*bad-ah-hoce'*). A town in Spain near the borders of Portugal. During the Napoleonic wars (1812) Wellington took it by storm, losing 5,000 men.

BADEN. Grand Duchy of the German Empire, fourth in size (area, 5,821 square miles) and fifth in population (1900, 1,866,584). It forms a part of the southwestern end of the empire. Karlsruhe (111,241) is the capital and Mannheim is an important manufacturing center.

BAFFIN LAND. A large island west of Greenland, a part of the Canadian district of Franklin. Not yet fully explored.

BAFFIN BAY. A sea between North America and Greenland, 800 miles long, average width 280, greatest depth 6,890 feet. Joined to the Atlantic by Davis Strait and to the Arctic by Smith and Lancaster sounds.

BAGDAD. Capital of a Turkish vilayet of the same name; once the most magnificent Mohammedan city; on both sides of the Tigris River. Population (estimated), 150,000, Arabs, Turks, Jews, Persians, Kurds, Armenians, Syrians, and Hindus.

BAHAMAS or **LUCAYOS.** A group in the British West Indies, southeast of Florida and north of Cuba; over 3,000 in number, including reefs, of which only 20 are inhabited; total area, 5,450 square miles. Nassau, on New Providence, is the capital. Population of the islands (1901), 53,735. The islands were discovered by Columbus (1492).

BAHIA. Capital of Bahia, Brazil, on the east shore of Bay of All Saints, 440 miles from Pernambuco and 800 from Rio Janeiro. Population (last census, 1900), 230,000.

BAHREIN ISLANDS. On the western side of the Persian Gulf, under British protectorate. Bahrein, the chief island, is 25 miles long and 9 miles wide.

Pearl fishing is the great industry. Population, about 70,000.

BAIKAL. Third lake in size and largest fresh-water lake in Asia; in the south of Siberia, in Irkutsk, on the Siberian railway. Area, 13,000 square miles; shore line, 1,000 miles; 390 miles long and from 20 to 50 miles wide; greatest depth, 4,500 feet. It is frozen from November to April, when traffic is conducted over the ice.

BAKU. Seaport of the Russian empire. Best port on the Caspian Sea, and largely visited by craft of various kinds. Most productive petroleum district in the world. Population (1900), 179,133.

BALAKLAVA. A small Russian town on the Black Sea, eight miles from Sebastopol. In the battle (October 25, 1854) between the allied armies of France, England, Sardinia, and Turkey against Russia, fought there during the Crimean War, the celebrated "Charge of the Light Brigade" occurred. Out of 600 men only 150 survived from the Light Cavalry commanded by the Earl of Cardigan in an attack upon the Russian guns across an exposed plain. "Some one had blundered" in giving the command.

BALEARIC ISLES. Five islands belonging to Spain in the Mediterranean off the coast of Valencia,—Majorca, Minorca, Iviza, Formentera, and Cabrera. Area, 1,860 square miles. Population, 306,926. Capital, Palma, on Majorca.

BALKAN MOUNTAINS. In southeastern Europe, in Austria-Hungary, Servia, Bulgaria, Roumania, to the Black Sea. Several peaks exceed 7,000 feet.

BALKAN PENINSULA. A name given to the most easterly of the three peninsulas of southern Europe. It includes Turkey in Europe, Bulgaria, Eastern Roumelia, Servia, Montenegro, Bosnia, and Herzegovina. Area, about 175,000 square miles.

BALKASH. The fourth lake in size in Asia, near the eastern borders of central Asia. Area, 8,600 square miles; 330 miles long and from 6 to 54 miles wide. Frozen from November to April.

BALLARAT. Next to Melbourne the most important town in Victoria, Australia, in rich gold fields on the Yarrowee Creek, 74 miles from Melbourne. Population (1901), 43,710.

BALTIC SEA. In northern Europe, surrounded by Germany, Denmark, Sweden, and Russia, and connected with the North Sea by The Sound, Great Belt, Little Belt, Cattegat and Skagerrack. Greatest length, 930 miles; breadth, from 50 to 425 miles. Area 160,000 square miles. Arms of it are gulfs of Riga and Finland in Russia and the Gulf of Bothnia between Russia and Sweden.

BALTIMORE. Metropolis of Maryland and sixth city of the United States, on the Patapsco River, about 14 miles from Chesapeake Bay. Population (1900), 508,957, of whom 68,600 are foreign born, 429,218 are white, and 79,739 colored.

BALUCHISTAN. A semi-independent country of Asia bounded by Afghanistan on the north, British India on the east, Arabian Sea on the south, and Persia on the west. Area, 134,000 square miles. Population (1902), estimated at 800,000. Kelat is the capital.

BANGKOK. Capital of Siam, on the Menam, 20 miles from its mouth. Population is variously estimated at from 200,000 to 600,000.

BANGOR. County seat of Penobscot County, Maine, on the Penobscot River; connected with Brewer by a bridge. Population (1900), 21,850.

BARANOF ISLAND. Chief of the Alexander Archipelago, off southwest coast of Alaska. It is 100 miles long and 25 miles wide. Sitka (1,396) is on the northwest coast.

BARBADOS. Most easterly of the West Indies, owned by Great Britain, 78 miles east of St. Vincent. Area, 166 square miles or 106,240 acres, of which over 100,000 are under cultivation. Population (1900), 195,000. Capital and chief port is Bridgetown.

BARBARY STATES. Morocco, Algeria, Tunis, Tripoli, Fezzan, and Barca, in northern Africa, on the Mediterranean Sea.

BARCELONA. Capital of Catalonia and the second largest city of Spain. On the Mediterranean Sea, 440 miles by rail from Madrid. Population (1897, last census), 510,000. Barcelona is said to have been built by Hamilcar, the Carthaginian general who subdued Spain. Reduced by Louis XIV. of France (1714).

BASEL or **BASLE** or **BALE.** An important manufacturing town in the north of Switzerland. Capital of the half-canton of Basel-Stadt, on the Rhine. The most powerful financial city of Switzerland. Population (1900), 112,885.

BASUTOLAND. British crown colony in South Africa between Orange River Colony, Natal, and Cape Colony. Area, 10,300 square miles. Population, 260,000, almost entirely Basutos. One of the best grain-producing districts in Africa and extremely healthful. Annexed to Cape Colony in 1871 and formed into a separate colony in 1884.

BATAVIA. Capital and chief city of the Dutch East Indies, on the north coast of Java. The most important commercial city of the East Indies. Population, 115,887.

BATON ROUGE. Capital of Louisiana, on the east bank of the Mississippi, 89 miles from New Orleans. Population (1900), 11,269.

BATTLE CREEK. A city in Calhoun County, Michigan, 121 miles from Detroit, at the junction of the Kalamazoo River with Battle Creek. Headquarters of the Seventh Day Adventists. Population (1900), 18,563.

BATUM or **BATOUM.** One of the best harbors on the east coast of the Black Sea, about 8 miles from the Turkish frontier. Given to Russia by the Berlin Congress (1878) on condition that it should never be a naval station. A great center of trade in petroleum, wheat, and manganese. Population (1897), 28,509.

BAVARIA. A kingdom and one of the states of the German Empire, second in size and population only to Prussia. Divided by the Grand Duchy of Hesse. Area, 29,282 square miles. Population (1900), 6,175,153, over 70 per cent. Roman Catholics. Capital is Munich. Nuremberg, Augsburg, Würzburg, Ratisbon, and Bayreuth are important places.

BECHUANALAND. A British crown colony and protectorate in southwestern Africa. Area, 213,000 square miles. Population, 200,000, chiefly natives.

BEIRUT or **BEYRUT.** Chief seaport of Syria, on the Mediterranean, about 90 miles from Damascus. Population, estimated, 120,000, of whom only 4,300 are Europeans.

BELFAST. The principal commercial and manufacturing city in Ireland, at the mouth of the Lagan on Belfast Lough, 12 miles from the Irish Sea and 86 miles from Dublin. Linen is the chief manufacture. Population, 349,000.

BELGIUM. A small European state on the North Sea and inclosed by Holland, Prussia, and France. Area, 11,373 square miles. Population (1900), 6,815,054. Brussels, Antwerp, Liege, and Ghent are the chief cities. Belgium was incorporated with the French republic (September 30, 1794); incorporated with Holland (1815); became independent (1830), establishing a monarchy with a perpetual exclusion of females and their descendants.

BELGRADE. Capital of Servia, at the confluence of the Save and Danube. Population (1905), 80,747.

BENARES. The holy city of the Hindus, on the left bank of the Ganges, in the Northwest Provinces of India, 421 miles from Calcutta and 466 from Delhi. At times over 100,000 pilgrims visit Benares. Population (1901), 209,331.

BENGAL. A lieutenant governorship of India, in the northeastern part, bounded by Nepal, Bhutan, and Assam. Area, 151,543 square miles directly administered by Great Britain and 58,500 square miles held by tributary states. Population (1901), 78,448,735, of whom 64 per cent. are Hindus and 32 per cent. Mohammedans. The prevailing language is Bengalee. The Bengal army is world-famous.

BERING SEA. The extreme northern portion of the Pacific Ocean, connected with the Arctic Ocean by Bering Strait. Its length is 1,000 miles, and breadth, 1,500 miles. The depth of the northern half is from 600 feet to less than 200 feet, and of the southern half, sometimes exceeding 1,000 feet. The Yukon

River flows into it. Pribylov, Nunivak, Saint Matthew, and Saint Lawrence are the chief islands in it.

BERING STRAIT. Connects the Arctic Ocean and Bering Sea. The narrowest part is about 40 miles, between East Cape in Asia and Cape Prince of Wales in America. There are three uninhabited islands in the middle of it. Its greatest depth is from 150 to 250 feet.

BERKSHIRE HILLS. The hill country of western Massachusetts, famed for its beauty. The mountains are a continuation of the Green Mountains of Vermont. The Hoosac and Housatonic rivers are the chief; Greylock (3,535) and Mount Everett (2,635) are the highest peaks.

BERLIN. Capital of the German Empire, of the kingdom of Prussia, and of the province of Brandenburg. The largest and most important city of Europe after London and Paris. On the river Spree. Noted for its fine buildings. It is the residence of the kaiser and his court. Population (1905), 2,040,222.

BERMUDA ISLANDS. A group of 300 small islands in the Atlantic, 750 miles southeast of New York and 600 miles from Cape Hatteras. Twenty are inhabited. Total area, 12,000 acres. St. George, Bermuda, Somerset, and Ireland are the largest. Population, about 16,300, exclusive of soldiers. About 6,300 are whites. Hamilton, on Bermuda, is the largest town (2,000). The Bermuda Islands were discovered in 1522; settled (1609); settlements destroyed by a hurricane (October 11, 1780).

BHUTAN. An independent state of India on the southern slope of the Himalayas, north of Bengal. Area, 16,000 square miles. Population, estimated, 200,000. Capital is Punakha or Dosen.

BIG HORN. A river in the Rocky Mountains; rises near the center of Wyoming, flows into Montana, and after a course of 450 miles flows into the Yellowstone River. It is navigable to Fort Custer, where the Little Big Horn comes in and where the massacre of 1876 occurred.

BILBAO. A seaport of Spain, on the Nervion River, 8 miles from its mouth. Commerce and the iron mines in the vicinity make Bilbao an important place. Population (1905), 83,306.

BISMARCK. Capital of North Dakota, in Burleigh County, on the Missouri River. It was made the capital of Dakota Territory in 1883 and state capital in 1889. Population (1900), 3,319.

BISMARCK ARCHIPELAGO. A group of islands in the Pacific Ocean, 56 miles from New Guinea, belonging to Germany since 1884. Area, 20,000 square miles. Population, estimated, 188,000. Chiefly Papuans. Chief exports are copra and trepang.

BITHYNIA. An ancient kingdom of Asia separated from Europe by the Sea of Marmora and the Strait of Constantinople. Conquered by Croesus, king of Lydia (560 B. C.); by Alexander (332). From its ruins rose the Ottoman Turks, who made Prusa their capital, before they possessed Constantinople (1328).

BLACK HILLS. A mountainous region in South Dakota and partly in northeastern Wyoming covering an area of 6,000 square miles, of which 1,893 square miles form a government forest reservation. The highest peak is Harney Peak (7,216 feet). It is one of the richest gold mining regions of the United States and also yields silver, copper, tin, and iron. The name is derived from the dark forests of pine.

BLACK SEA. Between eastern Europe and Asia Minor; connected with the Mediterranean by the Bosporus, Sea of Marmora, and Dardanelles. Total length from east to west, 750 miles; greatest width, 380 miles; area, 165,000 square miles; greatest depth, over 7,000 feet, and a great part of the central basin is over 6,000 feet. Odessa, Poti, Batum, and Trebizond are its chief ports.

BLARNEY. A village in Ireland, 4 miles from Cork. It contains a castle built (1449) by Cormac McCarthy. Near the summit of the tower is the famous Blarney Stone, the kissing of which is reputed to endow one with the gifts of pleasing flattery and skillful coaxing.

BLOEMFONTEIN. Capital of the former Orange Free State and of the present Orange River Colony, in South Africa, 95 miles from Kimberley. Population (1900), 12,000. It surrendered to General Roberts (March 13, 1900).

BLUE RIDGE. The most easterly range of the Appalachians, running from West Point in New York through New Jersey, Pennsylvania, Virginia, the Carolinas, and Georgia. In Pennsylvania it does not include the Blue or Kittatinny Mountains. Mount Mitchell, or Black Dome (6,710 feet); Guyot's Peak, Sandoz Knob, Gibbe's Peak (all over 6,000 feet) are the highest peaks of the Appalachians and are in North Carolina.

BOGOTA. Capital of Colombia, in the Eastern Cordillera of the Andes on a high plateau 8,700 feet above sea. Population, about 100,000.

BOHEMIA. A crownland of the Austrian half of the Austria-Hungary monarchy, in the northwestern end of Austria. Area, 20,060 square miles. Population (1900), 6,318,697, of whom 63 per cent. are Czechs and 37 per cent. Germans. The capital is Prague (1907), 228,645.

BOKHARA. A Russian protectorate in Central Asia, south of Russian Turkestan and north of Afghanistan, consisting of from 80,000 to 93,000 square miles. Population (estimated), from 2,500,000 to 3,000,000. Bokhara, the capital, and Samarkand are the only towns of importance. The ameer is a mere puppet in the hands of Russia.

BOLIVAR. A department of the Republic of Colombia on the Magdalena River and the Caribbean Sea. Area, 21,345 square miles. Population, about 300,000. Capital, Cartagena. The climate is hot and very unhealthful.

BOLIVAR. The largest state in Venezuela, on the Orinoco river, and bordering on Brazil. Area, 88,700 square miles. Population, over 50,000. Capital, Ciudad Bolivar.

BOLIVIA. A republic in the western part of South America, touching Chile and Peru on the west, Brazil on the north and east, and Paraguay and Argentina on the south. Area, about 515,000 square miles. Population, estimated, 2,500,000, mostly Indians and mestizos. It is one of the highest regions in America, some of its peaks exceeding 21,000 feet. The capital and largest city is La Paz.

BOMBAY. A province in British India, on the west coast, touching Baluchistan on the north and west, Mysore and Madras on the south, and the Arabian Sea on the west. Area, 184,235 square miles. The climate is hot, 130° of temperature is not unusual, and for six months in the year the average is 95°. Population (1901), 18,584,496, made up of 78 per cent. of Hindus, 16 per cent. of Mohammedans, over 170,000 Christians, and 13,000 Jews. The capital is Bombay; population in 1906 was 977,822. The town is situated on the south end of Bombay Island.

BOOTHIA FELIX. A peninsula forming the most northern part of the American continent. It is 150 miles long and 50 miles greatest width. Discovered by Sir John Ross (1829-1833) and named after Sir Felix Booth, the greatest contributor to the expedition. Near Cape Adelaide, on the west coast, Sir James Clark Ross first located the northern magnetic pole (June 1, 1831).

BORDEAUX. One of the most important seaports of France, on the left bank of the Garonne, 60 miles from its mouth. It is the center of French fishing trade from Newfoundland Banks. It also exports wines. Population (1901), 257,638.

BORNEO. The fifth largest island in the world, ranking in area after Australia, Greenland, Baffin Land, and Papua or New Guinea, situated in the East Indian Archipelago. Area, 290,000 square miles; length, 850 miles; greatest breadth, 600 miles. Population, estimated at 2,000,000. The highest peak is Kinabalu (13,700 feet). British North Borneo takes in the northern part of the island with an area of 31,106 square miles and a population of about 175,000. The chief port is Sandakan. Brunei and Sarawak, adjacent districts, are under British protection. Dutch Borneo includes the southern and eastern portions of the island and comprises 213,000 square miles with a population of 1,180,000.

BOSNIA. Virtually, since 1878, a province of Austria. Including Herzegovina, its area is 16,170 square miles. It is exceedingly mountainous; some peaks of the Dinaric Alps rise to a height of 8,000 feet. By the Berlin Congress (1878) the nominal power is in the hands of the sultan of Turkey, but the affairs are managed by the Bosnian Bureau under the direction of the minister of finance of Austria. Population of Bos-

nia and Herzegovina, 1,568,092. The largest towns are Sarajevo, the capital (38,083), Mostar (14,370), Banialuka (13,566), and Dolnia Tuzla (10,227).

BOSPORUS or **BOSPHORUS.** The narrow channel which connects the Black Sea and the Sea of Marmora and separates Europe from Asia. It is 18 miles long, varies in width from 1,800 feet to 2 miles, and is over 100 feet deep. No ship of war except those of Turkey may pass through these waters without the consent of the sultan of Turkey.

BOSTON. Capital of Massachusetts, county seat of Suffolk County, and commercial metropolis of New England. Situated on Boston Harbor. With a population of 560,892 it ranks fifth in the United States. It occupies 43 square miles and includes many former suburban places. It has 590 miles of streets, all but 95 miles of which are paved. The street car rails measure over 200 miles.

BOTHNIA, GULF OF. That part of the Baltic Sea which lies north of the island of Aland and which separates Finland from Sweden. Its greatest length is 400 miles and average width 120 miles. The depth varies from 120 to 300 feet. The surface is usually frozen in winter and traffic between Finland and Sweden is then conducted on sledges.

BOUGAINVILLE. The largest of the Solomon Islands, controlled by Germany. Area, 3,000 square miles, and it is densely populated. Mount Balbi, rising to over 10,000 feet, is the higher of the two active volcanoes.

BOULOGNE. A fortified seaport of France, on the English Channel, 22 miles from Calais and 139 from Paris. Population, 46,807. Besieged and taken by Henry VIII. (1544). Sold to France for 400,000 crowns (1550). Sir Sidney Smith failed in an attack on the flotilla there (November, 1806).

BRAHMAPUTRA. A river of Asia; rises in Tibet near the head waters of the Sutlej and Ganges at a height of 16,000 feet; flows down the Himalayas. Ninety miles from the sea it unites with the Ganges. Total length, about 1,800 miles.

BRANDENBURG. The most populous province of Prussia, in the center of the kingdom. Area, 15,381 square miles. Population (1900), 3,107,951. Berlin, Potsdam, and Frankfort are the chief cities.

BRAZIL. The largest country in South America. Area, 3,218,139 square miles; greatest length, 2,660 miles; greatest width, 2,700 miles. Rio Janeiro is the capital. Discovered by the Spaniards (1500). The Portuguese settled there (1501); diamond mines discovered (1730); the royal family arrived (1807); revolution took place (1821); its independence declared and the prince regent proclaimed emperor (1822); the king of Portugal ratified a treaty recognizing its independence (1825); war with Buenos Aires (1826); death of the dowager princess, at Lisbon (August 8, 1829); revolution and expulsion of the emperor, Dom Pedro, and the appointment of a regency in the name of his son (1831); became a republic (1889).

BRISBANE. Capital of Queensland, Australia. A seaport about 500 miles from Sydney, at the mouth of the Brisbane River, on Moreton Bay. Population (1901), 53,589.

BRITISH AMERICA. A term usually applied to Canada and Newfoundland. In a broader sense it includes also Bermuda Islands, British West Indies, Belize or British Honduras, British Guiana, and the Falkland Islands.

BRITISH CENTRAL AFRICA. British territory north of the Zambesi River, including the northern part of Rhodesia and the British Central Africa Protectorate.

BRITISH CENTRAL AFRICA PROTECTORATE. The eastern part of British Central Africa, known formerly as Nyassaland. It touches German East Africa, Rhodesia, Portuguese East Africa, and Lake Nyassa. Area, 42,000 square miles. Native population, about 900,000; Europeans, 450. Blantyre (6,000) is the largest town and Zomba is the capital.

BRITISH COLUMBIA. A large province of Canada on the Pacific coast between the United States and Yukon. Area, 340,000 square miles. Population (1901), 178,657, of whom 25,068 are Indians, 14,576 Chinese, 3,515 Japanese. Vancouver is the largest city and Victoria, on Vancouver Island, is the capital. Other cities are Nanaimo, Nelson, Rossland, and New Westminster.

BRITISH EAST AFRICA. That portion of Africa on the Indian Ocean south of Abyssinia and Egyptian Sudan, east of the Congo State and French Congo, and north of German East Africa. It is divided into Uganda and British East Africa Protectorate. Area, about 1,000,000 square miles.

BRITISH EAST AFRICA PROTECTORATE or **IBEA.** The southeastern part of British East Africa from the Umba river to the Juba river. Area, 280,000 square miles. Population, estimated, 2,500,000, including 450 Europeans, 25,000 Asiatics. Mombasa (27,000) is the capital and largest town. From 1886 to 1894 the country was controlled by the Imperial British East Africa Company (from the initials of this name the word Ibea is formed). In 1895 the protectorate was constituted.

BRITISH HONDURAS. A British crown colony in Central America on the Caribbean Sea, south of Mexico and north of Guatemala. Area, 7,562 square miles. Population (1901), 37,500, chiefly negroes, mulattoes, and Indians. Belize (9,000) is the capital.

BRITISH SOMALILAND. A British African protectorate on the Gulf of Aden, touching Abyssinia and Italian Somaliland. Area, estimated, 68,000 square miles. Population, about 300,000 nomadic Mohammedans. Berbera (30,000), the capital, Zeila (15,000), and Búlhar (12,000) are the chief towns.

BRITTANY or **BRETAGNE.** A peninsula of five departments of France on the northwest washed by the British Channel, the Bay of Biscay, and the Atlantic Ocean. It is a great resort for automobilists and other tourists. The inhabitants are Bretons and lead a simple life guided largely by traditions and superstitions.

BRUSSELS. Capital of Belgium, on the river Senne, in the center of the country. Population (1906), 623,041, with suburbs. One of the finest cities of Europe and known as "petit Paris."

BUCHAREST. Capital of Roumania, on the river Dimbovitza. Population (1899), 282,071, of whom over 200,000 were Orthodox Greek Church and 43,000 Jews.

BUDAPEST. Capital of Hungary, on both banks of the Danube, 173 miles from Vienna. Buda is on one side of the river and Pest on the other. The celebrated springs of Hunyadi-Janos, Arpad, etc., are located here. It is one of the greatest milling (grain) centers of the world. Population (1900), 732,322, having increased over 45 per cent. in ten years.

BUENOS AIRES. The largest and most important province of Argentina. Area, 118,000 square miles.

BUENOS AIRES. The capital of Argentina, on the La Plata River, 175 miles from its mouth and 125 miles from Montevideo. Population (1900), 800,951, about 50 per cent. of whom are foreigners, mostly Italian, Spaniard, and French. Buenos Aires was founded in 1535 by Pedro de Mendoza; rebuilt (1580); taken from the Spaniards by Sir Home Popham (June 21, 1806); retaken after an attack of three days (August 12); British attack on, under Lieutenant General Whitelock, in which the British were repulsed (July 6, 1807); declaration of independence published (July 19, 1816).

BUFFALO. County seat of Erie County, New York. The second city in the state, at the eastern end of Lake Erie, at the head of the Niagara River, 20 miles above the Falls, 540 miles from Chicago, 297 miles from Albany, and 410 from New York. Area, 42 miles. Population (1900), 352,387. It ranks eighth among American cities.

BULGARIA. A principality on the Black Sea in the northeastern part of the Balkan peninsula, touching Turkey, Servia, and Roumania. Area, including Eastern Roumelia, 38,080 square miles. The highest mountain is Musalla (9,610 feet). Population (1900), 3,733,189, mostly Bulgarians. Sofia is the capital.

BURMA. The largest province of British India, extending from Tibet far down the Malay peninsula with a length of 1,250 miles. Area, 168,550 square miles. Population (1901), 9,221,161, mostly native. Rangoon is the capital.

CADIZ. One of the most important seaports of Spain, on the Atlantic. Population (1900), 69,382. It is one of the most ancient towns of Europe, having been built about 1000 B. C. by the Phoenicians, who called it Gadir.

CAIRO. Capital of Egypt and largest city of Africa, on the right bank of the Nile, about nine miles above the point of division into the Rosetta and Damietta branches, 150 miles southeast of Alexandria, and 80 miles west of Suez. Population, 570,062. It is the residence of the khedive and the seat of government.

CALAIS. A fortified seaport town of France, on the Straits of Dover, at its narrowest point (18 miles across from Dover). Population (1906), 66,627.

CALCUTTA. Capital of Bengal and the metropolis of British India, on the Hugli, a branch of the Ganges, 100 miles from the sea. It is the headquarters of the governor general of India. One third of all of the trade of India passes through Calcutta. Population (1901), 1,026,987, of whom only 30,000 are Christians. (See THACKERAY and BLACK HOLE OF CALCUTTA.)

CALEDONIA is the name given by the Romans to that part of Scotland lying between the Forth and the Clyde. The inhabitants were called Caledonii. The name disappears in the fourth century, and the people of Scotland began to be called Picts (to the east) and Scots (to the west). In more modern times Caledonia is a poetical name for Scotland.

CALICUT. A seaport in Malabar District, British India, 566 miles south of Bombay, on the Indian Ocean. Population (1901), 76,981. Calico takes its name from the city. Vasco da Gama touched here (1498).

CALIFORNIA. Originally a part of Mexico; proclaimed a United States possession at Monterey (July 5, 1846); formally ceded by the Treaty of Guadeloupe (February 2, 1849); admitted (September 9, 1850). Area, 158,360 square miles. Population (1900), 1,485,053, of whom 11,045 were colored, 45,753 Chinese, and 367,240 foreign born. The population was estimated (1905) at 1,750,000. In 1900 there were 72,542 farms of 28,828,951 acres (11,958,837 improved), worth $796,527,955, and producing annually crops worth $131,690,606. The product of gold since 1848 is $1,400,000,000. In 1904 it was 901,484 fine ounces, worth $18,633,676. In the same year 1,480,589 ounces of silver, worth $843,936, and 29,961,590 pounds of copper, worth $3,786,022, were produced. The output of quicksilver amounted to 29,217 flasks of 75 pounds each, worth $1,270,940. Petroleum amounting to 29,649,434 barrels, worth $8,265,434, was the largest yield from any state. Borax amounting to 45,647 tons, worth $698,810, formed nearly the entire product of the United States. Railroads include (1905) 6,262 miles of steam roads and over 1,000 miles of electric. Four completed roads and a fifth now building provide for conducting the traffic eastward. California was first settled by the Spaniards (1769) at San Diego. Commerce is extensive with China, Japan, the East Indies, and Australia, and with other states and territories. No other state in the Union has developed so rapidly.

CAMBRIDGE. A university town in Cambridgeshire, England, on the Cam, 57 miles from London. Population (1901), 38,400.

CAMBRIDGE. A university town in Middlesex County, Massachusetts; the seat of Harvard University; on the Charles River opposite Boston, of which it is a suburb. Population (1900), 91,886.

CAMPAGNA DI ROMA. The plain surrounding Rome, Italy. It is about 90 miles long and from 25 to 40 miles wide. It is low and very unhealthful. Improved drainage and the planting of the eucalyptus tree have much improved it.

CANADA. The Dominion comprises the northern part of North America. Area, 3,745,574 square miles. Population (1901), 5,371,315, of whom 87 per cent. were natives of British North America. There were 1,649,371 French-speaking and 3,721,944 English-speaking persons. In 1903 there were 108,233 Indians. The Dominion of Canada was formed in 1867. It now includes the provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, British Columbia, Alberta, Saskatchewan, Keewatin, Yukon, Mackenzie, Ungava, and Franklin. In 1904 there were 18,973 public schools with 29,930 teachers and 1,113,711 pupils on which over $11,800,000 were expended. In Ontario, Quebec, New Brunswick, and the Northwest there are separate schools for Roman Catholics; in the other provinces the schools are nonsectarian. The gross debt of Canada in 1905 was $377,678,580 and the net debt, $266,224,167. There were (1901) 30,166,033 acres of improved land out of 63,422,338 acres of occupied land. The timber products in 1904 amounted to $14,962,927. The fisheries in 1903 produced $23,101,878. The mineral products in 1904 amounted to $60,343,165. The railways in 1904 extended 19,611 miles, of which the Canadian Pacific measures 2,906 from Montreal to Vancouver. Canada was discovered in 1499; settled by the French (1534); Quebec built by Samuel Champlain (1608); conquered by the English (1759); ceded to them (1763).

CANARY ISLANDS. A group in the Atlantic Ocean off the northwest coast of Africa. They form a province of Spain. Area, 2,808 square miles. Population (1900), 358,564. Seven of the islands are inhabited: Teneriffe, Gran Canaria, Palma, Gomera, Ferro or Hierro, Fuerteventura, and Lanzarote. There are besides six small islets. There are two slumbering volcanoes, of which Pico de Teyde, often called the Peak of Teneriffe, is the higher (12,190 feet). The islands were discovered in 1334 and were conquered by the Spanish in 1491.

CANDIA. The ancient name of Crete.

CANNES (*kan*). A French seaport, on the Mediterranean, 22 miles from Nice. Famed for the salubrity of its climate and is a favorite winter resort. Population (1901), 30,420.

CANTABRIAN MOUNTAINS. A range of mountains extending for 300 miles across the north of Spain and along the Bay of Biscay from the end of the Pyrenees to Cape Finisterre.

CANTERBURY. A cathedral town and archbishopric in Kent, England, on the Stour, 56 miles from London. It is the ecclesiastical metropolis of all England. Population (1901), 24,900.

CANTON A chief commercial city of China, capital of the province of Kwang-tung, and residence of the viceroy. It is situated on the Chu-kiang or Pearl River, about 70 miles from the sea. One of the principal seats of the silk industry. Estimates of the population vary from 500,000 to 2,500,000, which latter is the estimate of the Customs Trade Report.

CAPE ANN. A cape which marks the northern limit of Massachusetts Bay, 31 miles from Boston. It is marked by two fixed white lights on Thatcher Island.

CAPE BARROW. The most northerly point of Alaska, on the Arctic Ocean, in latitude 71° 23′ N. An important whaling station.

CAPE BLANCO. The most westerly point of Oregon, on the Pacific Ocean, at the mouth of the Sixes River.

CAPE BRETON ISLAND. An island forming part of the province of Nova Scotia, 100 miles long and 85 miles wide, separated from the mainland of Nova Scotia by the Gut of Canso. It incloses the land-locked Bras d'Or lakes. The chief towns are Sydney, a cable station, Arichat, and the historic Louisbourg. Population (1901), 97,200.

CAPE CHARLES. At the northeast side of the entrance to Chesapeake Bay.

CAPE CLEAR. The southernmost point of Ireland, on Clear Island, County Cork. The first land seen by American steamers approaching England. The Fastnett Rock is 3½ miles southwest.

CAPE COD. The point marking the southeastern extremity of Massachusetts and embracing Barnstable County. It is about 65 miles long from the head of Buzzard's Bay.

CAPE COLONY or **CAPE OF GOOD HOPE.** A British colony in South Africa. Area, 277,000 square miles. Population (1904), 2,904,804.

CAPE FAREWELL. The southern extremity of Greenland, in latitude 59° 49′ N.

CAPE FEAR. The extremity of Smith Island, North Carolina, near the mouth of the Cape Fear River. Dangerous to navigation.

CAPE FINISTERRE. The northwestern extremity of Spain. Noted for the two great naval victories by the English over the French (May 3, 1747, and July 22, 1805).

CAPE FLATTERY. The extreme western point of the United States, not considering Alaska, on the south side of the entrance to the Strait of Juan de Fuca, in the state of Washington, on Tatoosh Island. Longitude 124° 44′ W.

CAPE HATTERAS. A point on Hatteras Island, which borders Pamlico Sound. Dangerous to navigation on account of shoals, gales, and storms.

CAPE HENLOPEN. A point on the east coast of Delaware, 13 miles from Cape May.

CAPE HENRY. A point on the east coast of Virginia, at the south entrance to Chesapeake Bay and opposite Cape Charles.

CAPE HORN. The most southerly point of America, on an island of the same name. Latitude 55° 59′ S.

CAPE MATAPAN. The southern extremity of Greece.

CAPE MAY. The southernmost city of New Jersey. Noted as a watering place. Often called Cape City or Cape Island City.

CAPE MENDOCINO. The extreme western point of California. Longitude 124° 23′ 27″ W.

CAPE NOME. A point on the western mainland of Alaska in the northwestern part of Norton Sound.

CAPE OF GOOD HOPE. A point in South Africa rising 1,000 feet above sea. While it is half a degree farther north than Cape Agulhas, it is really the turning point of the continent.

CAPE PRINCE OF WALES. The west point of the mainland of Alaska and of America, opposite East Cape in Siberia.

CAPE RACE. The southeast extremity of Newfoundland.

CAPE SABLE. The south point of the mainland of Florida.

CAPE TOWN. Capital of Cape Colony or Cape of Good Hope in British South Africa. On Table Bay on a slope of Table Mountain. Population (1904), 77,668.

CAPE VERDE. The most westerly point of Africa, on the Atlantic Ocean, midway between the mouths of the Gambia and Senegal.

CAPE VERDE ISLANDS. A Portuguese group in the Atlantic, west of Africa. Santiago is the largest and most important. The total area is 1,480 square miles. There is an active volcano (9,000 feet) on Fogo. Population (1900), 147,424.

CARACAS. Capital of Venezuela, 6 miles south of its port, La Guayra. Population, 72,429.

CARDENAS. A seaport of Cuba in Matanzas, on the north coast, 80 miles east of Havana. Population, 21,940.

CARDIFF. A seaport of Wales, capital of Glamorganshire, on the river Taff near the Severn and 176 miles west of London. Noted for coal and iron. Population (1901), 164,400.

CARIBBEAN SEA. A part of the Atlantic Ocean lying between North and South America and communicating with the Gulf of Mexico by the Yucatan Channel.

CARIBBEES. Those of the West Indies from Porto Rico to Trinidad and including the Leeward and Windward groups.

CARIBOO. (1) A district in British Columbia on the Fraser River; population, 10,000. (2) A point on the north shore of Lake Huron, Ontario, noted for Indian hieroglyphics.

CARINTHIA. A province of Austria-Hungary, drained by the Drave; noted for lead mines. Population, 361,008. Capital, Klagenfurt.

CARNIOLA. A province of Austria-Hungary, crossed by the river Save and the Carnic and Julian Alps; noted for quicksilver mines. Population, 498,958. Capital, Laibach.

CAROLINE ISLANDS. A coral group in the North Pacific; German possessions, except Guam, which belongs to the United States. Subject to violent hurricanes. Population, with Palos, 36,000.

CARPATHIAN MOUNTAINS. Separate Hungary for 700 miles from Roumania, Galicia, Bukowina, Silesia, and Moravia. Covered with beech and pine. Average height, 3,600 feet; highest point, Butschetje, 9,258 feet, in Transylvania.

CARRANTUOHILL. Highest point in Ireland, 3,414 feet, in MacGillicuddy Reeks, County Kerry.

CARRARA. A city in Italy, 59 miles southwest of Modena, in the Apennines. Noted for white marble quarries. Population, 31,000.

CASCADE MOUNTAINS. The northern continuation of the Sierra Nevadas running through Oregon, Washington, and British Columbia. Highest point, Mount Shasta, 14,440 feet.

CASCADE RIVER. A tin-mining center in Tasmania, 50 miles northwest of Launceston.

CASERTA. A province in Campania, Italy. Exports oil, wine, and silk. Population, 783,000.

CASPIAN SEA. The largest inland lake in the world; between Europe and Asia; 300 miles east of the Black Sea and 84 miles below its level. Length, 750 miles; width, 250 miles. Receives the Volga, Ural, Aras, Kur, and Terek. No outlet, no tides, and less salt than the ocean. A line of steamers connects Europe with the Trans-Caspian Railway.

CATANDUANES. One of the Philippines, 40 miles long, 15 miles wide; very fertile.

CATSKILL MOUNTAINS. A group in Greene and Ulster counties, N. Y., in the Appalachian system. Highest points are Round Top, 3,804 feet, and High Peak, 3,720 feet.

CATTEGAT. A channel in the North Sea between Sweden and Denmark.

CAUCA. A state of Colombia, on the Pacific Ocean. Population, 621,000. Capital, Popayán.

CAUCASIA. A lieutenancy of Russia between the Sea of Azov and the Caspian. Population, 7,458,151. Capital, Tiflis.

CAUCASUS. Mountains extending from the Black Sea to the Caspian, 700 miles long, from 60 to 120 miles wide; between Europe and Asia. Highest points are Elbruz, 18,500 feet, Koshtantau, 16,900 feet, and Kazbek, 16,546 feet.

CELEBES. A Dutch island in the Malay Archipelago, on the equator, east of Borneo, from which it is separated by the Strait of Macassar. Exports rice, sugar cane, cotton, and sago. Contains several active volcanoes. Natives are Mohammedan. Population, 750,000.

CENIS. A mountain summit of the Graian Alps between France (Savoy) and Italy; height, 11,457 feet. Crossed by road and pierced by a tunnel, opened September 17, 1871.

CENTRAL PROVINCES. A chief commissionership of British India, including Nagpur, Jabalpur, Narbadda, and Chattisgarh. Area, 86,501 square miles. Population, 10,774,890. Chief town is Nagpur.

CERAM or **SIRANG.** A Dutch island. One of the largest of the Moluccas, in the Malay Archipelago. Population, 300,000.

CERRA DEL COBRA. A mountain in the Andes, in Atacama, Chile; height, 18,320 feet.

CEYLON. An island south of India, separated from it by the Gulf of Manar and Palk Strait. Length, 270 miles; width, 100 miles; area, 25,634 square miles. Population, 3,008,239. Exports tropical produce, gems, and pearls. Capital, Colombo.

CHARLESTON. Chief seaport and largest city of South Carolina. Defended by Forts Sumner and Moultrie. Great commercial center. Population, 54,955.

CHARLOTTETOWN. Capital of Prince Edward Island, Canada. Population, 11,374.

CHAUTAUQUA. Lake in New York, seven miles from Lake Erie; 18 miles long; from one to three miles wide; 1,290 feet above the Atlantic. The highest navigable water in the United States.

CHELSEA. (1) A city in Middlesex, England, on the Thames (a part of London); contains hospital for aged and wounded soldiers; population, 96,272. (2) A city in Massachusetts, suburb of Boston; visited in April, 1908, by a terrible fire which destroyed a large part of the city.

CHEYENNE. Capital of Wyoming, on the Union Pacific Railway; 6,075 feet altitude; 1,918 miles from New York, 1,348 from San Francisco, and 1,432 from Galveston. Population, 11,690.

CHICAGO. Largest city of Illinois, on the southwest shore of Lake Michigan; 597 feet above the sea and 15 feet above the lake. Most rapidly progressive American city; population in 1837, 4,170; in 1870, the fifth city in the Union; in 1880, the fourth; in 1890, the second. Population (1900) 1,698,575; estimated (1906), 2,049,185.

CHIHUAHUA. A state in Mexico; population, 327,004. Also capital of the state; 4,500 feet altitude; population, 30,405.

CHILE or CHILI. A South American republic between the Andes and the Pacific Ocean; 2,650 miles long by 220 miles broad; language, Spanish; religion, Roman Catholic. Fertile and rich in minerals. Capital, Santiago. Population, 2,766,747.

CHINA. A vast empire of eastern Asia, including Manchuria, Mongolia, Tibet, Hsin-Chiang with collective population of over 14,000,00, and China proper, with a population of 386,000,000. It borders on Siberia, India, Burma, and Assam; considerably larger than Europe; 4,218,401 square miles.

CHINA PROPER (Chung Kwe, Tsin, Cathay). Southeastern part of the empire, lies on Yellow Sea and Pacific Ocean, south of Mongolia and Manchuria, east of Mongolia, Tibet, and Burma, and west of Assam and Chinese Sea. Separated from Mongolia by Great Wall of China, an earth rampart 10 to 30 feet high, 1,250 miles long, to keep out the Tatars. China proper is 1,600 miles long north to south and from 900 to 1,300 miles east to west; 1,336,841 square miles; divided into 18 provinces—6 maritime, 6 frontier, and 6 inland; has great ranges of mountains running east to west. The Plain of China in the northeast is 700 miles long, contains 200,000 square miles, and is very fertile—the yellow-earth region of northern China being the most fertile in the world. China proper has four great river basins—Yang-tse-kiang, Hoang-ho, Si-kiang, and Pei-ho. China is probably greatly indebted to its magnificent and navigable rivers for its early civilization. It contains great industries in agriculture, manufactures, and commerce; mineral wealth is great; has three fourths of foreign trade with Britain; the people are of Mongolian race; government is despotic monarchy, present dynasty (Manchu) has held the throne since 1644; has nine orders of mandarins (civil and military authorities), all appointed by competitive examination; religion is Confucianism (ancestor worship), but large numbers of lower classes are Buddhists or Taoists. There are said to be 30,000,000 Mohammedans, 1,000,000 Roman Catholics, and 50,000 native Protestants. Capital of the empire is Peking. Population, 386,000,000.

CHING-KIANG. A city of China, province of Kiang-su, on the right bank of the Yang-tse-kiang, at the junction of the Grand Canal, 45 miles east of Nan-king. Population, estimated (1906), 170,000.

CIENFUEGOS. A town in Cuba on the south coast. Population, 65,067.

CINCINNATI. The "Queen City"; a city in Ohio on the Ohio River. The great pork center; important manufactures; and a university. Population (1900), 296,908; estimated (1905), 343,337.

CLEVELAND. A city in Ohio on the south shore of Lake Erie on the Cuyahoga River; called the "Forest City" from its abundant shade trees. Has extensive iron and oil works and shipbuilding interests. Its growth has been rapid. Population in 1860, 43,417; in 1890, 261,353; estimated (1905), 437,114.

COLOMBIA. A South American republic of eight departments, between Panama and Caribbean Sea and Ecuador and the Pacific and Venezuela; crossed by the Andes and the Magdalena and Cauca rivers; cities on the mountain slopes are healthful; great mineral wealth; language, Spanish; religion, Roman Catholic. Called New Granada from 1832 to 1861. Population, 3,878,600. Capital, Bogota.

COLORADO. A state of the United States; called the "Silver State"; touches Wyoming and Nebraska on the north, Nebraska and Kansas on the east, New Mexico and Oklahoma on the south, and Utah on the west. Crossed by the Rocky Mountains, of which Pike's Peak, 14,108 feet, is the highest point in the state. Has great mineral wealth. Population, 410,975. Capital, Denver.

COLORADO RIVER. (1) Flows from Wyoming to the Gulf of California, 1,050 miles long. For 600 miles the river flows 3,000 feet below the general surface, and of this length 300 miles are known as the Great Cañon of the Colorado. (2) In Argentina, 900 miles long, flowing from the Andes to the Atlantic. (3) In Texas, enters the Gulf of Mexico at Matagorda; also 900 miles in length.

COLUMBIA, DISTRICT OF. A division, 70 square miles, on the Potomac River; belongs to no state, but is under the direct jurisdiction of Congress; contains Washington, the national capital. Population, 229,796; estimated (1905), 302,883.

COLUMBUS. Capital of Ohio, on the Scioto River; 116 miles northeast of Cincinnati. Has important iron works. Population (1900), 125,560; estimated (1905), 142,105.

CONCEPCION. A province of Chile; area, 3,535 square miles. Population, 218,815.

CONGO or KONGO. A free state in Africa, including the greater part of the Congo basin; contains 800,000 square miles; has French Congo and Cobinda (Portuguese) on the west, the river Mobangi on the north, British and German East Africa on the east, and Rhodesia and Portuguese West Africa on the south. The state was founded at the Berlin Conference (1885). The sovereign is the king of Belgium. The founder and first governor general was Stanley. Commerce is free, only necessary dues being levied. Central government is at Brussels. Capital is Boma, on the north bank of the Congo River, 50 miles from the sea, and there are 11 administrative provinces. Numerous commercial products, but slave trade rife in Upper Congo. Matadi-Leopoldville railway will tend greatly to develop the state. Population variously estimated at from 8,000,000 to 20,000,000.

CONGO. The greatest river in Africa, with a volume of water far exceeding that of the Mississippi; flows north (as Luapula) from Lake Bangweolo, 11° 30′ S. 28° E., to Lake Moreo, then north and northwest (as Lualaba and Ugarowa) to about 3° N., then southwest to the Atlantic at 6° S. With its tributaries it forms 10,000 miles of navigable waterway, but at places it is obstructed by falls and rapids. From its mouth to Matadi (110 miles) it is navigable, but there are 32 falls from Matadi to Leopoldville (200 miles). There is a railway in course of construction along this part of the river. Above Leopoldville it is navigable for 1,000 miles to Stanley Pool. On this stretch (Upper Congo) there are 30 stations and a regular service of steamers. Its tributaries are Mobangi, Kassai, and Aruwimi, the last flowing through the dense forests of Stanley's last march.

CONNECTICUT. Area, 5,004 square miles. Population (1900), 908,420; 454,294 male, 454,126 female; 15,226 were negroes. Foreign-born population, 238,210. Estimated population (1906) of the state, 1,005,716; of the chief cities—New Haven, 121,227; Hartford, 95,822; Bridgeport, 84,274; Waterbury, 61,903. Capital invested in agriculture (1900), $113,305,580; the production of tobacco was 21,744,000 pounds. Granite produced (1907) valued at $1,385,369; mineral waters, $76,826. The manufacturing establishments (1905) numbered 3,477; aggregate capital, $373,283,580; cost of raw material used, $191,301,881; value of output, $369,082,091. There were (1907) 1,367 miles of railway track, besides 754 miles of electric track.

CONSTANTINOPLE. Capital of Turkey, the ancient Byzantium. Situated at the junction of the Bosporus and the Sea of Marmora. Rebuilt by Constantine in 330. Population (with suburbs), 873,565, of which 384,910 are Mussulmans.

COPENHAGEN. Capital of Denmark, on the east coast of Zealand. The seat of a university. Birthplace of the sculptor Thorwaldsen. Has a great museum of northern antiquities. Manufactures porcelain and iron products. Population, 312,387.

COREA. A peninsula in eastern Asia, 500 miles long and 150 miles wide, between the Yellow Sea and the Sea of Japan. Under the control of Japan since the war in 1904 and 1905. Population variously estimated at from 8½ to 12 millions. In 1908 the emperor was forced to abdicate and was sent to Japan, the throne being held by his nephew under complete domination by Japanese influence. Capital is Port Hamilton.

CORK. Capital of County Cork, Ireland, on the south coast at the mouth of the river Lee, 166 miles southwest of Dublin. One of the finest harbors in the world, and a great mart for grain and provisions. Population, 100,022. Distance from Liverpool, 249 miles; from New York, 2,835 miles.

CORNWALL. A county in the extreme southwest of England noted for its tin and copper mines. Area,

1,350 square miles. Population, 322,589. Capital is Bodmin, but Truro is the largest city.

COROMANDEL COAST. The east coast of the Madras Presidency in India.

COSTA RICA. A republic of Central America. Area, 18,690 square miles. Population, 331,400. Coffee and bananas are the chief exports. Coffee exported in 1904 and 1905 was 355,246 cwts. Ports are Puerto Limón and Puntas Arenas.

CRETE or **CANDIA.** A Turkish island in the Mediterranean 150 miles long and from 6 to 35 miles wide. Population (1904), 310,400, of which 269,319 are Christians. Chief ports are Candia, Canea, and Retimo. Products are olive oil (for soap making), wine, currants, oranges, lemons, and other fruits. Shipping amounts to about 1,250,000 tons annually.

CRONSTADT or **KRONSTADT.** A port, naval and coaling station of Russia, on Kotlin Island, in the Gulf of Finland, 20 miles west of St. Petersburg and 1,202 miles from London. A ship canal, 17½ miles long, 207 feet wide, and 22 feet deep, connects with St. Petersburg. Exports lumber, hemp, tallow, hides, leather, rope, etc. Imports petroleum, salt, sugar, cotton, dry goods, etc.

CUBA. Area, 45,880 square miles. Population, 1,573,000. Its forests yield mahogany, cedar, dyewoods, and cabinet woods. Has few navigable rivers; Canto, on the east coast, may be ascended for 50 miles by small vessels. Rainy season from May to October; annual rainfall from 40 to 60 inches. Tobacco and sugar are the staples. Sugar crop in 1904 was 1,050,000 tons; rum exported (1903), 1,651,676 gallons; tobacco in leaf, 40,977,946 pounds; cigars, 205,244,298; cigarettes, 14,662,209 packages. Copper, manganese, and iron mines are worked. Ports are Havana, Cienfuegos, and Santiago de Cuba.

CURACAO. A Dutch island off the north coast of Venezuela, 425 miles from Jacmel and 638 from Port au Prince. Population, 30,119. Harbor at Santa Anna Bay on the south coast. Exports orange peel, salt, phosphate of lime, and hides. Imports coal, lumber, petroleum, cotton, woolens, etc.

CUXHAVEN. A port in Germany at the mouth of the Elbe; the starting point of the Hamburg-American line of steamers. It is 71 miles by rail from Hamburg. Population, 6,898.

CYPRUS. The third largest island in the Mediterranean. Area, 3,500 square miles. Population (1901), 237,000. It is 60 miles from the coast of Asia Minor and 41 miles from Syria. By the convention of 1878 it is controlled by England. Chief port is Larnaka. Products are wheat, barley, oats, olives, grapes, cotton, linseed, silk, cheese, wool, hides, gypsum, terra-umbra, marble, copper, and sponges.

DAHOMEY. French possession on the Gulf of Guinea, Africa, between Togoland and Lagos. Area, 65,000 square miles. Population, 1,000,000. The ports are Kotonu, Porto Novo, and Grand Popo, which are ports of call for several lines of French steamers. Products are cocoanuts, vegetable butter, palm oil, cereals, bananas, and potatoes.

DAKAR. A port of French Senegal. Population (1901), 18,447. Has a dry dock 670 feet long and the harbor is accessible to the largest vessels. Exports palm oil, gum, wax, ivory, gold dust, hides, etc.

DALNY or **TA-LIEN.** A port in Manchuria on the eastern side of the peninsula of Liao-tung, 1,263 miles from Hongkong. Population (1901), 50,000. Has two dry docks and good railway facilities. Vessels anchor three miles off in seven fathoms.

DANZIG. A port, naval and coaling station in Germany on the delta of the Vistula, three miles from the Baltic, 285 miles from Berlin, and 767 miles from London *via* the Kiel Canal. Exports beets, sugar, grain, seeds, lumber, spirits, oil, and oil cake.

DAR-ES-SALAAM. A port of German East Africa. Population, 13,000. Has a floating dock 212½ feet long, and the harbor is spacious, land locked, and well sheltered.

DELAWARE. Population (1900), 184,735; area, 2,050 square miles, of which 90 are water; colored population, 30,697; foreign-born, 5,044 Irish, 2,332 German, 1,506 English, 1,122 Italian. Estimated population (1906), 194,479. The largest city is Wilmington. Farm area (1900), 1,066,288 acres, of which 754,010 acres are improved. Chief crops are maize and wheat; fruit and tomato growing are also important. Capital invested in state industries (1905), $50,925,603. Value of output, $41,160,276: leather, $10,250,842; railway, $5,158,063; foundry and machine work, $3,432,118; paper and pulp, $1,904,556; shipbuilding, $1,780,914; iron and steel work, $1,597,309; flour and grist, $1,536,604. Mineral resources not extensive; total output valued (1906) at $14,126. Length of railway, 335 miles besides 146 miles of electric street and elevated railway track

DELI or **BELAWAN.** A port on the north of Sumatra. Exports tobacco.

DEMERARA. See GEORGETOWN.

DENMARK. Area, 15,390 square miles. Population (1901), 2,464,800. Agriculture and dairy farming are the chief industries. In 1904 there were produced 37,002,000 bushels of oats, 22,006,000 of barley, and 23,465,000 of potatoes. The ports are Aarhus, Esbjerg, Frederikshavn, Korsör, Odense, and Thorshavn (in the Faroe Islands).

DIEGO SUAREZ. A port on the north of Madagascar, with steam communication with France. Exports animals and animal products to the value of about $100,000 (1904).

DIEPPE. A port and coaling station in France on the English Channel, 104 miles from Paris, 67 miles from Newhaven, and 113 from Southampton. Population (1901), 22,839. Exports are fish, silks, wines, brandy, fruits, fancy goods, etc.

DOMINICA. A British West Indian island in the Leeward group, 49 miles from St. Pierre, 45 miles from Basse Terre, and 3,798 miles from London. Population (1901), 28,894. Loading and discharging by one-ton canoes at Roseau. Exports cattle, sugar, molasses, rum, lime juice, coffee, and cocoa to the total value of about $300,000 in 1904.

DOVER. A port on the southeast coast of Kent, England, 22 miles from Calais, 42 from Dunkirk, and 63 from Ostend. Population (1901), 41,782. Admiralty pier and harbor is 610 acres in extent. A port of call for American vessels. Exports, about $20,000,000 in 1906.

DRAMMEN. A port in Norway on the river Drammen, 33 miles by rail from Christiania. Population (1900), 23,093. Exports lumber, wood pulp, ice, and pitch.

DRONTHEIM or **TRONDHJEM.** A fortified port and coaling station of Norway, 250 miles north of Christiania, 906 miles from London, and 318 from Bergen. Population, 35,000. Exports lumber, fish, wood pulp, copper ore, tar, and sulphur.

DUBLIN. A port and coaling station on the river Liffey in Ireland, 62 miles from Holyhead, 124½ from Liverpool, and 112 (by water) from Belfast. Has a large coasting trade. Exports porter, whisky, cattle, sheep, and pigs.

DUNDEE. A port and coaling station in Scotland on the Firth of Tay, 10 miles from the North Sea and 59 miles from Edinburgh by rail. Exports jute manufactures, flax, sailcloth, sacking, marmalade, and preserves

DUNEDIN. A port of South Island, New Zealand, on Otago Harbor, 16 miles from the mouth, 12,036 miles from London *via* Cape Horn, 1,239 miles from Sydney, and 1,318 from Melbourne. Exports gold, wool, timber, frozen meat, etc.

DUNKIRK A fortified coaling station and port in Nord Department, France, 189 miles from Paris, 113 from London, 210 from Hull, and 712 from Glasgow. Population (1901), 38,925. Has four dry docks. Exports sugar, phosphates, manures, rails, grain, flour, dried vegetables, potatoes, oil, and machinery.

DURBAN or **PORT NATAL.** A naval coaling station and seaport in Natal, 6,993 miles from London, 812 from Cape Town, and 300 from Delagoa Bay. Exports gold, tea, coffee, ivory, hides, horns, and feathers.

DUTCH GUIANA or **SURINAM.** A Dutch colony on the north coast of South America between British and French Guiana. Area, 49,840 square miles. Population, 91,000. Produces sugar, cocoa, bananas, rice, maize, coffee, rum, molasses, and gold. Has one railway 50 miles long.

ECUADOR. A South American republic on the Pacific coast and traversed by the equator. Area,

115,700 square miles. Population, 1,272,000. Has many volcanoes, Sangay being one of the most active in the world. The dry season lasts from May to October, the wet season from October to May. Ecuador is the chief producer of cocoa; in 1904 it yielded 28,433 tons. Coffee, sugar, rubber, Brazil nuts, cotton, Peruvian bark, and vegetable ivory are important products; also minerals and a large trade in Panama hats. Guayaquil and Esmeraldas are the chief ports.

EGYPT. Area, 400,000 square miles (exclusive of the Sudan). Population, 9,734,405. Anglo-Egyptian Sudan has an area of 950,000 square miles and an estimated population of 2,000,000. There are three seasons of crops in the year: winter produces cereals of all kinds; summer yields cotton, sugar, and rice; and autumn gives rice, maize, millet, and vegetables. There are over 5,000,000 date trees, 1,273,839 acres of wheat, 1,792,314 acres of maize, 1,372,485 acres of cotton, and 74,859 acres of sugar cane. Alexandria, Port Said, and Suez are the chief ports.

EMDEN. A German port and coaling station at the mouth of the Ems River, 48 miles from Oldenburg. Population, 16,453. Important improvements are under way to make this a great port. Exports corn, coal, and coke.

ESBJERG. A Danish port in Jutland, 320 miles from Grimsby and 338 from Harwich. Exports cattle, dairy and animal products.

FALKLAND ISLANDS. British islands south of South America. Area (with South Georgia), 7,500 square miles. Population, 2,100. Sheep farming is the chief industry, and the exports are its products. Nearly 700,000 sheep are raised annually.

FAYAL. An island, port, and coaling station in the Azores belonging to Portugal. Population, 26,264. From Gibraltar the distance is 1,137 miles; from Liverpool, 1,390 miles; and from London, 1,578 miles. Horta Bay affords good anchorage. Exports are maize, dairy products, and hides.

FECAMP. A port and coaling station in the department of Seine-Inférieure, France, on the English Channel, 27 miles by rail from Havre and 97 miles from Southampton. Population, 15,381. Exports are Benedictine liqueur (amounting to over $750,000 worth in 1904), oil cake, salt, flour, etc.

FERNANDO PO. Island, port, and coaling station of Spain, in the gulf of Guinea, West Africa, 4,377 miles from Liverpool. Population, 20,741. Vessels anchor 200 yards from the shore and load and unload by surf boats; 200 docks. Exports coffee, cocoa, palm oil, and yams.

FIJI. Area, 7,435 square miles. Population (1906), 125,086. Exports (1906), $2,936,595; imports, $2,966,213. Chief exports, sugar, copra, green fruits, turtle-shells, pearl shells, and béche-de-mer. Chief imports, hardware, drapery, meats, rice, breadstuffs and biscuits, coal, timber, machinery, oils, live stock, and iron. Chief ports, Suva and Levuka. Vessels entered (1906), 148 of 213,065 tons. Fiji has regular steam communication with New Zealand, Australia, Tonga and Samoa, Hawaii, and Canada. The soil is suited to nearly every kind of vegetable product. The chief crops are bananas, cocoanuts, maize, sugar cane, yams, tobacco, peanuts, tea, rice, and pineapples. Fiji is a colony of Great Britain.

FINLAND. Area, 125,784 square miles; 11.15 per cent. of which is under lakes. Population (1905), 2,892,088. Exports (1906), $56,022,000; imports, $62,779,000. Chief exports, timber, butter, paper, paper mass and cardboard, iron and iron goods, textiles, leather, hides, tar, and pitch. Chief imports, cereals, coffee and chicory, sugar, iron and ironware, cotton, cotton goods, machinery, and chemicals. In 1906, 9,367 vessels of 2,449,220 tons entered, and 8,930 of 2,424,052 tons cleared the ports of Finland. Chief ports, Helsingfors, Abo, Björneborg, and Vasa. In January, 1906, there were 2,062 miles of railway, all but 171 miles being state property. The crown forests cover 57 per cent. of the area of Finland. The land cultivated is divided into small farms. Crops of wheat, rye, barley, oats, flax, hemp, and potatoes are grown. Cattle and dairy products constitute one of the industries. Finland has 9,054 factories employing 107,828 workers.

FIUME. A seaport and coaling station of Hungary, on the Adriatic Sea, at the head of the Gulf of Quarnero, 375 miles from Budapest, 2,965 miles by sea from London, 110 miles from Trieste, and 1,257 miles from Port Said. Exports grain, flour, beans, rice, sugar, tobacco, chemicals, paper, oak staves. Has a petroleum wharf 1,935 feet long for the importation of that product.

FLENSBURG. A port of Schleswig-Holstein, 110 miles from Hamburg. Population, 48,922. Excellent harbor. Exports bricks, tiles, spirits, beer, and oil.

FLORIANOPOLIS or DESTERRO. A port of Brazil and capital of Santa Catharina. Population, 30,000. Exports coffee, sugar, rice, and vegetables.

FLORIDA. Area, 58,666 square miles, of which 3,805 square miles are water. Population (1900), 528,542; of the foreign-born, 4,910 were from the West Indies, 2,231 from England, 1,812 from Germany, 1,707 from Italy, 1,202 from Canada, and 1,084 from Spain. The largest cities are Jacksonville (population, 36,675), Tampa (24,220), Pensacola (22,256), Key West (21,174). About 4,694,400 acres of land are under cultivation, the chief products being oranges and pineapples; of other crops there were (1907) 6,937,000 pounds of tobacco, 69,000 bushels rice, and (1906) 28,567,326 pounds cotton. Total value of the industrial output (1905), $50,298,290, of which the most important are: tobacco $16,764,276; lumber and timber, $12,592,105; turpentine and rosin, $9,901,905; fertilizers $1,590,371; cars, $1,156,441. There were (1905) 3,629 miles of railway operated by steam; 100 miles by electricity.

FLUSHING. A fortified seaport and coaling station of Holland, on Walcheren Island, at the mouth of the West Scheldt River, 109 miles from Queenborough. Population, 18,893. Exports fish, mussels, shrimps, oysters, margarine, dairy and agricultural products.

FOLKESTONE. A port in Kent, England, on the English Channel, 17 miles from Canterbury and 26 from Boulogne. Population, 30,650. Exports skins, furs, and cotton goods. Daily communication with Boulogne.

FRANCE. Area, 207,054 square miles. Population (1906), 39,252,245. Exports (total, 1906), $2,298,031,000; imports, $2,416,344,000; exports (U. S., 1907), $76,380,000; imports, $120,080,000. Chief exports, textiles, raw wool, wine, raw silk, skins and furs, linen and clothes. Chief imports, wool, cereals, raw silk, raw cotton, timber, oil seeds, and coal. Chief ports, Marseilles, Havre, Paris, Dunkirk, and Bordeaux. On December 31, 1906, the French mercantile navy consisted of 15,488 sailing vessels of 677,055 tons; 1,511 steamers of 723,487 tons. Navigation at French ports in 1906 was 109,693 vessels of 32,538,147 tons entered; 109,890 of 32,633,267 tons cleared. Same date, 4,600 miles of tramways. In 1905 there were 24,730 miles of railway in the country. The mineral output for 1906 was valued at $104,166,817. The chief agricultural products are wheat, oats, rye, and grapes for wine. Sixteen per cent. of the total area is forest.

FREDERIKSHALD. A port of Norway, 85 miles from Christiania, 662 miles from London, and 496 from Newcastle. Exports lumber, fish, and granite.

FREDERIKSHAVN. A port of Denmark on the Cattegat, 36 miles from Aalborg, 625 from London, and 456 from Newcastle. Exports grain, cattle, fish, and dairy produce.

FREDERIKSTAD. A port of Norway at the mouth of the Glommen, 58 miles from Christiania, 653 from London, and 493 from Tyne. Population, 14,573. Exports lumber, stone, and brick.

FREMANTLE. Port and coaling station in western Australia at the mouth of the Swan River, 12 miles from Perth, 9,537 from London *via* Suez Canal, 3,120 from Colombo (Ceylon), and 4,708 from Cape Town. Has a dry dock 610 feet long. Exports gold, sandalwood, copper and lead ores, gum, wool, pearl shell, manna, and cattle.

FRENCH CONGO. Area, 680,000 square miles. Population, 8,000,000 to 15,000,000 negroes. Exports (1906), $3,433,223; imports, $2,123,565. Chief exports, rubber, ivory, woods, palm oil and kernels, coffee, and cocoa. Chief ports, Loango and Libreville, the latter inaccessible for large vessels. There are no railways although one is projected to connect Libreville and the Congo. There are telegraph lines in operation to the extent of 870 miles. The soil is very fertile, but the tropical climate is unhealthful for Europeans. The country is to a great extent unexploited but promises to be rich in forest products, gold, copper, and iron. Coffee, vanilla, and cocoa are grown by Europeans.

FRENCH ESTABLISHMENTS IN OCEANIA. Area, 1,520 square miles. Population, 29,000 (estimated).

In 1908 it was decreed that the following islands and groups should be regarded as one colony: The Society, Marquesas, Tuamotu, Leeward, Gambier, Tubuai, and Rapa islands. Imports (1906), $550,513; exports, $760,068; imports (U. S., 1906), $131,528. (The figures given of the imports and exports are for the island of Tahiti.) Chief imports, tissues, wheat flour, and metal works. Chief exports, copra, mother-of-pearl, and vanilla. Chief port, Papeete. Tahiti is the most important island. The chief products are pearls, mother-of-pearl, cocoanuts, bananas, oranges, sugar cane, and vanilla.

FRENCH GUIANA. Area, 30,500 square miles. Population (1901), 32,908. Imports (1906), $2,764,263; exports, $1,994,771. Chief exports, cocoa, phosphates, wood, hides, and gold. Chief port, Cheyenne. About 8,800 acres are under cultivation. The crops are rice, maize, manioc, cocoa, coffee, sugar cane, indigo, and tobacco. Gold (1903, 136,170 oz.), silver, phosphates, and iron are mined.

FRENCH GUINEA. Area, 95,000 square miles. Population (estimated), 2,200,000. Exports (1905), $3,110,995; imports, $3,595,714. Chief exports, rubber, cattle, and palm kernels. Chief port, Konakry. In 1905, 559 vessels of 445,105 tons entered, and 566 of 448,413 tons cleared the ports. A railway is in projection from Konakry to the Niger, 83 miles of which is open. There are 1,060 miles of telegraph lines. Konakry is regularly visited by French, English, and German lines of steamers. The chief products are india rubber, palm oil and nuts, millet, earthnuts, gum, and coffee. Cattle, sheep, and goats are raised. The minerals are but little exploited.

FRENCH INDIA. The towns of Pondichéry, Karikal, Chandernagar, Mahi, and Yanaon. Area, 196 square miles. Population, 273,748. Manufactures cotton and jute.

FRENCH SOMALILAND. Area, 12,000 square miles. Population, 50,000. Exports ivory, wax, coffee, animal and fish products. The chief port is Jibutil.

FUNCHAL. See MADEIRA.

GABUN. A port in the French Congo, West Africa. Exports ivory, ebony, wax, rubber, and copal.

GALATZ. Port and coaling station in Roumania, near the junction of the Pruth with the Danube. Population, 62,678. Exports grain, meal, tallow, lard, hides and wool.

GALLE or **POINT DE GALLE.** A port and coaling station on the southwest coast of Ceylon, 66 miles from Colombo and 6,759 miles from London. Population, 37,248. Exports tea, coffee, cocoanuts, plumbago, and grass oils.

GALLIPOLI. A port in Turkey at the eastern end of the Dardanelles, 90 miles from Adrianople. Population, about 30,000. Exports cereals, aniseed, linseed, onions, sponges, goat's hair, skins, and oils.

GALVESTON. A port and coaling station of Texas on an island at the mouth of Galveston Bay, 1,893 miles from New York, 765 miles from Havana, and 4,882 miles from Liverpool. Population (estimated, 1905), 33,484. Exports cotton, hides, wool, tallow, and oil.

GEELONG. A port of Victoria, Australia, on Corio Bay, an arm of Port Philip Bay, 45 miles from Melbourne. Population, 12,399. Exports wool, hides, meats, and potatoes.

GEFLE. A port of Sweden on the Gulf of Bothnia, 71 miles by rail from Upsala, 146 from Stockholm, and 332 from Riga. Exports lumber, wood pulp, bar iron, cellulose, and grain.

GENOA. A fortified port and coaling station on the Gulf of Genoa, Italy, 94 miles from Milan, 355 from Naples, 853 from Gibraltar, and 2,161 from London. Has three dry docks and a floating steel dock. Exports silks, cottons, wine, olive oil, paper, hats, flax, jute, hemp, rice, vermicelli, cheese, furniture, marble, fruits, and vegetables. The most important Italian port.

GEORGETOWN or **DEMERARA.** A port in British Guiana at the mouth of the Demerara River, 385 miles from Barbados. Population, about 55,000. Has a dry dock 212 feet long and a patent slipway 295 feet long. Exports sugar, molasses, rum, coffee, cocoa, hardwood, and old iron and copper junk.

GEORGIA. Population (1900), 2,216,331. Of this number 1,181,294 are white, 1,034,813 negroes, 205 Asiatics, and 19 Indians. Foreign-born population (1900) included 4,910 West Indians, 3,407 Germans, 1,234 Russians, and 3,807 from Great Britain. The largest cities are Atlanta (population, 104,984), Savannah (68,596), Augusta (43,125). Area, 59,265 square miles, 540 of which are water. Farm area about 26,644,800 acres. Georgia ranks second among the states in the production of cotton, the crop amounting (1906-1907) to 813,164,837 pounds. Other crops were (1907) maize, 57,538,000 bushels; tobacco, 3,182,000 pounds; rice, 81,000 bushels. Value coal product (1906), $424,004; of the iron ore, $734,780. Total capital of manufacturing establishments (1905), $135,211,551. Value of output of chief industries, $151,040,455, including: cotton manufactures, $35,174,248; lumber and timber, $21,054,107; fertilizers, $9,461,415; flour and grist, $8,178,926; turpentine and rosin, $7,705,643. Length of railways in the state, 6,877 miles, of which 364 miles are electric. Savannah is the principal port, and large shipments are made principally to England and Germany. Exports from this port (1906-1907) valued at $63,039,824; from Brunswick, $11,225,477.

GERMAN EAST AFRICA. Area, 384,180 square miles. Population (estimated), 7,000,000; Europeans (January, 1907), 2,629. Imports (1906), $5,986,378; exports, $2,604,841. Chief exports, rubber, copra, ivory, coffee, and vegetable fiber. Chief imports, cotton, rice, articles for consumption, hardware, and iron. In 1906, 1,100 vessels of 1,405,322 tons (German East Africa Line), entered the ports. Chief seaports, Dar-es-Salaam, Bagamoyo, Saadani, Pangani, Kilwa, Lindi, Mikindani, and Tanga. There are 132 miles of railway and more in projection. There are well-kept roads throughout the colony. Most of the surface is covered with forests, but some agriculture is carried on, the products being pulse, maize, cocoa palms, mangroves, tea, coffee, tobacco, sugar, cardamoms, and vanilla.

GERMAN EMPIRE. Area, 208,780 square miles. Population (Dec. 1, 1905), 60,641,278; subjects of foreign powers, 1,025,560. Imports (1906), $2,008,375,852; exports, $1,541,908,704. Imports (U. S., 1907), $161,544,552; exports, $256,653,060. Chief imports, raw cotton, wool, raw silk, wheat, eggs, woolen yarn, maize, and horses. Chief exports, textiles, iron goods, coal, sugar, machinery, iron, hides, and leather. Germany exports to the United States aniline dyes, muriate of potash, cotton hosiery, cotton lace, furs, leather, toys, woolen cloth and dress goods, and rubber. Germany imports from the United States cotton, maize, phosphates, cotton seed products, lard, mineral oil, and leaf tobacco. Mercantile navy, January 1, 1907, numbered: sailing vessels, 2,597 of 532,146 tons; steamers, 1,833 of 2,096,947 tons; total, 4,430 vessels of 2,629,093 tons. In the year 1905, 98,939 vessels of 24,135,754 tons entered German ports and 99,948 of 24,269,989 cleared her ports. Principal ports, Hamburg, Stettin, Kiel, Bremen, Lübeck, Danzig, and Rostock. Hamburg and Bremen are the chief ports for commerce between Germany and the United States. There were in 1905, 35,235 miles of railway and 2,111 miles of street tramway lines; in 1907 the total length of railway was 35,977 miles. The navigable waterways were 8,463½ miles in length in 1906. The industries of Germany are highly organized and include iron manufactures, machinery, textiles, paper, glassware, leather and india rubber goods, chemicals, toys, brewing, etc. Ninety-one per cent. of the soil is productive. The principal crops are wheat, rye, barley, oats, potatoes, grapes for wine, and sugar beets. A great deal of fruit is grown, such as apples, pears, plums, and cherries. The mineral production for 1906 was $384,370,000. Coal, lignite, iron ore, potassic salts, lead, rock salt, zinc, and copper are mined.

GERMAN SOUTHWEST AFRICA. Area, 322,450 square miles. Population (estimated), 200,000; Europeans (1907), 7,110. Imports (1906), $8,793,855 (private commerce); exports, $90,338. Chief imports, cereals, vegetables and fruit, tobacco, beer, timber, preserved meats, textiles, and iron. Chief exports, animal products, guano, and copper ore. Chief port, Swakopmund. In 1908 there were 596 miles of railway. The southern part is desert land. The industry is mostly pastoral. Sheep, angora and other goats, horses, mules, asses, swine, and camels are bred. The natives have large herds of cattle. Copper is mined. Other minerals found are gold, asbestos, graphite, diamonds, etc.

GHENT. A river port of Belgium at the junction of the Lys and Scheldt, 34 miles from Brussels and 163 miles from London. Exports sugar, chicory, flax, fruit, hops, marble, white lead, rags, shoddy, linen, butter, oil,

and linseed cake. Does a large transport trade and has excellent docks.

GIBRALTAR. British fortress, port, naval base, and coaling station south of Spain at the entrance to the Mediterranean, 1,313 miles from London, 302 from Lisbon, 991 from Malta, and 696 from Marseilles. Good harbor accommodation and several large docks. Exports wine, fruit, and cork.

GIJON. A port of Spain on the Bay of Biscay, 20 miles from Oviedo, 286 from Bordeaux. Population, 47,544. Exports zinc, copper, manganese, blende, quicksilver, nuts, apples, and cider.

GLASGOW. A port and coaling station in the west of Scotland on the river Clyde, 42½ miles from Edinburgh. Population, 761,709. Excellent accommodation for vessels. Export trade over $100,000,000 annually.

GLOUCESTER. A port on the river Severn, England, connected with the Bristol Channel by the Gloucester and Berkeley Canal. Exports salt, oil seed, and metal ware. Sharpness is located at the other end of the canal.

GOA. A Portuguese port in the west of India. Exports cocoanuts, grain, seeds, and teak.

GOLD COAST. Area, 82,000 square miles. Population (1901), 1,486,433; with European population, 646. Imports (1905), $6,710,007; exports, $7,073,730. Chief ports, Accra, Sikondi, and Cape Coast Castle. There are 168 miles of railway. The climate is hot and damp, very unhealthful for Europeans. The staple products are gold (1906, 217,288 oz.), palm oil and kernels, rubber, kola nuts, and timber. Gold Coast is a colony of Great Britain.

GONAIVES. A port on the west coast of Haiti. Population, 18,000. Connected with New York by the Atlas line. Exports cotton, coffee, mahogany, and lignum-vitae.

GOOLE. A port of Yorkshire, England, at the junction of the Don with the Ouse, 23 miles above Hull. Population, 16,576. Exports coal, chemicals, textiles, cutlery, hardware, leather goods, and machinery.

GOTHENBURG. A port of Sweden on the Göta River, at its mouth on the Cattegat, 285 miles from Stockholm. Exports iron, steel, wood, wood pulp, paper, matches, cattle, and dairy produce.

GRAND BASSAM. A port on the Ivory Coast, French West Africa, at the mouth of the Como. Exports gold dust, ivory, and palm oil.

GRAND POPO. A port of Dahomey, French Guinea, 15 miles west of Whydah.

GREAT BRITAIN (The United Kingdom). Area, 121,391 square miles. Population (1907), 44,100,231. Imports (1907), $3,139,094,295; exports, $2,518,338,941. Chief imports, grain and flour, raw cotton, meat, wool, sheep and lambs, wood and timber, butter, flax, hemp, jute, oils, fruits, copper, iron, and machinery. Chief exports, cotton, woolens, linen, and jute manufactures; yarns, apparel, iron and steel, hardware, copper, machinery, coal, and chemicals. Chief ports, London, Liverpool, Cardiff, the Tyne ports, Hull, Dover, Glasgow, and Southampton. The number of vessels belonging to the British Empire in 1906 was 37,872 of 12,791,381 tons. In 1906, 1,153 vessels were built for home ownership and 361 for foreigners. The total number of vessels that entered coastwise in 1906 was 308,313, of 61,714,108 tons; and cleared, 304,817 vessels of 60,209,672 tons. There were (1906) 23,063 miles of railroad. About 60 per cent. of the area of the United Kingdom is cultivated. The chief crops are wheat, barley, oats, potatoes, and turnips. The live stock includes horses, cattle, sheep, and pigs. The chief products of mines and quarries are coal, ores of iron, zinc, tin, copper, and lead; oil shale, clay and shale, sandstone, limestone, and salt. The total value of metals from British ores, in 1906, was $93,149,889. The fish caught off the shores of the United Kingdom in 1907 were 1,182,260 tons in weight, valued at $54,628,810. The value of the textile manufactures is about $826,200,000 yearly.

GREECE. Area, 25,014 square miles. Population (1896), 2,433,806; preliminary report (1907), 2,631,952. Imports (1906), $28,690,281; exports, $23,611,432. Chief imports, agricultural products, yarn and tissues, raw minerals, forest products, wrought metals, etc. Chief exports, agricultural products, raw minerals, wines, oils (olive, etc.), animal products, forest products, etc. Chief ports, Piraeus, Corfu, Kalamata, and Volo. The Greek merchant navy in 1906 had 1,374 vessels of 431,059 tons. The same year, 6,693 vessels of 4,848,342 tons entered and cleared the ports. There were, in 1906, 845 miles of railway in Greece. The soil is unusually fertile, but agriculture is in a backward state. Crops are raised of wheat, barley, rye, maize, maslin, and currants (of which the annual export averages 120,000 to 125,000 tons). Silk culture, wine, olive, orange, lemon, and fig industries are important. Some rather light colored tobacco is raised. The ores mined include iron, copper, zinc, lead, silver, and manganese. For 1906 the mineral output was valued at $4,100,129.

GREENOCK. A port of Scotland on the Firth of Clyde, 22 miles west of Glasgow. Exports refined sugar, coal, iron, linen, and jute goods.

GRENADA. A British West Indian island in the Windward group, 101 miles from Port of Spain. Loading and discharging by lighters. Exports rum, molasses, sugar, cocoa, coffee, cotton, and fruit.

GREYTOWN or **SAN JUAN DEL NORTE.** A port of Nicaragua on the Caribbean Sea, 2,033 miles from New York and 481 from Cartagena. Loading and discharging by lighters. Exports mahogany, rubber, bananas, hides, indigo, and gold. Population, 2,000.

GRIMSBY. A port and coaling station of Lincolnshire, England, on the Humber, 14 miles from Hull. Population, 63,138. Exports cottons, woolens, yarns, worsteds, coal, machinery, leather, and fish.

GUADELOUPE. A French possession in the Lesser Antilles, West Indies. Area, 688 square miles. Population, 182,112. Capital is Basse Terre (population, 9,500). The commercial center is Pointe-à-Pitre (20,000), accessible to the largest vessels. Exports sugar cane, coffee, cocoa, bananas, manioc, sweet potatoes, tobacco, corn, and vegetables. The mountain forests cover 175,574 acres and yield rich timber.

GUATEMALA. Area, 48,290 square miles. Population (1903), 1,842,134. Imports (1906), $7,220,760; exports, $7,136,280. Imports (U. S., 1906), $3,037,795; exports, $2,159,880. Chief imports, cotton, provisions, ironware, wines, chemicals, machinery, woolens, and linens. Chief exports, coffee, rubber, timber, hides, bananas, chicle, sugar, and skins. Chief port, Puerto Barrios. In 1906, 556 vessels of 948,657 tons entered the ports of Guatemala, and 558 of 924,887 tons cleared. There are 125 miles of railway open and 177 more almost completed. The chief crop is coffee, largely in the hands of the Germans. Other agricultural crops are tobacco, sugar, cocoa, and bananas. The minerals are little mined.

GUAYAQUIL. A port and coaling station of Ecuador on the Gulf of Guayaquil, 835 miles from Panama. Exports cocoa, coffee, cinchona, rice, hides, straw hats, cotton, tobacco, rubber, and lumber.

GUERNSEY. One of the Channel Islands. The chief harbor is St. Peter Port. Exports vegetables, cattle, and fruit.

HAIFA. A port of Syria at the foot of Mount Carmel, 172 miles from Port Said. Population, 12,000. Exports wheat and sesame.

HAIPHONG. A port of Tongking, Indo-China, on the delta of the Red River, 307 miles from Turan. Population, 17,000. Chief export is rice.

HAITI. Area, 10,204 square miles. Population (ecclesiastical report in 1906), 1,500,000; about 200 Europeans. (For imports and exports, see SANTO DOMINGO.) Imports (U. S., 1907), $1,274,678; exports, $2,916,104. Chief exports, coffee, cocoa, logwood, cotton, hides and skins, and guaiac wood. Export duties are very heavy. Chief imports are cottons, sacks, machinery and ironwork. Chief ports, Aux Cayes, Port au Prince, and Jecmel.

HAKODATE. A port and coaling station south of Yezo, Japan, 802 miles from Nagasaki, 424 from Vladivostok, 1,176 from Shanghai, and 11,516 from London. Exports seaweed, rice, dried fish, salt, straw ropes, bags, and sulphur.

HALIFAX. A fortified port, naval and coaling station of Nova Scotia, Canada, 2,485 miles from Liverpool, 599 from New York, and 737 from Quebec. Has a graving dock 600 feet long. Exports coal, lumber, fish, cattle, flour, potatoes, apples, butter, furs, and oils.

HAMBURG. A port and coaling station of Germany on the river Elbe, 75 miles from its mouth, in the North Sea, 178 miles by rail from Berlin. Population

(1905), 803,090. Terminus of the Hamburg-American line. Excellent accommodation and a large trade—over $700,000,000 in 1905.

HANKOW. A treaty port of China at the junction of the Hankiang and the Yang-tse-kiang, 700 miles from the sea. Exports tea, oil, cotton, tallow, hides, rhea fiber, hemp, bristles, and drugs.

HARBURG. A port of Germany on the Elbe, 7 miles from Hamburg. Excellent accommodation. Trade largely distributive.

HARTLEPOOL. A port and coaling station of Durham, England, north of the mouth of the Tees, 31 miles from Newcastle. Population, 86,310. Exports coal, iron, machinery, steel, and textiles.

HARWICH. A port and naval station in Essex, England, at the mouth of the Stour, 71 miles from London. Population, 10,019. Steamers run to Hook of Holland, Rotterdam, Antwerp, Hamburg, and Esbjerg. Trade is principally confined to goods in transit.

HAVANA. A port and coaling station in the north of Cuba, 585 miles from New Orleans, 93 from Key West, and 809 from Vera Cruz. Population, 242,055. Ward line communicates with New York. Exports tobacco, cigars, sugar, molasses, beeswax, and honey.

HAVRE. A fortified port and coaling station of France, on the north side of the mouth of the Seine, 142 miles from Paris and 71 from Cherbourg. Tancarville Canal connects with Harfleur. Exports wines, millinery, textiles, furniture, oils, dyes, drugs, potatoes, and sardines. Population, 130,196.

HAWAII. Total area of islands, 6,449 square miles. Population (1900), 154,001; population (estimated, 1906), 192,407. Imports (year ending June 30, 1906), $15,046,397. Exports, $26,906,776. Imports (U. S., year ending January 30, 1906), $11,771,155; exports, $26,850,463. Chief imports, domestic merchandise. Chief exports, sugar, coffee, rice, hides, and bananas. Chief port, Honolulu. Seven lines of steamers connect with the United States. There are about 150 miles of railway on the islands.

HELSINGBORG. A port and coaling station in the south of Sweden on the sound. Population, 24,670. Exports cattle and dairy produce.

HELSINGFORS. A port of Finland on the Gulf of Finland, 168 miles from St. Petersburg. Exports lumber, butter, wood pulp, and paper. Population, 106,217.

HERNOSAND. A port of Sweden on the Gulf of Bothnia, 225 miles from Stockholm. Exports lumber, wood pulp, and cellulose.

HIOGO or **KOBE.** A port and coaling station on the south coast of Hondo Island, Japan, 350 miles from Yokohama. Population, 285,002. Exports cotton yarn, textiles, tea, copper, antimony, flax, hemp, straw plait, rice, jute, and carpets.

HOBART. A port and coaling station of Tasmania, on the Derwent River, 12 miles from its mouth. Population, 34,182. Exports wool, grain, lumber, hops, vegetables, fruits, oil, and tin.

HODEIDA. A port of El Yemen, Arabia, on the Red Sea, 232 miles from Aden and 426 from Suakin. Anchorage between five and six miles off shore. Exports coffee, jowari, sesame, senna, and skins.

HOLTENAU. A port of Germany on Kiel Bay at the Baltic end of the Kaiser Wilhelm Canal.

HONDURAS. Area, 46,250 square miles. Population (1905), 500,136. Imports (1905-1906), $2,441,284; exports, $2,799,311. Imports (U. S., 1906-1907), $2,296,556; exports, $1,833,056. Chief imports, cotton, breadstuffs, and provisions. Chief exports, ores, bananas, bar silver, hides, cattle, and cocoanuts. Sixty-three per cent. of the imports are from the United States, and 87 per cent. of the exports to the same country. Chief ports, Amapala, Puerto Cortes, and Trujillo. There are 69 miles of railway. The agricultural products are bananas, tobacco, sugar, maize, cocoanuts, oranges, lemons, sarsaparilla, beans, indigo, rice, and wheat. Gold, silver, platinum, copper, lead, zinc, iron, antimony, nickel, and coal are found. Poor facilities in transport and lack of capital restrict the working of the mines.

HONGKONG. A British island, port, naval and coaling station in China, 853 miles from Shanghai, 1,580 from Yokohama, and 9,900 from London. Population, 319,803. Excellent accommodation and seven dry docks, the largest 700 feet long. Trade is largely in goods in transit.

HONOLULU. A port and coaling station on the south coast of Oahu, Hawaii, 2,098 miles from San Francisco, 2,339 from Victoria, B. C., 13,801 miles from London *via* Magellan, and 4,417 from Sydney. Chief trade is through the Pacific Mail line from San Francisco. Exports sugar, rice, hides, tallow, wool, coffee, bananas, oranges, and molasses.

HUELVA. A port and coaling station in the south of Spain, near the junction of the Odiel and the Rio Tinto. Exports copper, pyrites, wine, and cork. Population, 21,359.

HULL. A port and coaling station in Yorkshire, England, on the Humber, 20 miles from the sea. Has eight dry docks and a graving dock. Has large trade with the continent. Exports coal, coke, textiles, chemicals, machinery, oil, and seed. Population, 240,618.

ICELAND. Area, 39,756 square miles. Population (1901), 78,470. Imports (1906), $1,426,296; exports, $1,276,216. Chief exports, fish, fish products, and ponies. Chief port, Reykjavik. The only habitable land is along the coasts and in the river valleys; hay the only crop. Forty per cent. of the shipping is with Great Britain. Iceland is a colony of Denmark.

IDAHO. Area, 84,313 square miles, 534 of which are water. Population (1900), 161,772. There were 1,467 Chinese, 1,291 Japanese, 4,226 Indians, 2,974 Germans, 2,923 Canadians, and 4,607 from Great Britain. Estimated population (1906), 205,704. The most important crop is wheat, the 342,000 acres devoted to it (1907) yielding 8,639,000 bushels, worth $5,788,800. Other crops (1907) were oats, 5,706,000 bushels; barley, 2,181,000 bushels; flaxseed, 177,000 bushels. The gold output (1906) was valued at $1,149,100; silver, $6,042,606; copper, $1,655,563; lead, $117,117. Coal is not extensively mined. The total output of manufactures in 1905 was valued at $8,768,743. The principal industry is lumbering, there being 260 lumber mills in the state, the annual product of which was valued (1905) at $2,834,506. The flour and grist products are also considerable, being valued (1905) at $1,584,473. Number miles railway, 1,658, of which 115 miles are elevated and street railway.

ILLINOIS. Area, 56,665 square miles, 663 of which are water. Population (1900), 4,821,550; 85,078 of this number were colored. The foreign-born included Germans (332,169), Polish (67,949), Swedish (99,147), Canadians (50,595), and 198,974 from the British Isles. The estimated population (1906) was 5,418,670. Chicago is the largest city in the state and, next to New York, is the largest in the United States; population estimated (1907), 2,367,000. Other important cities are Peoria (1906), 66,365; East St. Louis, 40,958; Quincy, 39,108; Springfield, 38,933. The farm area (1900) amounted to 32,794,726 acres, 27,699,219 are improved. The chief crops are maize (1907) 342,756,000 bushels; wheat, 40,104,000 bushels; oats, 101,675,000 bushels; potatoes, 13,398,000 bushels; hay, 3,730,000 tons; tobacco, 880,000 pounds (value, $61,705). The wool clip (1906) was valued at $1,022,450. Aggregate capital of manufacturing establishments (1905), $975,844,799; value of total output, $1,410,342,129, including: slaughtering and meat packing, $317,286,082; iron and steel, $87,352,761; foundry and machine shop, $79,961,482; clothing, $67,439,617; liquors, $77,888,841; flour and grist, $39,829,127. The chief mineral product is coal, the output in short tons (1906) being 41,480,104, valued at $44,763,062. Value of petroleum product (1906), $3,274,818; of the sandstone and limestone output, $2,961,456; of the total mineral output, $121,188,306. The state has 14,123 miles of railway, 2,293 of which are electric, and 106 miles of canal.

INDEPENDENCIA or **FRAY BENTOS.** A port of Uruguay on the Uruguay River, 170 miles from Montevideo. Population, 6,000. Exports meat extracts.

INDIA. Area, 1,097,901 square miles. Population (1901), 232,072,832. Imports (year ending March 31, 1906), $524,303,301; exports, $590,951,945. (The figures given include merchandise, treasure, and government stores.) Chief imports, cotton manufactures, metals, silk, sugar, woolen goods, liquors, railway plant and rolling stock, apparel, and chemicals. Chief exports, cotton, rice, seeds, opium, hides, jute, tea, wool, lac, and indigo. Chief ports, Calcutta, Bombay, Rangoon, Madras, Karáchi, and Tuticorin. In the year

1906-1907, 9,329 vessels of 13,775,436 tons entered and cleared the ports of British India. There were (December 31, 1906) 29,097 miles of railway in India. Agriculture is the staple industry. Wheat, rice, millet, maize, barley, sugar, coffee, jute, and cotton are raised. Forests cover 104,900 square miles. The minerals worked are coal, iron, gold, rubies, and petroleum. The coal output in the year 1904-1905 was 8,425,431 tons.

INDIANA. Area, 35,885 square miles, 469 of which are water. Population (1900), 2,516,462, 57,505 of this number being colored. Total foreign-born, 142,-121. Estimated population (1906), 2,710,898. Some of the larger cities are Indianapolis (population, 233,-217), Evansville (63,957), and Fort Wayne (50,947). Area of farm land (1900), 21,619,622 acres, of which 16,680,358 are improved. The chief crops (1907) were maize, 108,840,000 bushels; wheat, 34,013,000 bushels; tobacco, 14,100,000 pounds, valued at $1,199,000. The wool clip (1906) amounted to 2,750,000 pounds of scoured wool. The coal output (1906) in short tons was 12,092,560, worth $13,116,-261; the crude petroleum output 7,673,477 barrels, valued at $6,770,066; the limestone and sandstone product was valued at $3,756,305. Value of the materials used in the industries, $220,507,007; value of the resulting products, $393,954,405, including: flour and grist milling, $36,473,543; slaughtering and packing, $29,352,593; distilling and brewing, $26,716,656; foundry and machine work, $23,108,516; glass works, $14,706,929. Added to the natural facilities for transportation, which are provided by the Ohio and Wabash rivers and Lake Michigan, there are in all 8,672 miles of railway. Indianapolis is an important commercial center.

INHAMBANE. A port of Portuguese East Africa. Exports rubber, wax, ivory, copal, and oil nuts.

IOWA. Area, 55,586 square miles, 561 of which are water. Population (1900), 2,231,853; 12,693 of this number were negroes. Of the foreign-born population (305,920), 123,162 were German, 29,875 Swedish, 25,634 Norwegian, 17,102 Danish, 15,687 Canadians, and 49,948 from the British Isles. Estimated population (1906), 2,205,690. Among the largest cities are Des Moines, Dubuque, Sioux City, and Davenport. Area farm land (1900), 34,574,337 acres, 29,897,552 of which are improved. Some of the crops (1907) were: maize, 270,220,000 bushels; wheat, 7,653,000 bushels; potatoes, 11,985,000; hay, 4,900,-000 tons. The live stock industries, dairy farming, and poultry keeping are important. In 1906 the coal output was 7,226,224 short tons, valued at $11,619,455. The value of manufactured goods (1905) was $160,-572,313, against $132,870,865 in 1900. The value of the output of the most important industries (1905) was as follows: slaughtering and meat packing, $30,-074,070; butter, $14,737,127; flour and grist products, $12,099,493; lumber and planing mill products, $11,-310,981. Besides the means of transportation furnished by the rivers, there are 9,828 miles of railway, exclusive of 578 miles of electric, and 216 miles of inter-urban railway.

IQUIQUE. A port of Chile, 793 miles from Valparaiso. Anchorage two miles off shore; loading and discharging by lighters. Exports nitrate of soda, borax, copper, and silver ores. Population, 42,498.

IQUITOS. A river port of Peru, on the Mayali. Exports rubber.

ITALY. Area (United Italy), 110,646 square miles. Population (1901), 32,475,253; estimated (1907), 33,640,000. Imports (1905), $446,828,760; exports, $347,833,137. (These figures do not include uncoined silver.) Imports (U. S., 1905), $47,623; exports, $45,225. Chief imports, wheat, raw cotton, coal and coke, boilers and machinery, raw silk, timber, wrought iron and steel, wool, silk cocoons, hides, and cured fish. Chief exports, raw silk, cotton tissues, silk tissues; olive oil, eggs, hemp, silk waste, dried fruit, sulphur, wines, and cheese. Chief ports, Ancona, Genoa, Leghorn, Naples, and Venice. January 1, 1906, the vessels registered in the mercantile marine were 5,534 of 1,025,603 tons. There were in Italy (1906-1907), 10,333 miles of railway. Seventy per cent. of the soil is productive. Wheat, maize, olives, and grapes are raised. Exclusive of chestnut trees, 10,110,000 acres are under forest. Italy is rich in minerals. Some of those mined are sulphur, zinc, iron, copper, and mineral fuel. The quarries are very valuable. The value of the fisheries in 1905 was $3,108,858.

JACMEL. A port on the south coast of Haiti, 30 miles from Port au Prince, 285 from Kingston (Jamaica), and 812 from Barbados. Anchorage half a mile from shore. Exports coffee, logwood, orange peel, mahogany, cotton seed, and hides.

JAFFA. A port of Syria, 57 miles from Jerusalem by rail, 266 from Alexandria, and 138 from Port Said. Population, 30,000. Exports oranges, olive oil, wheat, sesame, barley, cotton, fruit, and soap.

JAMAICA. Area, with other smaller islands, 4,424 square miles. Population (March 31, 1907, estimated), 830,261. Imports (March 31, 1906-1907), $10,990,-739; exports, $9,681,154. Chief imports, cottons, fish, flour, and rice. Chief exports, sugar, rum, coffee, bananas, oranges, spices, and wood. Chief port, Kingston. March 31, 1907, Jamaica had 184½ miles of railway. The chief agricultural products are sugar cane, coffee, bananas, tobacco, cocoanuts, corn, and cocoa. Jamaica is one of the possessions of Great Britain.

JAPAN. Area (without Formosa, which is 13,458 square miles, and the Pescadores, 85 square miles), 147,655 square miles. Population (December 31, 1903), 46,732,138. Population of Formosa and Pescadores (December 31, 1903), 2,915,784. Imports (1906), $209,401,414; exports, $211,834,464. Imports (U. S., 1907), $68,910,594; exports, $38,770,-060. Chief imports, rice, raw cotton, woolen manufactures, ironwork, machinery, beans, sugar, oil cake and petroleum. Chief exports, cotton yarn, raw silk, silk manufactures, matches, camphor, silk waste, rice, and matting. Chief ports, Hiogo, Nagasaki, Tokyo, Yokohama. In 1906 the merchant navy of Japan consisted of 5,536 vessels of 1,378,141 tons of a European type, and 20,848 native craft. In the same year 13,058 vessels of 19,083,454 tons entered and 13,092 vessels of 19,050,922 tons cleared Japanese ports. The railroads in Japan in the year 1906-1907 were 4,808 miles in length. The chief crops are rice, barley, rye, wheat. Tea, sugar, and silk are produced. The most valuable trees are the camphor, mulberry, and vegetable-wax tree. The following minerals are mined, gold, silver, copper, lead, iron, pyrites, antimony, manganese, coal, sulphur, and petroleum.

JAVA. Area, 50,554 square miles. Population, 28,746,688. Imports (1904), $44,006,328; exports, $63,965,376. Chief ports, Batavia and Surabaya. In 1904, 1,775 vessels of 3,937,211 tons entered Java's ports. Agriculture is the main industry. Rice, maize, cotton, tobacco, indigo, sugar cane, coffee, cinchona, tea, spices, and cocoa are raised. Quinine is exported. Coal, tin, and petroleum are found. Java is under the sovereignty of the Netherlands.

JEDDAH or **JIDDA.** A port of Arabia on the Red Sea, 632 miles from Suez and 185 from Suakin. Exports mother-of-pearl, coffee, gum arabic, balsam, carpets, hides, and skins.

JERSEY. See ST. HELIER.

JIBUTI. A port of French Somaliland on Tajura Bay in Northeast Africa. Population, 15,000. Excellent harbor. Trade chiefly with Marseilles. Exports ivory, gold, coffee, skins, and gum.

JUNIN. A port in the north of Chile, 6 miles from Pisagua. Exports nitrate of soda.

KABINDA. A port of Angola, Portuguese West Africa, 40 miles north of the mouth of the Congo. Exports ivory, honey, and wax.

KAISER WILHELM CANAL. Runs through Holstein from Brunsbüttel to Holtenau (61 miles) and connects the North Sea with the Baltic. During the year ending March 6, 1906, 33,147 vessels passed through it, of which 58 per cent. were German.

KALAMATA. A port in the south of Greece on Kalamata Bay, 17 miles from Sparta and 388 from Malta. Exports oil, figs, and silk cocoons.

KALMAR. A fortified port in the southeast of Sweden, 47 miles from Karlskrona. Exports lumber, paper, limestone, flour, and cattle.

KAMERUN. Area, 191,130 square miles. Population (estimated), 3,500,000; January 1, 1907, there were 1,010 whites. Imports (1906), $3,166,712; exports, $2,367,148. Chief imports, textiles, spirits, timber, salt, and ironware. Chief exports, palm kernels, rubber, palm oil, ivory, and cocoa. Chief port, Duala (Kamerun). In 1906, 363 vessels of 981,810 tons entered the five ports. There are 22 miles of railway. The soil is fertile. Cattle raising is carried on quite extensively. Iron and gold are found. Kamerun is a German protectorate.

KANSAS. Area, 82,158 square miles, 384 of which are water. Population (1900), 1,470,495, of whom 52,003 were negroes, 2,130 Indians, and 43 Asiatics. Of the foreign-born 39,501 were German, 15,144 Swedish, 11,019 Russian, 8,538 Canadians, and 24,793 from the British Isles. Population (1906), 1,612,471. Some of the larger cities are Kansas City, Topeka, Wichita, and Leavenworth. The area of farm land in 1900 was 41,662,970 acres, 25,040,550 of which were improved. There were (1907) 155,142,000 bushels maize, 65,609,000 bushels wheat, and (1906) 10,350 pounds of cotton. Amount of coal (1906), 6,024,775 short tons, valued at $8,979,553; in the same year there were 1,019 productive oil wells in the state; the output of zinc was valued at $475,044; the output of Portland cement at $3,908,708. The value of the output (1905) of the most important industries was as follows: slaughtering, $96,375,679; flour and grist, $42,034,019; railway cars, $11,521,144; zinc smelting, $10,149,468; butter, $3,841,301; foundry and machines, $3,385,720. The printing and publishing industries are also important. The state has in all 9,057 miles of railway, 182 of which are electric.

KARACHI. A port and coaling station of Bombay, India, 483 miles from Bombay, 1,464 from Aden, and 6,158 from London. Population, 116,663. Exports grain, oil seeds, cotton, wool, raw silk, and dyes.

KELUNG. A port and coaling statior on the north coast of Formosa, 30 miles from Tamsui, 150 from Fu-chau, 452 from Shanghai, and 990 from Hiogo. Exports coal, rice, camphor, and sugar.

KENTUCKY. Area, 40,598 square miles, 417 of which are water. Population (1900), 2,147,174, of which number 284,706 were negroes. The foreign population (50,249) included German, Irish, English, Canadian, Russian, and Swiss. Some of the principal cities with their populations are as follows: Louisville, 226,129; Covington, 46,436; Newport, 30,329; Lexington, 29,249. The farm area (1900) was 21,979,422 acres, 13,741,968 of which are improved. The maize crop (1907) amounted to 93,060,000 bushels, the wheat crop to 8,808,000 bushels. Tobacco is the chief crop, the 270,200 acres under cultivation in 1907 yielding 240,478,000 pounds, valued at $24,529,000. The cotton crop (1906) amounted to 1,932,790 pounds, the wool clip to 1,693,375 pounds, valued at $999,091. The value of the coal output (1906) was $9,809,938; of the mineral output, $18,758,897. The aggregate capital of manufacturing establishments (1905) was $147,282,478; the total output was worth $159,753,968. The value of the output of the more important industries (1905) was as follows: flour and grist, $18,007,786; lumber and timber, $14,539,000; spirits and ales, $14,878,327; clothing, $6,279,078. The state had (1906) 3,742 miles of railway of which 296 miles are electric; natural facilities for transport are provided by the Ohio and Mississippi rivers.

KERASUND. A port of Turkey in Asia, on the Black Sea, 65 miles from Trebizond, 156 from Batum, 468 from Odessa, and 453 from Constantinople. Exports hazelnuts, eggs, beans, sheep, and goats.

KEY WEST. A port on a coral island south of Florida, 93 miles from Havana, 552 from New Orleans, 746 from Galveston, and 147 from Miami. Population, 17,200. Exports cigars, sponges, turtles, fruits, and vegetables.

KIAU-CHAU. A German protectorate in Shantung, China. Area, 200 square miles. Population, 32,000. Exports groundnut oil, bean oil, and straw plait.

KIEL. A port and coaling station in Schleswig-Holstein, Germany, on an inlet of the Baltic, 66 miles by rail from Hamburg. Exports grain, flour, and timber. Population, 107,977.

KILIMANE or **QUILIMANE.** A port of Portuguese East Africa on the Kwa Kwa River, 12 miles from its mouth, 205 miles from Beira, and 337 from Mozambique. Exports gold, ivory, rubber, groundnuts, sesame, wax, indigo, and tortoise shell.

KILINDINI. A port in British East Africa, south of Mombasa. Terminus of the Uganda Railway.

KINGSTON. A port and coaling station in the south of Jamaica, 550 miles from Colon, 1,168 from Bermuda, 1,381 from Baltimore, and 4,262 from London. Population, 46,542. Exports sugar, coffee, tobacco, rum, cotton, fruits, and dyewoods.

KIU-KIANG. A treaty port of China on the Yang-tse-kiang, near the Poyang-hu. Population, 50,000. Exports tea.

KOBE. See HIOGO.

KONAKRY. A port in French Guinea.

KONIGSBERG. A port of East Prussia, Germany, on the Pregel, 6 miles from its mouth in the Frisches Haff, 173 miles from Danzig and 268 from Stettin. Population, 189,483. Exports grain, peas, tares, hemp, linseed, rapeseed, flax, lumber, textiles, bristles, sugar, bones, mats, feathers, hides, skins, and wax.

KOREA. See COREA.

KOTONU. A port of Dahomey, West Africa. Exports palm oil.

KUCHING. A port of British Borneo on the Sarawak River, 23 miles from its mouth. Exports rice, lumber, edible birds' nests, beeswax, pepper, camphor, rubber, and sago.

LABRADOR. See NEWFOUNDLAND.

LABUAN. An island, port, and coaling station off the northwest coast of Borneo, 725 miles from Singapore. Exports sago, edible birds' nests, beeswax, camphor, rubber, gutta-percha, and rattan. Population, 8,000.

LAGOS. A port and coaling station on the Bight of Benin, West Africa, 430 miles from Duala and 1,447 from St. Helena. Exports palm oil, nuts, cotton, ivory, gum, and copal.

LA GUAIRA or **GUAYRA.** A port of Venezuela, 23 miles from Caracas and 768 from Santiago. Exports coffee, cocoa, hides, cotton, and rubber.

LAMU. A port of British East Africa, 132 miles from Mombasa. Exports grain, ivory, rubber, gum, horns, wax, and skins.

LA PALLICE. A port in France, 3½ miles from La Rochelle. Exports wines, brandy, oysters, and vegetables.

LA PLATA. A port and coaling station of Argentine Republic, 50 miles from Buenos Aires. Exports cattle, beef, hides, horns, wool, and feathers.

LARAICHE or **EL ARISH.** A port in Morocco, 43 miles from Tangier and 74 from Rabat. Exports canary seed, beans, wool, hides, sheep, and wax. Population, 6,000.

LARNACA. A port on the south coast of Cyprus, 111 miles from Beirut and 228 from Port Said. Exports grain, cotton, raisins, oranges, lemons, and gypsum.

LA ROCHELLE. A port and coaling station of France, on the Bay of Biscay. Exports wines, brandy, oysters, vegetables, and super-phosphates. Population, 31,560.

LAS PALMAS. A port and coaling station on Grand Canary, Canary Islands, 701 miles from Gibraltar. Exports cochineal, fruit, potatoes, and wine.

LAUNCESTON. A port in the north of Tasmania on the Tamar River, 40 miles from its mouth and 133 by rail from Hobart. Exports wheat, oats, fodder, wool, lumber, copper, tin, lead, gold, silver, and fruits. Population, 21,153.

LA UNION. A port of Salvador on the Gulf of Fonseca, 104 miles from San Salvador. Exports indigo.

LAURVIK. A port of Norway, 98 miles by rail from Christiania. Exports lumber, wood pulp, granite, and fish.

LEEWARD ISLANDS. Comprise the islands of Antigua, Barbuda, and Redonda, Virgin Islands, Dominica, St. Kitts or St. Christopher, Nevis, Auguilla, and Montserrat. Area, 701 square miles. Population (1901), 127,536. Imports (1906), $2,059,434; exports, $3,320,074. Chief exports: sugar, molasses, and other products. Chief products: sugar, cotton, pine-apples, coffee, cocoa, papain, arrowroot, lime-fruit, rum, and onions. Phosphate of lime is found on Redonda and Barbuda. The Leeward Islands are part of the British Empire. (See FRENCH ESTABLISHMENTS IN OCEANIA.)

LEGHORN. A port and coaling station of Italy on the Ligurian Sea, 62 miles by rail from Florence, 78 from Genoa, and 264 from Naples. Population, 98,320. Exports hides, hemp, olive oil, marble, fruit, coral, borax, soap rags, and straw hats.

LEITH. A port and coaling station of Scotland on the Firth of Forth, two miles from Edinburgh. Population, 76,667. Exports coal, fish, cotton goods, linen goods, iron and steel products, machinery, millwork, and spirits.

LEIXOES. A port of Portugal, two miles north of the mouth of the Douro and six miles from Oporto. Exports wine, oil, cork, wool, salt, and leather.

LEVUKA. A port on Ovalau Island, Fiji. Exports cotton, oil, sugar cane, fruits, trepang, and tortoise shell.

LIBAU. A port of Russia on the Baltic, 174 miles from Riga. Population, 64,500. Exports rye, barley, oats, flax, wool, linseed, hides, and railway ties.

LIBERIA. Area, 43,000 square miles. Population (estimated), 1,500,000 to 2,120,000, all Africans. Imports (1906), $786,526; exports, $77,507. Chief imports: cottons, provisions, dried fish, woodwork, prints, clothing, boots, hardware, iron work, and gin. Chief exports: rubber, palm oil and kernels, piassava fiber, cocoa, coffee, ivory, and ginger. There are no railroads and few roads. The natural resources are rich but undeveloped. The soil is fertile, the forests valuable, especially in rubber trees. Gold and iron are found.

LIMASOL. A port on the south coast of Cyprus.

LIMON. A port of Costa Rica on the Caribbean coast, 608 miles from Jamaica and 2,017 from New York.

LINGAH. A port of Persia, 100 miles from Bunder Abbas and 1,365 from Bombay. Exports carpets, drugs, pearls, tortoise shell, and canvas. Population, 20,000.

LISBON. A port and coaling station of Portugal on the Tagus, nine miles from the sea and 302 miles from Gibraltar. Population, 356,000. Exports wines, fruits, salt, oil, wool, leather, cattle, and cork.

LIVERPOOL. A port and coaling station in Lancashire, England, on the Mersey, 201 miles from London, 125 from Dublin, 142 from Belfast, 210 from Glasgow, and 41 from Manchester. Population, with Birkenhead, 795,873. Its quays measure 26½ miles long; those of Birkenhead, 9 miles. Total water area of the harbor, 575 acres; depth of water, about 50 feet. In 1905 the exports were over $700,000,000; imports, over $705,000,000.

LIVINGSTON. A port of Guatemala. Exports bananas, coffee, rubber, mahogany, and hides.

LOANGO. A port of French Congo, 397 miles from Libreville. Exports palm oil, gums, wax, archil, copper, and ivory.

LONDON. A port and coaling station on the Thames, England. Population (1901), 4,536,541; of Greater London, 7,217,941. Least depth of water in channel, 24 feet. Area of docks, 448 acres. Exports (1905), over $515,000,000; imports, over $900,000,000.

LOUISIANA. Area, 48,506 square miles, 3,097 of which are water. Population (1900), 1,381,625, of whom 650,804 were negroes. There were 52,903 foreign-born (1900), including people of German, French, Irish, English, and Italian nationalities. Estimated population (1906), 1,539,449. New Orleans is the largest city (population, 314,146). Farm area (1900), 11,059,127 acres, 4,666,532 of which was improved. There were 28,000,000 bushels maize (1907), 8,680,000 bushels rice, 230,000 tons cane sugar, 35,000 pounds of tobacco, and (1906) 506,286,908 pounds cotton. In 1906 the petroleum output amounted to 9,077,528 barrels, valued at $3,557,838. The number of manufacturing establishments (1905) was 2,091, using material costing $117,035,305 and giving an output worth $186,379,592. The output of the principal industries is as follows: sugar and molasses, $73,786,659; lumber, $35,192,374; cotton-seed oil and cake, $13,187,608; rice cleaning, $10,718,311; bags (not paper), $4,076,226; foundry and machinery, $3,149,209. Through New Orleans a large international trade is carried on: the exports (1906-1907), consisting of cotton and cotton-seed products, wheat, flour, rice, and other produce, were valued at $170,562,428; the imports at $46,046,772. The state has 3,770 miles of navigable water, and (1905) 4,866 miles of railway, 230 miles of which are electric.

LOURENZO MARQUES. A port and coaling station on Delagoa Bay, in Portuguese East Africa, 300 miles from Durban. Population, 6,000. Exports gold, wool, and hides from the Transvaal.

LUBECK. A port of Germany on the Trave, 12 miles from its mouth in the Baltic Sea. Exports wines, spirits, coffee, sugar, and general merchandise. Population, 82,100.

LULEA. A port of Sweden on the Gulf of Bothnia, 411 miles from Stockholm. Population, 10,000. Exports iron ore and lumber.

LUNENBURG. A port of Nova Scotia, Canada, 45 miles from Halifax. Population, 2,000. Exports fish and lobsters.

LYTTELTON. A port and coaling station on South Island, New Zealand, 7 miles from Christchurch, 178 from Wellington, 12,417 from London *via* Suez, and 4,600 from Cape Horn. Exports wool, grain, frozen meat, fruits, skins, and hides.

MACAO. A Portuguese port on an island at the mouth of the Canton River, China, 88 miles from Canton and 1,429 from Singapore. Population, 64,000. Exports tobacco, preserves, essential oils, tea, and silk.

MACASSAR. A port on Celebes Island, Dutch East Indies, 786 miles from Batavia. Exports spices, coffee, gum, mother-of-pearl, and gutta-percha.

MACEIO. A port of Brazil. Exports sugar, cotton, cotton seed, maize, and hides. Population, 15,000.

MACKAY. A port of Queensland on the Pioneer River, 625 miles from Brisbane. Population, 5,200. Exports sugar.

MADAGASCAR. Area, 224,000 square miles. Population (January 1, 1906), 2,706,661. Imports (1906), $7,305,524; exports, $5,637,763. Chief imports: tissues, wines, breadstuffs, liquors, metal ware, and ironmongery. Chief exports: gold, rubber, hides, raffia, cattle, wax, and straw hats. Chief port, Tamatave. In 1906, 6,964 vessels of 1,112,912 tons entered the ports of Madagascar, and 7,003 of 1,116,718 tons cleared. There are 99 miles of railway. Cattle breeding and agriculture are the chief occupations of the people. Horses, asses, mules, sheep, goats, and pigs are raised. The chief products are rice, manioc, sugar, coffee, cotton, cacao, vanilla, tobacco, cloves, rubber and mulberry trees, and sweet potatoes. The forests abound in valuable timber. Silk and cotton weaving is carried on. The minerals are gold, iron, copper, lead, silver, zinc, antimony, manganese, nickel, sulphur, and graphite. Madagascar is a French colony.

MADEIRA. An island, port, and coaling station in the North Atlantic, 535 miles from Lisbon. Population, 151,000. Exports wines, sugar, tobacco, fruits, and vegetables.

MADRAS. A port and coaling station in India, 770 miles from Calcutta and 7,491 from London. Population, 509,500. Exports cotton, sugar, rice, indigo, hides, cocoanut oil, and pepper.

MAHE. An island and port in the Seychelles, 955 miles from Mombasa, 1,684 from Colombo, and 1,747 from Bombay. Exports vanilla, cocoanut oil, soap, tortoise shell, coffee, cocoa, nuts, and cloves.

MAHON. A port of Minorca, Balearic Islands, 142 miles from Barcelona. Exports shoes, cotton goods, and cheese.

MAINE. Area, 33,040 square miles, 29,895 of which is land. Population (1900), 694,466; it consisted of 692,226 white and 1,319 colored persons, 123 Asiatics, and 798 Indians. The foreign-born population (93,330) was principally English and French Canadian, English, and Irish. Some of the larger cities with their populations (estimated, 1906) are Portland, 55,167; Lewiston, 24,997; Bangor, 23,500; and Biddeford, 17,165. The number of farms (1900) was 59,299, containing 6,299,946 acres, 2,386,880 of which were improved. In 1907 there were 4,266,900 bushels oats, 444,000 bushels maize, besides buckwheat, potatoes, and hay. The wool clip (1906) was valued at $417,000, the output of the granite quarries at $2,560,021, and the mineral water at $258,585. There were 3,145 manufacturing establishments in the state (1905), having an aggregate capital of $143,707,730, and an annual product valued at $144,020,197. The value of the output of the most important industries is as follows: textiles, $32,985,413; lumber and timber, $17,937,683; boots and shoes, $12,351,293; fish, canning, etc., $5,055,091; foundry, $4,767,025; shipbuilding, $3,038,016; leather, $2,500,146. Portland is the principal seaport. The exports from this place (1906) consisted of meat products, cattle, wheat, and maize, and were valued at $14,685,464; the value of the imports was $1,232,928. The state had in all (1906) 2,482 miles of railway, 389 of which were electric. The railways connect with the Canadian system.

MAJUNGA. A port on the northwest of Madagascar, 710 miles from Zanzibar and 1,080 from Delagoa Bay. Exports cattle, rubber, hides, poultry, rice, tobacco, and gum. Population, 6,000.

MALAGA. A port on the south coast of Spain, 62 miles from Gibraltar and 114 from Melilla. Population, 130,100. Exports wines, fruits, olive oil, brandy, anchovies, esparto grass, and lead.

MALAY STATES (Comprised of four states: Perak, Selangor, Negri Sembilan, and Pahang). Area, 26,380 square miles. Population (1901), 678,595; (estimated 1906), 915,000; Europeans (1901), 1,422. Imports, $25,258,224; exports, $44,894,431. Chief imports: petroleum, opium, bran, flour, and sugar. Chief exports: tin, padi, sugar, tapioca, gambier, coffee, rubber, and copra. Miles of railroad in the states (1906), 428. The climate is hot and unhealthful. The chief agricultural products are coffee, pepper, sugar, rice, sago, gambier, and tapioca. The forests produce rubber, gutta-percha, valuable timber, oils, resins, bamboo, and fruits. The minerals are lead, iron, copper, bismuth, mercury, arsenic, manganese, plumbago, silver, and zinc. The Malay States are a part of the British Empire.

MALMO. A fortified port and coaling station in the south of Sweden, 16 miles from Copenhagen. Population, 67,400. Exports flour, bacon, beef, gloves, millboard, wood pulp, matches, cattle, butter, chalk, and lumber.

MALTA. A fortified port, naval base, and coaling station in the Mediterranean, 991 miles from Gibraltar and 820 from Alexandria. Valetta is the chief port. Exports potatoes, onions, oranges, grain, pulse, silks, cotton, and figs. Population, 197,000.

MANAOS. A river port of Brazil on the Rio Negro, 10 miles from its junction with the Amazon. Population, 20,000. Exports rubber.

MANCHESTER. A port on the Ship Canal in Lancashire, England, 35½ miles from the Mersey. Population of Manchester, 544,000; of Salford, 221,000. Exports textiles of all kinds, machinery, coal, chemicals, and manufactured iron and steel.

MANILA. A port and coaling station in Luzon, Philippines, 9,750 miles from London, 1,343 from Singapore, and 640 from Hongkong. Population, 220,000. Exports sugar, hemp, tobacco, cigars, cordage, indigo, coffee, and cotton.

MARACAIBO. A port in Venezuela, 217 miles from Curaçoa. Population, 34,300. Exports coffee, cocoa, dividivi, fustic, boxwood, and lignum-vitae.

MARANHAO. A port and coaling station on the north coast of Brazil, 374 miles from Ceara. Population, 30,000. Exports cotton, sugar, rice, rubber, manioc, hides, ginger, gum, and tapioca.

MARSEILLES. A port and coaling station on the south of France, 696 miles from Gibraltar, 456 from Naples, 1,506 from Port Said, and 2,038 from London. Exports wines, fruits, cork, anchovies, silks, cotton, and wool.

MARTINIQUE. A French island 80 miles southeast of Guadeloupe, West Indies. Area, 381 square miles. Population, 203,781. Nearly the whole area devastated by an eruption of Mount Pelée (4,430 feet) in 1902. Exports sugar, coffee, cocoa, tobacco, and cotton. Fort-de-France and St. Pierre are the chief towns.

MARYLAND. Area, 12,327 square miles, 9,941 of which are land. Population (1900), 1,188,044; of this number 235,064 were negroes. The total foreign-born population (1900) was 93,934; it included principally English, German, Russians, and Irish. Estimated population (1906), 1,275,434. The largest city, and also the chief commercial and manufacturing center, is Baltimore (population, 553,669). Other cities are Cumberland (19,768), Hagerstown (15,673), Frederick (9,956), and Annapolis (9,077). Farm area (1900), 5,170,075 acres, 3,516,352 of which were improved. The chief crops (1907) were wheat, 14,763,000 bushels; maize, 22,196,000 bushels; tobacco, 16,962,000 pounds, valued at $1,103,000. More tomatoes and corn are canned in Maryland than in any other state. The output of wheat flour (1905) was 1,015,866 barrels, and the wool clip (275,000 pounds in 1906) was valued at $151,250. The value of the coal output (1906) was $6,474,793; of the quarrying output, $1,239,955; of the pig iron output, $8,187,000. The oyster fisheries of Maryland yield more than those of any other state. The capital invested in the manufacturing industries (1905) was $201,877,966, and the value of the output, $243,375,996. The value of the output of some of the more important industries (1905) was as follows: men's clothing, $19,654,916; canning fruit, etc., $12,686,711; iron and steel, blast furnaces and rolling mills, $12,230,409; foundry and machine work, $9,172,034; flour milling, $7,318,212; tinware, copper, and sheet iron, $6,833,452; fertilizers, $6,631,763. Baltimore is one of the best ports on the Atlantic. In 1906-1907 the value of the imports at this city was $37,774,305; of the exports, $104,808,952. The state had (1905) 1,937 miles of railway, 496 of which were electric.

MASKAT. A port of Oman on the Gulf of Oman. Exports dates, fish, and limes.

MASSACHUSETTS. Area of land, 8,040 square miles. Population (1905), 3,003,680; 1,461,589 males and 1,542,091 females; 2,966,340 were white, 34,621 colored, 2,115 Chinese, 94 Japanese, and 510 Indian. The foreign-born numbered 918,044 and consisted chiefly of Irish, Canadian-French, English, Nova Scotian, Italian, Canadian-English, Russian, Swedish, and German. The more important cities with their populations (1905) are as follows: Boston (the capital), 595,380; Worcester, 128,135; Fall River, 105,762; Cambridge, 97,434; Lawrence (1907), 76,616. The number of farms (1905) was 100,618, yielding products valued at $64,000,000. Tobacco is grown in the Connecticut valley, the crop amounting (1907) to 7,167,500 pounds. The 10,723 manufacturing establishments (1905) were supported with a capital of $965,948,887, and turned out products worth $1,124,092,051. The output of the more important industries was valued as follows: boots and shoes, $173,679,628; cotton goods, $133,364,985; machinery, $59,621,469; metals and metallic goods, $46,983,951; woolen goods, $49,587,096. Very little mining is carried on within the state. The value (1906) of the mineral waters was $210,152; of the clay products, $2,172,753; of the granite output, $3,790,211. The fisheries yielded products to the value (1905) of $8,986,186. A large foreign trade is carried on through the port of Boston. The combined imports of Boston and Charlestown (1906-1907) were valued at $124,432,977; the exports at $100,872,147. In 1905 there were 2,106 miles of steam railroad in the state; and in 1906 the total length of electric railways was 2,736 miles.

MASSAWA. A port of Eritrea on the Red Sea, 957 miles from Suez and 398 from Aden. Population, 8,000. Exports pearls, mother-of-pearl, skins, gold, coffee, and horns.

MATADI. A port of the Congo Free State, at the head of navigation on the Congo River. Exports coffee, cocoa, rubber, palm oil, and groundnuts.

MAURITIUS. Area, 705 square miles. Population (1901), 378,195. Imports (1906), $6,424,802; exports, $11,711,579. Chief imports (from United Kingdom): cotton goods, coal, machinery, ironwork, manure, and soap. Chief exports: unrefined sugar, rum, vanilla, aloe fiber, cocoanut oil, and molasses. Chief harbor, Port Louis. In 1906, 244 vessels of 410,040 tons entered ports of Mauritius. The merchant fleet is composed of 61 vessels of 4,854 tons. There were, in 1906, 131½ miles of railway. The principal agricultural product is sugar cane. Mauritius is a British colony.

MAZAGAN. A port on the west coast of Morocco, 265 miles from Tangier and 132 from Mogador. Population, 7,000. Exports wheat, beans, almonds, oil, wool, hides, skins, bones, and wax.

MAZATLAN. A port and coaling station on the west coast of Mexico, 587 miles from Acapulco and 1,344 from San Francisco. Population, 18,000. Exports gold, silver, dyewoods, archil, and hides.

MELBOURNE. A port and coaling station in Victoria, Australia, 516 miles from Sydney and 443 from Hobart. Population, with suburbs, 501,500. Exports wool, gold, wheat, flour, butter, cheese, tallow, frozen mutton, and wine.

MEMEL. A port and coaling station in Prussia on the Baltic, 122 miles from Danzig. Population, 20,500. Exports lumber, grain, flax, hemp, amber, corn, bristles, hides, linseed, wax, pitch, tar, and nails.

MERSINA. A port in the south of Asia Minor, 194 miles from Beirut, 80 miles from Alexandretta, and 594 from Smyrna. Exports wheat, barley, oats, sesame, wool, and chrome ore.

METHIL. A port of Fife, Scotland, on the Firth of Forth. Exports coal and coke.

MEXICO. Area, 767,005 square miles. Population (1900), 13,605,919. Imports (1906-1907), $116,681,694; exports, $124,009,005; imports (U. S., 1906,1907), $73,188,292; exports, $87,904,561. Chief im-

ports: animal, vegetable, and mineral products; textiles, machinery, chemicals, alcoholic beverages, paper, timber, and cereals. Chief exports: silver, gold, copper, henequen, coffee, hides, and manufactures. Chief imports from Mexico into United States: copper, copper ore, lead, lead ore, sisal grass, hides, rubber, and coffee. Chief exports from United States into Mexico: iron and steel work, coal, carriages, wood, wooden manufactures, cotton, maize, wheat, copper, electric machinery, and locomotives. Chief ports: Acapulco, Tampico, Mazatlan, Vera Cruz, Progreso, and Tehuantepec. The merchant fleet (1905) was made up of 32 steamers of 13,199 tons, 29 sailing vessels of 8,451 tons. In 1906-1907, 1,669 vessels of 3,257,932 tons cleared the ports. In 1907 there were 13,995 miles of railway. The chief agricultural products are wheat, sugar, and henequen. Cattle raising is carried on extensively. In 1902 the cattle, horses, mules, asses, sheep, goats, etc., were valued at $60,261,579. The minerals are gold, silver, copper, lead, antimony, platinum, iron, quicksilver, and tin.

MICHIGAN. Area, 57,980 square miles, 500 of which are water. Population (1900), 2,420,982; the white population (including Indians and Asiatics) was 2,405,166; the negro inhabitants numbered 15,816; 541,653 were foreign-born. The population (1904) was 2,530,016; estimated (1906), 2,584,533. The principal cities with their populations (1904) are: Detroit, 317,591; Grand Rapids, 95,718; Saginaw, 46,610; Bay City, 40,641. Farm area (1904), 17,310,700 acres, of which 11,605,349 acres were improved. The chief crops (1907) were maize (57,190,000 bushels), wheat (12,731,000 bushels), oats (30,534,000 bushels), beet sugar (79,189 tons), potatoes, and hay. The Marquette, Menominee, and Gogebic ranges furnish splendid resources for iron ore, the output (1906) amounting to 12,803,260 tons, worth $31,145,087. The copper output (1906) was valued at $44,790,667; the silver output at $163,556; salt at $2,018,760; coal at $2,427,404. The number of manufacturing establishments (1904) was 7,446, the aggregate capital supporting them was $337,894,102, and the product was valued at $429,039,778. The value of the output of the more important industries is as follows: lumber and timber, $40,569,335; foundry and machine, $31,506,195; flour and grist, $26,512,027; copper smelting, $21,222,217; carriages, wagons, $20,097,704; furniture, $18,421,735. The railway car, leather, and tobacco industries are also of importance. In 1905 there were in all 10,303 miles of railway, 1,509 miles of which were electric.

MIDDLESBOROUGH. A port of Yorkshire, England, on the river Tees, 40 miles from Newcastle, 99 from Hull, and 198 from London. Population, 92,000. Exports iron and steel manufactures, machinery, bricks, clay, coal, coke, chemicals, and salt.

MINNESOTA. Area, 84,682 square miles, 3,824 of which are water. Population (1900), 1,751,394, of whom 4,959 were colored. The foreign-born inhabitants (505,318) consisted principally of Germans, Swedes, Norwegians, Danes, English and French Canadians, and Irish. Estimated population (1906), 2,025,615. The largest cities with their populations (estimated 1906) are: Minneapolis, 273,825; St. Paul, 203,815; Duluth. 67,337; Winona, 20,458. Minnesota is largely an agricultural state. There were (1900) 154,659 farms, with a total area of 26,248,498 acres, 18,442,585 of which are improved. The crop (1907) of maize was 43,605,000 bushels; of wheat, 67,600,000 bushels; of oats, 61,985,000 bushels; of barley, 26,663,000 bushels. The mining of iron ores (1906) yielded a product valued at $51,799,256, while the output of granite was valued at $626,069, and the output of limestone at $632,115. Some of the important industries are the making of boots and shoes, clothing, furniture, metal goods, and machinery. In 1905 the manufacturing establishments numbered 4,756, having a total capital of $184,903,271, using raw material to the value of $210,553,949, and giving an output worth $307,858,073. Minneapolis is an important center of the grain trade; Duluth is an important port on Lake Superior. Minnesota had (1906) 8,477 miles of railway, 413 of which are electric.

MISSISSIPPI. Area, 46,865 square miles, 503 of which are water. Population (1900), 1,551,270; the white population (including Indians and Asiatics) was 643,640; the colored inhabitants numbered 907,630. The foreign-born population (7,981) was principally German and Irish. Estimated population (1906), 1,706,272. The larger cities with their populations (estimated 1906) are: Meridian, 20,503; Vicksburg, 15,710; and Natchez, 13,476. The farm area (1900) was 18,240,736 acres, 7,594,428 of which are improved. Cotton is the chief product, the crop (1906) amounting to 1,569,530 bales, or 784,765,181 pounds. There were also 42,500,000 bushels maize (1907); 24,000 bushels rice; 47,500 pounds tobacco; wheat, oats, and potatoes. No mining is done. The mineral output (1906), including clay products, was valued at $954,559. The number of establishments (1905) engaged in the manufacturing industries was 1,520. Their aggregate capital amounted to $50,256,309, the materials used were worth $25,800,885, and the output valued at $57,451,445. The output of some of the more important industries is as follows: lumber, $24,035,539; cotton-seed oil and cake, $12,587,147; cotton goods, $2,462,808; turpentine and resin, $2,365,720; railway cars, $2,886,422. Natural facilities for transport are provided by the Mississippi River and the Gulf coast. There are 3,763 miles of railway, 55 miles of which are electric.

MISSOURI. Area, 69,420 square miles, 693 of which are water. Population (1900), 3,106,665, of whom 161,234 were negroes: 1,595,710 were male and 510,955 female. The chief nationalities represented in the foreign-born population (216,379 in 1900) were German, Irish, English, and Canadian. Estimated population (1906) of the state, 3,363,153; of the largest cities,—St. Louis, 649,320; Kansas City, 182,376; St. Joseph, 118,004; Joplin, 35,671. The chief occupation in the state is agriculture. Farm area (1900), 33,997,873 acres, 22,900,043 of which were improved. The crop of maize (1907) amounted to 241,025,000 bushels; of wheat to 29,212,000 bushels; of oats to 14,254,000 bushels; of flaxseed to 305,000 bushels; of tobacco to 1,237,500 pounds. Stock raising is also important, and the wool clip (1906) was valued at $1,341,560. The coal output (1906) was valued at $6,118,733; the output of lead, $12,662,550; the output of Portland cement, $3,260,000. The capital invested in manufacturing industries (1905) was $379,368,827, and the output was worth $439,548,957. The value of the output of the chief industries is as follows: slaughtering and meat packing, $60,031,133; flour and grist milling, $38,026,142; tobacco manufacturing, $30,884,182; brewing, $24,154,264; boot and shoe making, $23,493,550. There were (1906) 9,142 miles railway, of which 1,097 miles were electric. The traffic between St. Louis and the Gulf of Mexico is heavy.

MOBILE. A port and coaling station in Alabama, 204 miles from New Orleans and 547 from Havana Exports lumber, grain, flour, live stock, meat, cotton, and vegetables. Population, 38,500.

MOGADOR. A port on the west coast of Morocco, 385 miles from Teneriffe. Population, 16,000. Exports wool, hides, skins, maize, dates, almonds, gums, beeswax, and olive oil.

MOJI. A port and coaling station in Japan. Exports cotton yarn, coal, and metals.

MOLLENDO. A port of Peru, 458 miles from Callao and 966 from Valparaiso. Population, 3,000. Exports wool, bark, hides, and specie.

MOMBASA. A port and coaling station in British East Africa. Exports gum, copra, cattle, grain, and ivory.

MONROVIA. A port and the capital of Liberia near the mouth of the Mesurado River on the west of Africa. Exports palm oil, cotton, ivory, and camwood.

MONTANA. Area, 146,572 square miles. Population (1900), 243,329; of this number 1,523 were colored. The foreign-born population, which numbered 67,067, consisted chiefly of Germans, Canadian-English, Irish, and English. The Indian reservation has a population of 9,904. Estimated population (1906), 303,575. The chief crop is wheat, amounting (1907) to 4,003,000 bushels; the wool clip was valued at $8,524,000. This state produces more wool than any other state in the Union. Oats, potatoes, and barley are also extensively cultivated. The production of coal (1907) was valued at $3,240,357; of copper, $56,877,341; of silver, $8,027,072; of gold, $4,469,014; of lead, $283,290. The lumber industries are also important. The number of manufacturing establishments (1905) was 332, their capital amounted to $52,589,810, and their output was valued at $66,415,452. In 1905 the value of the output of the chief industries was as follows: smelting and refining of copper, $53,853,026; lumber and timber, $3,024,674; flour and grist, $2,003,136; brewing, $1,731,691. The telegraph lines (1906) had a length of 9,556 miles, the telephone lines of 5,384 miles. In the same year the state had 3,383 miles of railway, 74 of which were electric.

MONTENEGRO. Area, 3,630 square miles. Population (about), 230,000. Exports (estimated 1906), $393,660; imports, $1,166,400. Chief exports: sumach, flea powder, smoked sardines, smoked mutton, cattle, sheep, goats, cheese, wool, and hides. Chief imports: salt from Turkey, petroleum from Russia, maize, cottons, hardware, sugar, coffee, and rice. There is a narrow-gauge railway in course of construction. Agriculture is in a backward condition. Iron has been found.

MONTEVIDEO. A port and the capital of Uruguay. Exports wheat, wool, beef extract, hides, horns, bones, and phosphorus. Population, 175,000.

MONTREAL. A port of Canada on the St. Lawrence River, 136 miles above Quebec, 864 from Belle Isle, and 2,760 from Liverpool. Population, 216,650. Harbor closed by ice from October to May. Depth of channel from Quebec, 27½ feet at low water. Exports animal and agricultural products, leather, and wood manufactures.

MOROCCO. Area, 219,000 square miles. Population (considered), 5,000,000. Imports (1906), $14,467,734; exports, $8,534,689. Chief imports: cotton manufactures, sugar, flour, tea, candles, cloth, iron and hardware, wine and spirits. Chief exports, hides and skins, wool, oxen, eggs, slippers, almonds, beeswax, and linseed. Agriculture and cattle raising are the principal occupations. The chief crops are wheat, barley, maize, cotton, hemp; large quantities of olives, figs, almonds, grapes, oranges, lemons, and dates.

MOULMEIN. A port and coaling station of Burma at the mouth of the Salwin River, 147 miles from Rangoon and 934 from Calcutta. Population, 58,500. Exports teak, sapan wood, lac, rice, betel nuts, and ivory.

NAGASAKI. A port and coaling station of Japan on the island of Kiushiu, 10,850 miles from London. Population, 153,300. Exports agricultural products, coal, and charcoal.

NANKIN. A port of China on the Yang-tse-kiang River, 130 miles from its mouth and connected with Peking by the Grand Canal (560 miles). Population, 500,000. Exports cotton, paper, and silk.

NAPLES. A port and coaling station of Italy on the west coast. Population, 463,172. Exports wines, silk, hemp, flax, and fruit.

NASSAU. A port and the capital of the Bahamas on New Providence Island. Population, 5,000.

NATAL (Including Zululand and Northern Districts). Area, 35,371 square miles. Population (1904), 1,108,754; (estimated 1906), 1,151,907. Imports (1906), $44,116,917; exports, $12,399,716. Chief imports: apparel and haberdashery, corn leather, ironmongery, cottons, woolens, and machinery. Chief exports: angora hair and mohair, hides and skins, sugar, coal, wool, gold, and bark. The merchant marine (1906) consisted of 54 vessels of 3,334 tons. There are 935 miles of railway. Climate healthful; agriculture chief occupation; cattle and sheep farming carried on. The forests of Zululand are very valuable. Coal fields are very extensively worked. Natal is part of the British Empire.

NEBRASKA. Area, 77,520 square miles, 712 of which are water. Population (1900), 1,066,300; 564,592 were male, 501,708 female; the negroes numbered 6,269. The foreign-born population, which consisted principally of the German, Swedish, Bohemian, Danish, and Irish nationalities, numbered 177,347. Nebraska is important agriculturally. In 1907 the yield of maize was 179,328,000 bushels; of wheat, 45,911,000 bushels; of oats, 51,490,000 bushels; of beet sugar, 9,379 tons. The whole farm area, consisting of 121,525 farms (1900), had a total area of 29,917,772 acres, 18,432,525 of which were improved. The wool clip (1906) was valued at $402,188, and the total mineral output at $2,053,100. The number of manufacturing establishments in the state (1905) was 1,819; their aggregate capital was $80,235,310; and the value of the output, $154,918,250. The output of the most important industries was valued as follows: slaughtering, $69,243,468; flour and grist, $12,190,303; butter, $3,308,944; railway cars, $4,394,685. Omaha, on the Missouri is an important center, both for the railroad and river traffic. In 1906 the state had 6,088 miles of railway, 255 of which were electric.

NETHERLANDS. Area, 12,648 square miles. Population (1899), 5,104,137; (by communal lists, December 31, 1906), 5,672,287. Imports (1906), $1,021,815,000; exports, $844,020,000. Imports (from U. S., 1906), $127,575,000; exports, $34,911,000. Chief imports: iron and steel, textiles, cereals and flour, coal, rice, wood, and copper. Chief exports: iron and steel, textiles, cereals and flour, and paper. Chief ports: Amsterdam, Flushing, Harlingen, and Rotterdam. In 1906, 13,985 vessels of 12,744,354 tons entered the ports of Holland and 14,049 of 12,705,768 tons cleared. In 1905, 4,048 Dutch vessels of 2,755,882 tons were engaged in foreign trade. In 1905, the length of the tramway lines was 1,229 miles; in 1906 the railroad lines were 1,895 miles in length; in 1879 there were 1,907 miles of canals. One fifth of the land is unproductive. The chief products are wheat, rye, barley, oats, potatoes, and buckwheat. There is a large export trade in bulbs, shrubs, and vegetables. There are a few coal mines that are worked. Osyters and fish are obtained in large quantities. In 1906, 5,386 vessels of all kinds were engaged in the fisheries.

NEVADA. Area, 110,690 square miles, 869 of which are water. Population (1900), 43,335, including 5,216 Indians, 1,352 Chinese, and 134 negroes. The principal nationalities represented in the foreign-born were Irish, German, and English. The farm area (1900) was 2,565,647 acres, 572,946 of which were improved. The wool clip (1906) amounted to 1,612,000 pounds, valued at $1,096,200. The gold output (1906) was valued at $10,470,704; the silver output at $4,536,310; the lead output at $190,266; the copper output at $210,493; the zinc output at $215,696. The manufacturing industries (1905) numbered 115; their aggregate capital amounted to $2,891,997; the raw materials used were worth $1,627,776; and the value of the output was $3,096,274. Some of the more important industries were for the manufacture of flour and grist, cars, and butter. The length of railway in the state (1906) was 1,185 miles, 5 of which were electric.

NEVIS or CHARLESTOWN. A port in the British West Indies in the Leeward group. Population of Charlestown, 12,000. Exports sugar, cotton, and tamarinds.

NEW CALEDONIA. Area, 7,650 square miles. Population (1906), 53,346; penal population, 7,034. Imports (1906), $2,082,444; exports, $1,841,927. Chief imports: farinaceous foods and beverages. Chief exports: nickel, cobalt and chrome ores, coffee beans, and copra. Chief port, Nouméa. In 1906, 139 vessels of 207,526 tons cleared the port of Nouméa. A railway of 90 miles is under construction, 10 miles of which are open. About one half of the land is cultivable. The products of the soil are coffee, maize, tobacco, sugar, grapes, manioc, and pineapples. There are about 130,000 cattle and sheep. Several minerals of value have been found.

NEWCASTLE. A port of New South Wales, 62 miles from Sydney. Exports coal, lumber, and frozen meat.

NEWCASTLE-UPON-TYNE. A port and coaling station on the Tyne River in Northumberland, England. Population, 186,345. Exports coal, chemicals, and manufactured iron and steel.

NEWFOUNDLAND AND LABRADOR. Area, Newfoundland, 42,734 square miles; Labrador, 120,000 square miles. Population, Newfoundland (1901), 217,037; (estimated 1906), 228,755. Labrador (1901), 3,634; (estimated 1906), 4,023. Imports (1905-1906), $10,476,702; exports, $12,159,039. Chief imports: textiles, flour, hardware, coal, salt pork, molasses, tea, and machinery. Chief exports: dried cod, cod oil, iron ore, canned lobsters, copper, herring, and sealskins. Chief port: St. John's. Total tonnage of vessels entered and cleared the ports of Newfoundland (1906), 1,864,299, of which 1,005,473 was British. The number of vessels registered in the colony (1906) was 3,199 of 135,785 tons. In 1905 there were 645 miles of railway. In 1901 there were 85,533 acres of land cultivated. Crops of potatoes, turnips, hay, barley, and oats are produced. Cattle, sheep, and swine are quite extensively raised. The fish caught yearly are valued at over $5,000,000. Copper and iron mines are worked.

NEW GUINEA: BRITISH, DUTCH, and GERMAN. Area, British New Guinea, 90,540 square miles; Dutch New Guinea, 151,789 square miles; German New Guinea, 70,000 square miles; total, 312,329. Population (estimated), British New Guinea, 351,000; Dutch New Guinea, 200,000; German New Guinea, 110,000; total, 661,000. Imports (1906): British New Guinea, $387,201; German New Guinea, $218,359. Exports (1906):

British New Guinea, $390,209; German New Guinea, $11,701. Chief imports: foodstuffs, tobacco, drapery, and hardware. Chief exports: trepang, copra, pearl shell, gold, pearls, sandalwood, coffee, and rubber. Chief ports: Port Moresby and Friedrich Wilhelmshafen. Some of the products are bananas, sago, tamarinds, cocoanuts, bamboo, cotton, camphor, rubber, and tobacco. Valuable timber, gold, and pearls are numbered among the resources.

NEW HAMPSHIRE. Area, 9,341 square miles, 310 of which are water. Population (1900), 411,588, of whom 662 were colored. Estimated population (1906), 432,624. Manchester is the largest city in the state, its population (estimated 1906) being 64,703. Other cities of importance are Nashua, 26,652; Concord, 21,210; Dover, 13,459; Portsmouth, 11,123. In 1900 there were 29,324 farms in the state, comprising 3,609,861 acres, nearly 30 per cent. of which were improved. The chief crops are hay, corn, potatoes, oats, and apples. The tobacco grown (1907) amounted to 165,000 pounds. The output of granite (1906) was valued at $818,131, of mica at $9,884, of the clay products at $726,051. The capital invested (1905) in the manufacturing industries was $109,495,072; the raw materials used were worth $73,216,387; and the value of the output, $123,610,904. The manufacturing is largely carried on in the southern part of the state. Portsmouth is the only port, and the shipping is small. The length of railway (1906) was 1,276 miles steam and 292 miles electric.

NEWHAVEN. A port in Sussex, England, at the mouth of the Ouse, 62 miles from Southampton. Exports silk goods, woolen goods, and leather.

NEW JERSEY. Area, 7,525 square miles land. Population (1905), 2,144,143, of whom 79,564 were colored. Of the foreign-born, 119,051 were German, 75,786 Italian, and 183,465 from the British Isles. The estimated population of the state (1906) was 2,196,237; of the principal cities,—Newark, 289,634; Jersey City, 237,952; Paterson, 112,801; Trenton, 86,355; Camden, 84,849. The chief crops (1907) were maize, 8,757,000 bushels; wheat, 1,998,000 bushels; oats, 1,770,000 bushels; potatoes, 8,400,000 bushels. The fisheries are valuable. The output of magnetite iron ore (1906) was valued at $1,570,578; granite, sandstone, and limestone at $1,394,393; Portland cement at $4,445,364; the total mineral output at $30,854,697. The manufacturing industries (1905) were supported with a capital of $715,060,174; the raw material used was worth $470,449,176; and the value of the output was $774,369,025. The output of some of the more important industries was valued as follows: textile, $96,060,407; copper smelting, $62,795,613; foundry and machine work, $49,425,384; petroleum refining, $46,608,984; iron and steel, $23,667. The length of railway (1905) was 2,274 miles; the length of canals, 173 miles.

NEW MEXICO. Area, 122,460 square miles. Population (1900), 195,310; 180,207 were white, 13,144 Indian, 1,445 Chinese or Japanese, and 1,610 negro or of African descent. Estimated population (1907), 400,000. The largest towns are Albuquerque (15,000), and Las Vegas (10,000). Cereals, vegetables, and fruit are produced in the state. The irrigated area (1900), exclusive of lands in Indian reserves, covered 203,893 acres. The wool clip (1906) was valued at $3,818,430; the forest area was about 6,000,000 acres. The value of the gold output (1905) was $381,930; of the silver output, $124,103. Of copper there were 5,334,192 pounds; of lead, 1,170 short tons; of zinc ore, about 20,000 short tons; of coal, 1,649,933 short tons, valued at $2,190,231. The aggregate capital of the manufacturing industries (1905) was $4,638,248; the raw materials used cost $2,235,934; and the output was valued at $5,705,880. The most important industries are car construction, lumber and timber working, and flour and grist milling. There were (1905) 2,556 miles of railway in the territory.

NEW ORLEANS. A port and coaling station about 112 miles from the mouth of the Mississippi. Population, 242,039. Exports cotton, grain, lumber, and tobacco.

NEW SOUTH WALES. Area, 310,367 square miles. Population (1901), 1,359,133; (estimated June 30, 1907), 1,555,253. Imports (1906), $168,473,664; exports (1906), $221,802,079. Chief exports: gold coin, wool, coal, meat, hides, and skins. Chief ports: Sydney and Newcastle. The miles of railway were (1906) 3,390. In 1905 vessels entered and cleared, 5,419 in number of 9,381,619 tons. Chief crops: wheat, maize, barley, oats, potatoes, lucerne, tobacco, sugar cane, grapes, oranges, and citrus fruit. In 1906, 325,442,000 pounds of wool were sheared. The production of minerals in 1906 was valued at $38,455,799, about one eighth of which was gold. Other minerals were silver, copper, coal, and tin. There were in 1906 3,382 manufactories and works, employing 77,758 hands.

NEW YORK. Chief port of the United States. Distance from Liverpool, 3,050 miles. Depth on bar at Sandy Hook, 35 feet at high water and 29½ at low. Exports breadstuffs, meat, cotton, petroleum, tobacco, etc., to the value of over $550,000,000 annually.

NEW YORK. Area, 49,204 square miles, 1,550 of which are water. Population (1900), 7,268,894, of whom 99,232 were colored; 3,614,780 were male, 3,654,114 female; 1,900,425 were foreign-born; the nationalities most numerously represented being German, Irish, English, Scotch, Italian, and Russian. Some of the larger cities are New York, population, 4,013,781; Buffalo, 376,587; Rochester, 181,666; Syracuse, 117,503; Albany, 98,374. There were (1900) 226,720 farms with an area of 22,648,100 acres, 15,599,986 of which were improved. The crops (1900) were maize, 16,200,000 bushels; wheat, 7,197,000 bushels; tobacco, 8,165,000 pounds; besides hay, potatoes, and oats. The value of the wool clip (1906) was $1,283,250; of the iron ore, $2,635,639; of the crude petroleum, $1,995,377; of the mineral water, $893,476; of the limestone output, $2,204,724; of Portland cement, $2,725,744; of the brick, tile, and pottery output, $13,876,607; of the salt output, $2,098,686. The number of manufacturing establishments (1905) was 37,194; the capital invested in them, $2,031,459,515; the cost of raw material used, $1,348,603,286; the value of the output, $2,488,345,579. The most important industries according to output (1905) are: women's clothing, $173,548,385; men's clothing, $167,167,536; textile, $123,668,177; sugar and molasses refining, $116,438,838; foundry and machine shop, $115,876,193; printing and publishing, $137,985,751; liquors, $73,399,798; slaughtering, $73,218,198. As a shipping port New York ranks third in the world; the imports (1906-1907) amounted in value to $853,696,952; the exports to $627,949,857. The state had (1906) 8,336 miles of railway, and 3,304 miles of electric railway track; the canals have a length of 566 miles.

NEW ZEALAND. Area (including Cook and other islands), 104,751 square miles. Population (1906), 888,578. Imports (1906-1907), $78,109,370; exports, $96,674,371. Imports (U. S., 1906), $6,832,095; exports, $3,123,969. Chief imports: clothing, iron and steel goods, sugar, spirits, tobacco, fruits, oils, paper, books, and tea. Chief exports: wool, gold, meat, butter and cheese, hides, tallow, kauri gum, grain, and phormium fiber. Chief ports: Auckland, Wellington, Lyttelton, Buff Harbour, and Dunedin. The mercantile navy consisted (1906) of 608 vessels of 122,760 tons. In 1906, 629 vessels of 1,243,652 tons entered the ports. March 31, 1907, 2,571 miles of railway were open. Agriculture, cattle and sheep raising, dairy farming and mining are the chief occupations. Principal crops are wheat, barley, oats, and potatoes. Large quantities of silver, coal, kauri gum, and gold are raised yearly. The value of the output of minerals (1906) was $18,728,321, about one half of which was gold.

NICARAGUA. Area, 49,200 square miles. Population (estimated 1906), over 600,000. Imports (1905), $3,311,802; exports, $3,442,644. Exports (U. S., 1907), $1,923,111; imports, $1,028,166. Chief imports; ironwork, breadstuffs, and cottons. Chief exports: coffee, timber, gold, rubber, bananas, cattle, hides, and mahogany. Chief ports: Bluefields, Corinto, and Greytown. The registered shipping (1905) was two steamers of 420 tons and 12 sailing vessels of 7,607 tons. Vessels to the number of 979 of 487,402 tons entered the ports in 1905. There were 180 miles of railway in Nicaragua. Chief agricultural products are bananas, sugar, cocoa, rubber, tobacco, maize, mahoganv, and rice. The gold output in 1904 was $667,294. Coal and oil are also found. Local industries manufacture some commodities for home consumption, as shoes, furniture, etc.

NIUCHWANG. A port of Manchuria on the Liao River, 25 miles from its mouth. Exports beans, bean cake, castor oil, tobacco, and silk.

NORTH CAROLINA. Area, 52,250 square miles, 3,686 of which are water. Population (1900), 1,893,810, of whom 624,469 were colored; 938,677 were male, 955,133 female; 4,492 were foreign-born. Estimated population of the state (1906), 2,059,326; of the largest cities,—Wilmington, 21,528; Charlotte, 22,009; Asheville, 18,414. Agriculture is the chief occu-

pation. Farm area (1900), 22,749,356 acres, 8,327,106 of which were improved. The crop of cotton (1906-1907) amounted to 297,193,655 pounds; of wheat (1907), to 5,320,000 bushels; of maize, to 45,078,000 bushels; of tobacco, to 100,875,000 pounds (valued at $11,096,000); of rice, to 23,000 bushels. The clay products (1906) were valued at $1,182,338; the granite, limestone, and sandstone output at $812,961. The value of the output of the chief industries is as follows: cotton goods, $47,354,054; tobacco, 28,087,969; lumber and timber, $15,731,379; flour and grist, $6,863,770. The exports from the chief seaport, Wilmington, were valued at $18,566,468 in 1906-1907. The state had (1906) 4,085 miles of railway, 94 miles of which were electric.

NORTH DAKOTA. Area, 70,837 square miles, 654 of which are water. Population (1900), including 6,968 Indians and 286 negroes, was 319,416; the foreign-born numbered 113,091; the Norwegian, Canadian, Russian, and German nationalities being best represented. Population (1905), 480,082; estimated (1906), 490,387. Fargo is the only city of any size, having a population of (1906) 13,097. Farm area (1900), 15,542,640 acres, 9,644,520 of which were improved. The crops (1907) amounted to 55,120,000 bushels wheat, 32,340,000 bushels oats, 15,646,000 bushels barley, 55,130,000 bushels flaxseed. Potatoes and hay are also cultivated, and an active livestock industry is carried on; the wool clip (1906) was valued at $636,920. The coal output (1906) was valued at $451,382; the clay products at $269,873. The state had (1905) 507 manufacturing establishments with a capital of $5,703,837; the raw materials used were worth $7,095,986; the value of the output was $10,217,914. The most important industry is flour and grist milling, the output being valued at (1905) $6,463,228. There were (1905) 3,233 miles of steam and 13 miles of electric railway.

NORTHERN NIGERIA. Area, 256,400 square miles. Population (estimated 1907), 7,164,751. Imports (last 6 months of 1906), $490,510; exports, $559,692. The length of railway is 22 miles. There is a caravan trade from the west, north, and east. Chief products: palm oil and kernels, rubber, groundnuts, shea butter, ivory, hides, live stock, ostrich feathers, capsicum, kola nuts, and tobacco. There are large deposits of salt and soda. Tin and some silver are found.

NORWAY. Area, 124,129 square miles. Population (1900), 2,240,032; (estimated 1905), 2,311,000. Imports (1906), $92,064,512; exports, $65,907,283. Chief imports: breadstuffs, minerals, groceries, textiles, tallow, yarn, vessels and carriages, and timber. Chief exports: animal produce, timber, paper, minerals, hair and skins, tallow, vessels and carriages, and metals. Chief ports: Bergen, Christiania, Christiansand, Drontheim, Hammerfest. Mercantile marine, January 1, 1906, numbered 7,587 vessels of 1,482,094 tons. In 1905, 13,589 vessels of 4,119,615 tons entered and cleared Norwegian ports. The total length of railway in 1907 was 1,592 miles. Only three per cent. of the land is cultivated; 22 per cent. was under forest. The principal crops are oats, rye, barley, and potatoes, but not enough for home consumption. The mining industry is unimportant. The timber, wrought and unwrought, in 1906 was valued at $21,362,012. In 1905, 83,286 people were engaged in cod fishing; the value of the fisheries (1905) was $8,398,293.

NOVOROSSIYSK. A Russian port on the Caucasian shore of the Black Sea, 400 miles from Odessa. Exports grain, oil seeds, petroleum, and wool.

ODESSA. A port of Russia on the Black Sea. Population, 313,687. Exports grain, cattle, linseed, hides, and tallow.

OHIO. Area, 41,040 square miles, 300 of which are water. Population (1900), 4,157,545; 96,901 were negroes; the foreign-born population numbered 458,734; 2,102,655 were male, 2,054,890 female. Estimated population of the state (1906), 4,448,677; of the principal cities.—Cleveland, 460,327; Cincinnati, 345,230; Toledo, 159,980; Columbus, 145,414; Dayton, 100,799. In 1900 there were 276,791 farms with an area of 24,501,985 acres, 19,244,472 of which were improved. The crop of maize (1907) amounted to 117,640,000 bushels; of wheat to 30,677,000 bushels; of oats to 36,480,000 bushels; of tobacco to 60,480,000 pounds. Horse rearing, cattle breeding, and dairy farming are important; the value of the wool clip (1906) was $3,584,475. The output of coal (1906) was valued at $30,346,580; of petroleum at $16,997,000; of sandstone and limestone at $4,451,683; of Portland cement at $1,709,918; of the brick, tile, and pottery industries at $31,014,165. The capital invested in manufacturing industries (1905) was $856,988,830; the raw materials used cost $527,636,585; the output was valued at $960,811,857. The output of the chief industries (1905) was as follows: iron and steel, $152,859,124; foundry and machine shop, $94,507,691; flour and grist, $40,855,566; slaughtering, $28,729,044; carriages and wagons, $45,430,727. Length of railway in the state (1906), 13,102 miles, 3,832 of which were electric.

OKLAHOMA. Area, 70,470 square miles, 600 of which are water. Population (1900), 398,331, of whom 18,831 were negroes and 15,680 were foreign-born. Some of the important cities are Oklahoma, population, 32,452; Guthrie, 11,652; Shawnee, 10,955; Enid, 10,087. The state is mainly agricultural. Farm area (1900), 15,719,258 acres, 5,511,994 of which were improved. The crop of maize (1907) amounted to 113,265,000 bushels; of wheat to 8,631,000 bushels; of oats to 6,270,000 bushels; of cotton to 249,449,456 pounds. Stock raising is carried on in the western part of the state. The mineral products are granite, sandstone and limestone, gypsum, and petroleum; small amounts of coal and copper are found. The more important of the manufacturing industries are flour and grist milling (output, $9,436,266 in 1905); cottonseed oil and oil cake making (output, $1,603,584). Total value of output of all industries (1905), $16,549,656. In 1905 the state had 2,624 miles of railway.

OMAN. Area, 82,000 square miles. Population (estimated), 800,000. Imports (year 1906-1907), $2,242,525; exports, $1,196,797. Chief imports: rice, coffee, sugar, piece goods, silk and silk goods, twist and yarn, wheat and grains, arms and ammunition. Chief exports: dates, fruit, fish, limes, and mother-of-pearl. Chief port, Maskat; which 695 vessels of 613,215 tons cleared in the year 1906-1907. The mineral resources are unknown.

ORAN. A port and coaling station in Algeria, 535 miles from Marseilles. Exports grain, cotton, wool, esparto, and wine.

ORANGE RIVER COLONY. Area, 50,392 square miles. Population (1904), 887,315, of whom 142,679 were white. Imports (1907), $18,279,291; exports, $17,763,343. Chief imports: haberdashery, apparel, cotton goods, blankets, articles of food and drink, wood and hardware. Chief exports: wool, mohair, hides and skins, meal, wheat, mealies and Kaffir corn, eggs and butter, imported goods re-exported, diamonds, and specie. Railways in operation (1905) were 1,685 miles in length. Irrigation schemes of great magnitude are in the process of realization. Wheat, oats, maize, and tobacco are the principal crops. There are great herds of cattle, sheep, goats, and pigs. Gold, diamonds, coal, and salt are mined. The mineral output in the year 1905-1906 was valued at $4,849,079.

OREGON. Area, 96,669 square miles, 1,092 of which are water. Population (1900), 413,536; the foreign-born numbered 65,748. The Indian reservations (1905) comprised 1,991 square miles, with a population of 3,913. Estimated population (1906), 474,438. The largest city is Portland with an estimated population (1906) of 109,884; Astoria had 9,701 inhabitants. Of the total area (1906), 26,752,025 acres were appropriated, 14,785,766 reserved, and 19,739,649 unappropriated. There are 6,072,550 acres of timber-land in the form of forest reserves. Some of the important crops are potatoes, oats, barley, wheat, and hay. The value of the wool clip was $3,121,000 (1906); of the gold product, $1,366,900; of silver, $53,162; of coal, $212,338. The fisheries are also important. The number of manufacturing establishments in the state (1905) was 1,602; their aggregate capital was $44,023,548; the cost of raw material used, $30,596,763; and the output was valued at $55,525,123. The output of the more important industries (1905) was valued as follows: lumber and timber, $12,483,908; flour and grist, $8,467,613; slaughtering and packing, $2,907,154; planing mills, $2,653,310; fish canning, $2,577,746; dairy produce, $1,629,343. The Columbia River is navigable to large ocean vessels as far as Portland. The imports at Willamette (1906-1907) were valued at $4,170,313; the exports at $11,831,902. The number of miles of railway (1905) was 2,041, of which 228 miles were electric.

OSTEND. A port and coaling station in Belgium, 60 miles from Dover and 120 from London. Exports corn, seed, cattle, potatoes, and flax. Population, 27,412.

PADANG. A port of Sumatra on the west coast. Exports coffee, spices, and rattans.

PALERMO. The principal port of Sicily and a coaling station, 169 miles from Naples. Population, 205,712. Exports oil, wine, fruit, and sulphur (475,000 tons annually).

PANAMA. Area, 33,800. Population (estimated), 400,000. Imports (1906), $7,147,208; exports (to Great Britain, 1906), $224,021. Imports (U. S., 1906), $3,546,264. Chief imports: woolen and cotton goods, colonial produce, and coal. Chief exports: oil, wine, fruit, and sulphur. Chief ports: Colon and Panama. In 1905, 471 steamers of 1,361,150 tons, and 268 sailing vessels of 22,348 tons entered Panama ports. The only railroad, from Colon to Panama, is 47 miles long. There is very little agriculture. The chief products are bananas, caoutchouc, coffee, cocoa, cocoanuts, and mahogany. There are pearl fisheries, and a trade in turtle shell. Stock raising is engaged in. Some gold has been mined.

PANAMA. A port and coaling station in the republic of Panama on the Pacific coast, 47 miles from Colon on the other side of the Isthmus of Panama and 3,277 miles from San Francisco. Exports pearls, mother-of-pearl, rubber, and mahogany.

PARA or **BELEM.** A port and coaling station of Brazil in the estuary of the Amazon River. Exports rubber, nuts, cocoa, and sugar.

PARAGUAY. An interior republic of South America. Area, about 98,000 square miles. Population (estimated 1905), 631,347. Imports (1905), $4,547,515; exports, $5,086,252. Chief imports: textiles and ironwork. Chief exports: hides, gold dollars, timber, yerba, maté, tobacco, meat, quebracho extract, wood, and oranges. Chief port: Asuncion. In 1905, 460 steamers of 109,933 tons entered the port of Asuncion. There is one railway, 156 miles long. Grazing land is abundant and large herds of cattle, sheep, horses, goats, mules, asses, and pigs are a source of revenue. In 1903, 105,500,000 oranges were exported. There are valuable forests. Few mines have been exploited.

PARAGUAY. A navigable river of South America, which flows mostly through Paraguay, between which country and the Argentine Republic it forms a portion of the boundary. Length, about 1,500 miles. First-class steamers make regular communication between Asuncion and Buenos Aires.

PARANAGUA. A port of Brazil in the state of Parana. Chief export is maté or Paraguay tea.

PATRAS. A port of Greece in the northern part of the Morea, 376 miles from Malta. Population, 24,000. Exports currants, olive oil, and wine.

PAYTA. A port and coaling station in the north of Peru, 549 miles from Callao. Exports cotton, hides, and Panama hats.

PENANG. A port and coaling station in the Straits Settlements, 1,350 miles from Calcutta. Exports spices, tapioca, gutta-percha, rubber, sago, and tin.

PENNSYLVANIA. Area, 45,126 square miles. Population (1900), 6,302,115. The colored population, including Chinese, Japanese, Indians, and negroes, was 160,451; the foreign-born numbered 985,250; there were 3,204,541 males and 3,097,574 females. The estimated populations (1906) of the larger cities were: Philadelphia, 1,441,735; Pittsburg, 375,082; Allegheny, 145,240; Scranton, 118,692; Reading, 91,141. Farm area (1900), 19,371,015 acres, 13,209,183 of which were improved. The crop of maize (1907) was 45,922,000 bushels; of wheat, 30,095,000 bushels; of oats, 29,689,000 bushels; of tobacco, 40,320,000 pounds. The output of anthracite coal (1906) was valued at $131,917,694; of bituminous coal at $130,290,651; of crude petroleum at $16,596,943; of granite at $1,043,000; of slate at $3,522,149; of limestone at $4,865,130; of Portland cement at $18,598,439; of coke at $54,184,531. Pittsburg is the iron-working center. The number of manufacturing establishments (1905) was 23,495; their capital aggregated $1,995,836,988; the raw materials used were worth $1,142,942,707; and the output was valued at $1,955,551,332. The output of the more important industries was valued as follows: steel work and rolling mills, $363,773,577; blast furnaces, $107,455,267; foundry and machine work, $119,650,913; textiles, $118,431,616; railway car works, $80,449,604; malt liquors, $84,863,823. Pennsylvania produces more leather than any other state in the Union; and in 1905 the spindles in cotton mills numbered 339,924. The value of the imports at Philadelphia (1906-1907) was $79,869,942; of the exports, $94,832,480. The state had (1906) 14,624 miles of railway, 3,469 miles of which were electric.

PERNAMBUCO or **RECIFE.** A port and coaling station in Brazil. Population, 190,000. Exports cotton, sugar, carnauba wax, hides, and skins.

PERSIA. Area, 628,000 square miles. Population (estimated), 9,500,000. Imports (the year 1905-1906), $31,303,503; exports, $23,744,583. Imports (U. S., 1905-1906), $21,336; exports, $14,763. Chief imports: cottons, sugar and sweets, woolens, gold and silver, tea, iron and steel, petroleum, and cotton yarn. Chief exports: raw cotton, fish, fruits, rice, woolens and table covers, raw woolen, silk cocoons, hides and skins. Chief ports: Bender Abbas, Bushire, Lingah, and Muhamrah. In 1905-1906, 902,986 tons were entered at the above ports. There are six miles of railway. Wheat, barley, rice, fruits, silk, and opium are cultivated. Carpets, gum, and pearls are largely exported. The lack of good roads has hindered the exploitation of the minerals, which include lead, copper, tin, iron, zinc, manganese, borax, iron, ocher, coal, salt, sulphur, orpiment, alum, and naphtha. The principal centers of commerce are Tabriz, Teheran, and Ispahân.

PERU. Area, 695,733 square miles. Population, between three and four millions. Imports (1905), $48,590,727; exports, $56,543,495. Imports (U. S., 1905), $3,428,700; (1907, U. S. statistics) $6,075,739; exports (U. S., 1905), $2,562,882; (1907, U. S. statistics), $4,958,202. Chief imports: minerals and metals, cotton, wheat, woolens, coal, machinery, and timber. From the United States, breadstuffs, ironwork, and wood. Chief exports: sugar, gums, metals and minerals, wool, cotton, leather wares, cocaine, and guano. To United States, sugar and cotton. Chief ports: Callao, Mollendo, Payta, Salaverry, and the river port, Iquitos. Peru's merchant navy (1905) consisted of 4 steamers of 5,283 tons, 35 sailing vessels of 25,039 tons. In 1906, 642 vessels of 1,101,292 tons entered the port of Callao. The total length of railway in 1905 was 1,146 miles. The land is fertile only in the river valleys and table-lands, because of small rainfall. Irrigation works are being instituted. The chief crops are cotton, coffee, sugar, rice, wheat, maize, tobacco, ramie, and olives. Stock raising is pursued. Wool is the chief product. In 1905 the mineral output (chiefly by American companies) was, according to the president's report, $7,951,829. The principal minerals are silver, copper, petroleum, coal, and gold.

PHILADELPHIA. A port and coaling station on the Delaware River near its confluence with the Schuylkill River. Population (1900), 1,293,697; estimated (1905), 1,417,062. Exports cattle, grain, petroleum, tobacco, and cotton.

PHILIPPEVILLE. A port of Algeria, 395 miles from Marseilles. Exports wheat, barley, wine, cork, and esparto.

PHILIPPINE ISLANDS. Area, 127,853 square miles. Population (1903), 7,635,426. There are about 25,000 Americans and Europeans, and 100,000 Chinese. Of the native population, 223,506 were classed as uncivilized. Imports (1906), $26,403,768; exports, $32,642,892. Imports (U. S., 1907), $8,657,956; exports, $11,510,438. Chief imports: cotton manufactures, rice, iron and steel manufactures, cattle, wheat, flour, coal, and coke. Chief exports: hemp, sugar, copra, tobacco leaf, cigars, gums, and resins. Chief ports are Manila, Cebu, and Iloilo. In 1906, 8,496 vessels of 2,214,491 tons entered and 8,824 of 2,216,915 tons cleared Philippine ports. There are 190 miles of railway and 8,000 miles of telegraph lines and cable. There are five banks. The climate is healthy except in swampy districts. Agriculture is improving. The chief crops are rice, hemp, coffee, copra, indigo, tobacco, and sugar cane. The forests yield valuable timber, gums, and dyewoods. The mineral resources are as yet undeveloped. Gold, silver, lignite, platinum, copper, lead, cinnabar, galena, sulphur, petroleum, rock salt, manganese, kaolin, and gypsum are known to exist.

PIRAEUS. The chief port of Greece, 6 miles from Athens and 539 from Malta. Exports are few and unimportant. Receives imports to the value of over $15,000,000 annually.

PISAGUA. A port of Chile. Exports chiefly nitrate.

PLYMOUTH. A port and coaling station in Devonshire, England, 315 miles from London and 336 from Liverpool.

PORT ADELAIDE. A port and coaling station of South Australia, 7 miles from Adelaide, the capital. Population, 5,000. Exports wool, copper, gold, and hides.

PORT AU PRINCE. A port and the capital of Haiti, 1,367 miles from New York. Population, about 50,000. Exports coffee, cocoa, and mahogany.

PORT DARWIN. A port of South Australia. Exports gold, copper, cattle, and wool.

PORT ELIZABETH. A port of Cape Colony, Africa, on Algoa Bay, 436 miles from Cape Town. Population, 23,052. Exports wool, skins, hides, mohair, linseed, and feathers.

PORTLAND. A port and coaling station in the state of Maine, on Casco Bay, 105 miles from Boston. Population, estimated (1905), 54,330. Exports grain, meat, cheese, and apples.

PORT LOUIS. A port and coaling station of Mauritius. Population, 60,000.

PORT OF SPAIN. A port and coaling station of Trinidad, 207 miles from Barbados. Exports cocoa, sugar, and asphalt.

PORTO RICO. Area, 3,435 square miles. Population (1899), 953,243; negroes, 59,390, mulattoes, 304,352, whites, 589,426. Population (estimated 1904), 1,012,775. Of the population 63 per cent. are engaged in agriculture or fishing; 21 per cent. in domestic or personal service; 16 per cent. in manufacturing, trade, and transportation. Imports (1907), $28,901,352; exports, $25,451,984. Imports (U. S., 1907), $25,320,465; exports, $20,552,612. Chief imports (from the United States): rice, cotton goods, breadstuffs, meat, and dairy products. Chief exports: sugar, tobacco, coffee, fruits, molasses, cattle, timber, hides, rum, and straw hats. Chief ports: San Juan, Ponce, Mayaguez. Culebra, because of its good harbor, has been made a naval base. In 1905-1906, 347 vessels of 377,318 tons cleared the ports of Porto Rico in foreign trade, and 241 of 340,776 cleared in trade with the United States. Nine steamship lines visit the island. There are 200 miles of railway, 680 miles of roads, and 582 miles of telegraph. Porto Rico is very fertile. The principal products are sugar, coffee, tea, tobacco, maize, oranges, bananas, rice, and pineapples. The forests are very valuable, in which more than 500 varieties of trees grow. The only mineral worked is salt (about 10,000,000 pounds a year), although gold, silver, iron, copper, bismuth, tin, mercury, platinum, and nickel are found.

PORT SAID. A port and coaling station at the entrance to Suez Canal, Egypt, 3,248 miles from London, 3,216 from Liverpool, 1,506 from Marseilles, and 925 from Brindisi. Population, 16,560. Exports cotton and oil seeds.

PORT STANLEY. A port and coaling station of the Falkland Islands. Exports wool and frozen mutton.

PORT SUDAN. A port on the Red Sea, the terminus of the Berber Railway.

PORTUGAL. Area, 35,490 square miles. Population (1900), 5,423,132. Imports (1906), $65,222,605; exports, $33,040,167. Imports (U. S., 1905), $3,745,440. Chief imports: wheat, codfish, iron and ironwork, coal, cotton goods and yarn, cotton, sugar, machinery, hides and skins, rice, silk tissues, wool, and oil seed. Chief exports: wine, cork, fish, fruits and vegetables, cottons and yarn, copper ore, timber, olive oil, hides and skins, tobacco, potatoes, and wheat flour. Chief ports: Lisbon and Leixoes. Commercial navy, 98 steamers of 62,214 tons, 508 sailing vessels of 53,642 tons. In 1906, 11,244 vessels of 16,479,662 tons entered the ports of Portugal. The railways (December 31, 1907) were 1,675 miles in length. A large portion of the soil is waste land. The chief products of the soil are wheat, maize, rye, onions, potatoes, olives, tomatoes, oranges, and figs. The two most important products of the country are wine (1906 export, $11,401,587) and cork (1906 export, $4,554,572). Minerals are not much worked because of expensive transportation and lack of coal: but arsenic, copper, gold, lead, iron, manganese, wolframite, zinc, salt, gypsum, lime, and marble are raised or quarried.

PROGRESO. A port of Mexico, in Yucatan, 417 miles from Havana and 542 from New Orleans. Exports sisal hemp, logwood, and mahogany.

PUERTO CABELLO. A port of Venezuela, 55 miles from La Guaira. Exports coffee, cocoa, hides, and skins.

PUERTO CORTES. A port of Honduras. Exports bananas, mahogany, and rubber.

PUNTA ARENAS. (1) A port and coaling station in the Straits of Magellan, 1,442 miles from Valparaiso. Exports wool, hides, and sealskins. (2) A port of Costa Rica, in the Gulf of Nicoya, on the Pacific coast. Exports coffee, timber, and dyewoods.

QUEBEC. A port and fortified coaling station in Canada on the St. Lawrence River, 340 miles from its mouth. Population, 63,090. Exports grain and lumber.

QUEENSLAND. Area, 670,500 square miles. Population (1901), 503,266. Imports (1906), $40,393,724; exports, $61,985,844. Chief exports: gold, silver, copper, tin, coal, meat (frozen), hides, skins, tallow, wool, and sugar. Chief ports: Brisbane, Rockhampton, Mackay, and Cooktown. Registered shipping (1906), consisted of 305 vessels (99 steamers) of 23,601 tons. The tonnage of vessels which entered Brisbane in 1906 was 1,645,422. Length of government railways (1906), 31,137 miles; private railways (1905), 103 miles. Mining, agriculture, cattle and sheep farming, and fruit growing are the principal occupations. The chief crops are maize, wheat, sugar cane, hay, potatoes, sweet potatoes, bananas, oranges, coffee, cotton, pumpkins and melons, grapes for wine, pineapples, and tobacco. The wool export (1906) was 66,938,101 pounds. In 1906, 82,801,846 superficial feet of lumber were cut in sawmills. The following minerals, arranged according to value, were mined in 1906: copper, tin ore, silver, wolframite, lead, limestone, gems, and molybdenite. In 1905 the total mineral output was valued at $18,109,696.

QUEENSTOWN. See CORK.

RANGOON. A port and coaling station of Burma on a branch of the Irawadi River, 787 miles from Calcutta. Exports teak, petroleum, and rice. Population, 181,210.

REVEL. A port and coaling station of Russia on the Gulf of Finland, 200 miles from St. Petersburg. Population, 51,277. Exports corn, hemp, flax, timber, eggs, and butter.

RHODE ISLAND. Area, 1,250 square miles, about 200 of which are water. Population (1900), 428,556, of whom 9,092 were colored; 210,516 were male, 218,040 female; the foreign-born numbered 134,519, the nationalities most numerously represented being English, Irish, and French Canadian. The estimated population of the state (1906) was 490,387; of the largest cities,—Providence (the capital), 203,243; Pawtucket, 44,211; Woonsocket, 32,994; Newport, 25,559. Rhode Island is a manufacturing state. There were (1905) 1,617 establishments supported with a capital of $215,901,375; the raw materials used cost $112,872,261; the value of the output was $202,109,583. The output of the more important industries (1905) was valued as follows: worsted goods, $44,477,596; cotton goods, $30,628,843; jewelry, $14,431,756; foundry and machine work, $13,959,283; dyeing and finishing, $9,981,457; woolen goods, $8,163,167; silversmith work, $5,323,264. There were (1906) 209 miles of steam railroad and 357 miles electric. Estimated on the single track basis the length of railway (steam plus electric) was 838 miles.

RHODESIA (includes Southern, Northeastern, and Northwestern Rhodesia). Area, 435,000 square miles. Population (estimated), 1,500,636, of whom about 15,218 are Europeans. Imports, Southern Rhodesia (1906), $6,515,738; Northwestern Rhodesia (1906), $911,565. Exports, Southern Rhodesia (1906), $9,426,844; Northwestern Rhodesia (1906), $513,264. Chief exports: gold, gold concentrates, chrome ore, tungsten, hides and skins, copper ore, and zinc ore. There were in Rhodesia (1906) over 2,000 miles of railway. Rhodesia has large tracts of land suitable for agriculture and is rich in mineral deposits. The chief crops developed by Europeans are cotton, tobacco, sugar, and fruit. Cattle and sheep farming is carried on. The minerals are gold (2,601,830 ounces were produced in 1890-1907), silver (147,323 ounces in 1907), copper, blende, antimony, arsenic, wolframite, plumbago, chrome iron, diamonds, lead, and coal (115,073 tons in 1907).

RIGA. A port and coaling station on the Dwina, eight miles from the Gulf of Riga. Exports corn, hemp, lumber, eggs, and butter. Population, 195,668.

RIO DE JANEIRO. Capital, a port, and coaling station of Brazil. Harbor extends over 30 square miles and is from 30 to 70 feet deep. Population, 500,000. The greatest commercial city of South America. Exports coffee, hides, lumber, and gold.

RIO GRANDE DO SUL. A port in Brazil, nine miles from the mouth of the Rio Grande. Exports animals and hides.

ROCKHAMPTON. A port in Queensland, 43 miles from the mouth of the Fitzroy River and 355 from Brisbane. Population, 12,422. Exports wool, gold, copper, and hides.

ROSARIO. A port and coaling station in Argentina on the Parana River, 240 miles above Buenos Aires. Population, 55,000. Exports wheat, maize, linseed, wool, and hides.

ROSTOF-ON-DON. A port in southern Russia on the Don, 620 miles from Constantinople. Population, 61,256. Exports grain, wool, and tallow.

ROTTERDAM. A port and coaling station of Holland on the Nieuwe Maas, 11 miles from its mouth in the North Sea, 182 miles from London, and 300 from Newcastle. Population, 209,136. Exports provisions, manufactured goods, sugar, and cattle.

ROUMANIA. Area, 50,720 square miles. Population (1899), 5,956,690; (estimated 1907), 6,585,534. Imports (1905), $67,507,597; exports, $91,420,278. Chief imports: textiles, metals and manufactures, chemicals, colonial produce, hides and leather, oil and wax, cereals, animals and animal products. Chief exports: cereals, animals and animal products, mineral fuel, chemicals, textiles, hides, and leather. Chief ports: Braila, Constantza, Galatz, and Sulina. In 1904, the merchant navy consisted of 379 vessels (67 steamers) of 78,214 tons. In 1905, 29,696 vessels of 8,644,359 tons entered the ports of Roumania in river and ocean trade. In 1906, there were 1,984 miles of railway and 295 more miles under construction. The chief products of the soil are wheat, oats, maize, rye, potatoes, barley, plums, tobacco, grapes, flax, hemp, and beet root for sugar. Cattle, sheep, goats, and swine are raised. Coal and petroleum are the chief mineral products. There were (1901), 97,755 people employed in industries other than agriculture, mining, and commerce.

RUSSIAN EMPIRE. Area, 8,647,065 square miles. Population (1906), 149,299,300. Imports (1905), $554,809,500; exports, $327,076,500. The above figures on imports and exports represent foreign trade and trade with Finland, bullion not included, or external trade with Finland. Imports (U. S., 1906), $23,010,715; exports, $2,951,465. Chief imports to European Russia; articles of food—tea, fish, wines, ale, etc., fruits and vegetables, coffee, tobacco, rice; raw and half manufactured goods—raw cotton, raw metals, coal and coke, wool, gum and resin, leather and hides, silk and chemicals; manufactured goods—machinery, metal goods, cotton and textile goods. The chief import from the United States is cotton. Chief exports from European Russia: articles of food—corn, flour, buckwheat, eggs, dairy produce, sugar, fish and caviare, potatoes, vegetables and fruits, tobacco, meat, alcohol; raw and half manufactured goods—timber and woolen goods, naphtha, flax, oleaginous and other grains, furs and leather, hemp, bristle, hair and feathers, wool, manganese, platinum; animals—fowls and game, horses, cattle, and pigs; manufactured goods—gutta-percha, cottons, metallic goods, and woolens. Chief ports: St. Petersburg, Revel, Riga, Windau, Archangel, Odessa, Taganrog, Novorossiysk, Batum, and Vladivostok. The registered marine (1904) numbered 3,351 vessels (821 steamers) of 666,415 tons. In 1906 11,049 vessels of 10,575,000 tons cleared the ports of European Russia. There are in Russia 151,569 miles of rivers, canals, and lakes, navigable for steamers on which (1906) there were 28,636 vessels running January 1, 1907, there were 40,748 miles of railway open to traffic. In European Russia, wheat, barley, oats, millet, potatoes, sugar beets, hemp, flax, rape, and sunflower are grown. In western Siberia, cereals and dairy products are a source of income. Cotton and rice come from Russian central Asia and tea from Transcaucasia. Unrefined gold (1905, 987,813 oz.), coal (1906, 21,368,000 tons), naphtha (1905, 6,610,000 tons), crude platinum, practically the world's supply (1905, 154,471 oz.) are mined. In 1904, 2,900,000 tons of pig iron were manufactured, and 2,408,000 of iron and steel.

SAIGON. A port and coaling station in French Cochin-China on the Donoi River, 42 miles from the sea and 630 miles from Singapore. Population, 90,000. Exports rice, tobacco, indigo, pepper, and cotton.

ST. HELIER. Capital of the island of Jersey. It is a fortress, seaport, and watering place.

ST. JOHN. A port and coaling station of New Brunswick, Canada, on the Bay of Fundy at the mouth of the St. John River, 2,530 miles from Liverpool. Exports lumber, grain, and meat. Population, 47,600.

ST. JOHN'S. A port and coaling station in Newfoundland, 1,992 miles from Liverpool and 540 from Halifax, N. S. Exports fish, sealskins, oil, iron, and copper ores.

ST. MICHAEL'S or **PONTA DELGADA.** A port and coaling station in the Azores, 786 miles from Lisbon. Exports grain, fruit, and cattle. The island of St. Michael's is the largest of the Azores, 297 square miles.

ST. PAUL DE LOANDA. The capital and chief port of Angola (Portuguese), 4,956 miles from London. Exports coffee, rubber, and wax.

ST. PETERSBURG. The capital and a port of Russia at the mouth of the Neva, 390 miles from Stockholm. Population, 1,003,315. Exports grain, hemp, flax, linseed, and lumber.

ST. THOMAS. A Danish island in the West Indies. Area, 53 square miles. Population, 11,012. Exports sugar and rum.

ST. THOME. A Portuguese island in the Gulf of Guinea, near the equator and 90 miles from the island of Principe. Area, 318 square miles. Population, 37,776. The port is Anna de Chaves. Exports cocoa and coffee.

ST. VINCENT. A British island in the West Indies. Kingstown is the port and coaling station. Exports arrowroot, sugar, and cotton.

SALONICA or **SALONIKI.** A port and coaling station of Turkey on the Gulf of Salonica, 250 miles from Smyrna. Exports grain, flour, cocoons, hides, cattle, and tobacco.

SALVADOR. Area, 7,225 square miles. Population (1901), 1,006,848. Imports (1906), $1,665,475; exports, $2,610,968. Imports (U. S., 1907), $1,603,166; exports, $1,171,298. Chief imports: cottons, drugs, hardware, flour, silk goods, and yarn. Chief exports: coffee, indigo, balsam, gold and other minerals, and sugar. Chief imports (United States), breadstuffs and cotton manufactures; chief export, coffee. Principal ports are Acajutla, La Libertad, and La Union. In 1906, 349 steamers entered and cleared the ports. There are about 100 miles of railway. Chief occupation is agriculture; the chief products, coffee, indigo, balsam, sugar, and cotton. The mineral wealth includes gold, silver, copper, iron, and mercury. The mineral output in 1906 was valued at $1,296,666.

SAMARANG. A port of Java at the mouth of the Samarang River, 230 miles from Batavia. Exports coffee, sugar, indigo, and tobacco.

SAN FRANCISCO. An important port and coaling station on the Pacific coast of the United States; 4,521 miles from Yokohama. Population (1905), 364,677. In 1906-1907 vessels of 934,797 tons entered the port, and of 799,632 tons cleared. The imports amounted to $54,094,570; exports, $33,026,664.

SANTIAGO DE CUBA. Port in the east of Cuba; 630 miles from Havana. Population (1899), 327,716.

SANTO DOMINGO (including **HAITI**). Area, 18,045 square miles. Population (estimated), 416,000. Imports (1905), $3,096,263; exports, $6,896,098. Imports (U. S., 1907), $2,509,817; exports, $3,370,899. Chief imports: cotton goods, iron and steel goods, flour, rice, oil, and fish; from United States, breadstuffs and cotton goods. Chief exports: cane sugar, cocoa, leaf tobacco, bananas, and coffee. Minor exports are hides, wax, honey, various woods, and fibers; to United States, sugar, cocoa, and bananas. Chief ports: Puerto Plata, Santo Domingo, and Port au Prince; Aux Cayes in Haiti. In 1906, at eight ports, 1,538 vessels of 1,656,002 tons entered and cleared. There were (1907) 112 miles of railway in use, and 18 miles under construction. About five sixths of the total area is cultivable. Sugar growing is the principal industry. The country is rich in timber, including mahogany, satinwood, logwood, cedar, ironwood, and sabino. Many minerals are found, as iron, gold, nickel, chrome, cobalt, silver, mercury, and tin.

SAVANNAH. An important city and port of Georgia; 3,620 miles from Liverpool. Population (1906), 68,596. The exports from this port in 1906-1907 amounted to $63,039,824, chiefly cotton, cotton seed, and meal and cake of cotton seed, besides turpentine and lumber.

SERVIA. Area, 18,650 square miles. Population, (1905), 2,688,025. Imports (1905), $11,120,330; exports, $14,399,256. Chief imports: cotton goods, metals, colonial produce, agricultural produce, wool and woolen goods, machinery, apparel, hides, oil, and candles. Chief exports: animals and animal produce,

agricultural produce, hides and skins, foods and drinks, wool and woolen goods, pottery, and glass. Chief port, Belgrade. Miles of railway, 394. Servia is primarily an agricultural country. Chief crops: wheat, maize, barley, oats, hemp seed and fiber, flax seed and fiber, plums, tobacco, and grapes. Cocoons are exported. Many herds of domestic animals are raised. In 1900 there were 184,849 horses, 926,590 head of cattle, 3,061,759 sheep, 959,580 pigs, and 432,067 goats. There are large forests of beech, oak, and fir. Gold, copper, lead, zinc ore, antimony, and silver are mined. The total mineral output for 1904 was 1,802,491 tons. There are many small industries, as flour milling, brewing, sugar works, etc.

SEYCHELLES. Area of the 89 islands, 153 square miles. Population (estimated 1906), 19,237. Imports (1906, without specie), $259,637; exports, $254,297. Chief exports: vanilla, cocoanut oil, soap, guano, salt fish, tortoise shell, coffee, drugs, and cacao. Chief ports: Port Victoria and Mahé. In 1906, 68 ships of 123,189 tons entered the ports. There is a good road system, though no railways. The chief agricultural products are cocoanuts and vanilla. Rubber plants to the number of 80,000 have been set out. Mangrove bark and phosphate are found on some of the islands. Cloves, pepper, coffee, sugar cane, rice, maize, manioc, tobacco, and tropical fruits are cultivated. Sandalwood is found in the forests. Fishing is a growing industry. The Seychelles are subject to Great Britain.

SHANGHAI. Port and coaling station in China; 800 miles from Hongkong. Population (1906) 651,000. The imports during 1906 were valued at about $315,060,451; exports, $166,586,714.

SIAM. Area, 220,000 square miles. Population (estimated 1907), 6,686,846. Imports (1906), $23,652,886; exports, $34,419,205. Chief imports: cotton goods, treasure, steel, iron and machinery, gunny bags, sugar, silks, cotton yarn, kerosene, and opium. Chief exports: rice, teak, marine products, hides, pepper, stick-lac, and raw silk. Chief port, Bangkok. In 1906, 804 vessels of 746,155 tons entered Siamese ports. There are about 400 miles of railway. Rice is the chief agricultural product. Fruits, sesame, pepper, hemp, tobacco, cotton, and coffee are grown. There is a trade in salt, dried fish, and cattle. Teak is the most valuable forest product. Gold, rubies, and sapphires are among the minerals found.

SIERRA LEONE. Area, 4,000 square miles. Population (1901), 76,655. Imports (1906), $4,305,235; exports, $3,482,787. Chief exports: palm oil and kernels, kola nuts, copal, oil seeds, ginger, groundnuts, and india rubber. Chief port, Freetown. In 1906, the total tonnage, entered and cleared, was 1,684,736. There are 226½ miles of railway. Agriculture has been neglected, and the exports above mentioned are chiefly wild products.

SINGAPORE. Port and coaling station on Singapore Island, Malay Peninsula; 1,650 miles from Calcutta. The trade is to a large extent transit, and efforts are being made to enlarge the port.

SOUTH AUSTRALIA. Area, 903,690 square miles. Population (1906), 380,245. Imports (1906), $47,153,003; exports, $57,995,211. Chief exports: wool, wheat, wheat flour, and copper. Chief ports: Port Adelaide and Port Darwin. Registered shipping (1906) consisted of 308 vessels (101 steamers) of 56,994 tons. In 1906, 1,301 vessels of 2,785,199 tons entered the ports of the state. June 30, 1906, there were 1,745 miles of railway in operation. The chief products are wheat, hay, barley, oats, potatoes, wine (562,819 gallons exported 1906), currants, apples, apricots, peaches, almonds, oranges, lemons, and olives (yielding about 16,161 gallons of oil yearly). In March, 1907, the live stock consisted of 206,633 horses, 325,774 cattle, and 6,624,941 sheep. The principal minerals discovered are copper, silver, and gold. In 1906 the total mineral production was valued at $4,106,787.

SOUTH CAROLINA. Area, 30,989 square miles, 494 of which are water. Population (1900), 1,340,316, of which 782,321 were negroes; 664,895 were male, 675,421 female. The foreign-born numbered 5,528, the principal nationalities represented being Irish and German. Estimated population of the state (1906), 1,453,818; of the principal cities,—Charleston, 56,317; Columbia, 24,564; Greenville, 13,810; Spartanburg, 14,905. In 1900 there were 155,355 farms. Farm area, 13,985,014 acres, 5,775,741 of which were improved. The crop of rice (1907) amounted to 516,000 bushels; of cotton to 447,565,001 pounds (1906-1907); of tobacco to 20,070,000 pounds, value, $2,147,000. Wheat, maize, and oats are also among the chief crops. The value of the mineral output (1906), including phosphate rock, granite, gold, silver, coal products, etc., was $2,800,108. The manufacturing establishments (1905) numbered 1,399; their aggregate capital was $113,422,224; the raw materials used cost $49,968,626; and the output was valued at $79,376,262. The output of the chief industries (1905) was valued as follows: cotton goods, $49,437,044; lumber and timber products, $6,791,451; cotton seed and oil cake, $5,462,818; fertilizers, $3,637,576; planing mills, $1,478,581. The exports from Charleston (1907), the chief port, were valued at $1,082,466; the imports at $3,528,553. The state had (1905) 4,109 miles of railway, 129 of which were electric.

SOUTH DAKOTA. Area, 77,615 square miles. Population (1900), 401,570; there were 380,714 whites, 465 negroes, 166 Asiatics, and 20,225 Indians. Estimated population (1907), 485,000. The chief cities, with their populations (1905), are: Sioux Falls, 12,283; Lead, 8,052; Aberdeen, 5,841. The foreign-born number about one sixth the population. The Indian reservations include about 12,908,977 acres, or practically one fourth of the total area. The Black Hills furnish almost the only forest area to be found. The crop of wheat (1907) amounted to 32,480,000 bushels; of corn to 47,175,000 bushels; of oats to 32,728,000 bushels; of barley to 20,125,000 bushels; of flaxseed to 4,800,000 bushels. The value of the wool clip (1906) was $1,001,650. The system of irrigation now extends over about 40,000 acres, and is continually being enlarged. The output of gold (1906) was valued at $6,841,469; of silver at $101,086; of the total mineral products at $7,509,907. The aggregate capital of all the industries (1905) was $7,585,142; the cost of the raw materials used, $8,696,831; the total output was valued at $13,085,333. The output of the principal industries was valued as follows: flour and grist milling, $6,519,364; dairy work, $2,182,653; lumber and timber, $275,190. The railways comprised (1906) 3,176 miles; the telegraph lines, 2,734 miles; and the telephone lines, 10,372 miles.

SOUTHERN NIGERIA (since May 1, 1906, Lagos has been included). Area, 77,260 square miles. Population, about 6,000,000, of whom 1,076 are Europeans. Imports (1906), $15,300,582; exports, $15,315,886. Principal ports, Akassa, Brass, Old Calabar, Lagos, Wari, and Burutu. There were (1907) 187½ miles of railway. Chief products: palm oil and kernels, rubber, cotton, cocoa, coffee, gum, copal, ivory, hides, maize, yams, cassava, plantains, earthnuts, and fruits. There is practically no manufacturing. The mineral survey of 1903 showed deposits of manganese, lead, tin, lignite, and monazite.

SPAIN. Area, 190,050 square miles; including possessions, 194,783 square miles. Population (1900), 18,618,086. Imports (1906), $176,961,729; exports, $203,677,467. Imports (U. S., 1906), $28,154,658; exports, $7,032,863. Chief imports: alimentary substances (including grain, sugar, wine, etc.), cotton and cotton manufactures, drugs and chemicals, animals and animal products, machinery, stone, minerals, and pottery. Chief exports: alimentary substances, stone, minerals, glassware, pottery, metals, animals and their products, timber, and cotton manufactures. Chief ports: Barcelona, Bilbao, Cadiz, Santander, Alicante, Malaga, and Valencia. In 1906 the merchant fleet consisted of 473 steamers of 404,796 tons, and 308 sailing vessels of 42,974 tons. The same year 19,290 vessels of 17,344,980 tons entered Spanish ports, and 18,444 of 17,965,581 tons cleared. The length of railways, in 1906, was 8,280 miles. Of the soil in Spain, 79 per cent. is productive. The chief crops are wheat, barley, rye, oats, maize, and rice. In 1904 the grape crop made 389,483,116 gallons of wine juice, and the olives, 39,549,720 gallons of oil. Other products are esparto, flax, hemp, and pulse. Considerable live stock is raised. Spain is rich in minerals. Iron, coal, copper, lead, quicksilver, zinc, salt, and silver are mined. The mineral output for 1905 was $38,674,025. The Spanish fisheries yield about $3,000,000 worth of fish yearly.

STETTIN. A port of Prussia, Germany; 860 miles from London. Population (1905), 224,119. During 1905, 4,917 vessels of 1,581,906 tons entered, and 4,717 vessels of 1,602,802 tons cleared the port.

STRAITS SETTLEMENT. Area, 1,600 square miles. Population (1901), 572,249, of whom 5,058

were Europeans and Americans. Imports (1906), $192,387,800; exports, $176,340,293. The above figures on imports and exports do not include coal, supplies, or bunkers, etc., for ships, nor opium sent to Johore. Chief imports: rice, cotton goods, opium, fish, coal, tobacco, petroleum, tea, coffee, hardware, copper, copra, gambier, pepper, gum, rattans, sago, cigars, tin, coal, and tapioca. Chief exports: tin, spices, gambier, gums, tapioca and sago, rattans, and copra. Many of the chief imports are not used in the country, but are re-exported. Chief ports: Penang and Singapore. In 1906, 9,144 vessels of 9,861,369 tons entered at the ports. Length of railway open (1905), 411 miles. The articles produced in the Straits Settlement are pepper, tapioca, rice, rubber, sugar, mace, sago, gutta-percha, dyestuffs, rattans, and tobacco.

SWEDEN. Area, 172,876 square miles. Population (estimated December 31, 1906), 5,337,055. Imports (1906), $172,653,060; exports, $135,148,329. Chief imports: metal goods and machinery, minerals, corn and flour, raw textiles, colonial wares, and textile manufactures. Chief exports: timber, metals, metal goods and machinery, live animals and animal products, paper and paper manufactures. Chief ports: Gefle, Gothenburg, Luleo, Malmö, Trelleborg, and Stockholm. Sweden's mercantile marine, January 1, 1906, consisted of 2,981 vessels (1,066 steamers) of 723,089 tons. In 1905, 35,990 vessels of 9,112,829 tons entered Swedish ports. At the end of 1904 there were 7,789 miles of railway in operation. Only 8.7 per cent. of the total area is under cultivation, but 50.9 per cent. is under forest. The chief crops are oats, rye, and barley. Some flax, hemp, tobacco, and beets are grown. Live stock is raised, and cheese, condensed milk, and dairy products are among the chief exports. The mining industry is important. In 1906, iron ore (4,502,597 tons), silver and lead ore (1,938 tons), copper ore (19,655 tons), zinc ore (52,552 tons), manganese ore and sulphur pyrites, and coal (296,980 tons) were raised. The factories and shops of Sweden employ many people. There are saw mills, smelters, flour mills, sugar refineries, tobacco factories, distilleries, cotton and wool factories, etc.

SWITZERLAND. Area, 15,976 square miles. Population (estimated 1905), 3,463,609. Imports (1906), $310,838,886; exports, $220,671,892. Chief imports: silk goods, cereals, cotton goods, woolen goods, iron work, minerals, colonial produce, and animal food substances. Chief exports: silk goods, cotton goods, animal food substances, colonial produce, machinery, hides, and skins. In 1906 the length of railways was 2,969 miles. Of the total area 28 per cent. is unproductive. The chief agricultural industries are the manufacture of cheese and condensed milk. Rye, oats, and potatoes are raised for home consumption. The wine produced in 1904 was valued at $9,001,894. In 1903 there were in Switzerland 161,936 horses, 2,080,297 cattle, 219,438 sheep, 555,261 pigs, and 354,634 goats. The forests cover 3,290 square miles and are under strict government supervision. Pisiculture establishments (1906) numbered 166, and produced fry to the number of 64,915,500. Salt and cement industries are important.

SYDNEY. An important port of Australia, and capital of New South Wales; 11,700 miles from London *via* Suez. Population (1901), 487,900. The tonnage of vessels entered at Sydney during 1906 was 5,430,498.

TASMANIA. Area, 26,385 square miles. Population (1901), 172,475. Imports (1906), $387,201; exports, $390,209. Chief imports: foodstuffs, tobacco, drapery, and hardware. Chief exports: trepang, copra, pearl shell, gold, pearls, sandalwood, coffee, and rubber. Chief ports: Hobart, Launceston, Devenport, and Strahan. In 1906 vessels entered and cleared Tasmanian ports of a total tonnage of 104,983. The climate is fairly good. The soil seems suitable for tobacco, rice, sugar, tea, coffee, and rubber. Hops and large quantities of fruit are grown. Stock raising is successfully carried on. In 1905, 73,540 fine ounces of gold, 75,270 tons of silver ore, copper, iron, coal, tin, and bismuth were raised. Tasmania is a dependency of the British Empire.

TENNESSEE. Area, 42,022 square miles, 335 of which are water. Population (1900), 2,020,616, of whom 480,243 were negroes; 1,021,224 were male, 999,392 female; the foreign-born numbered 17,746. Population of the state (estimated 1906), 2,172,476; of the largest cities—Memphis, 125,018; Nashville, 84,703; Knoxville, 36,015; Chattanooga, 34,297. Farm area (1900), 20,342,058 acres, 10,245,950 of which were improved. The yield of maize (the most important crop) amounted (1907) to 78,864,000 bushels; of wheat to 7,400,000 bushels; of cotton (1906-1907) to 158,820,641 pounds; of tobacco to 37,200,000 pounds (value, $3,646,000). Oats, hay, potatoes, and peanuts are also grown. The output of coal (1906) was valued at $7,667,415; of iron ore at $1,307,433; of copper at $3,437,222; of phosphate rock at $2,147,991; of clay products to $1,620,226. There were (1905) 3,175 manufacturing establishments; their capital was $102,439,481; the materials used cost $79,351,746; the value of the output was $137,960,476. The output of some of the most important industries was valued as follows: flour and grist, $25,350,758; lumber and timber, $21,580,130; foundry and machine shop, $6,946,567; textiles, $6,895,203. Transportation facilities are provided by 3,576 miles of steam railway, 309 miles of electric railway, and the Mississippi and Tennessee rivers.

TEXAS. Area, 265,896 square miles, 3,498 of which are water. Population (1900), 3,048,710; 1,578,900 were male, 1,469,810 female; the negroes numbered 620,722, and the foreign-born population, 179,357. Estimated population (1906) of the state, 3,536,618; of the chief cities—San Antonio, 62,711; Houston, 58,132; Dallas, 52,793; Galveston, 34,355. Farm land (1900), 125,807,017 acres, 19,576,076 of which were improved. In 1907 the chief crops amounted (in bushels) as follows: oats, 9,500,000; wheat, 2,812,000; maize, 155,589,000; rice, 9,088,000; potatoes, 2,409,000. The tobacco crop (1907) amounted to 350,000 pounds; the cotton crop (1906) to 4,281,824 pounds. The live stock industry is also important. The output of coal (1906) was valued at $2,178,901; of petroleum at $6,565,578; of iron ore at $36,660; of quicksilver at $178,829; of the clay products at $1,969,598. The number of manufacturing establishments (1905) was 3,158; their capital amounted to $115,664,871; the raw materials used cost $91,603,630; and the output was valued at $150,528,389. The output of some of the principal industries was valued as follows: flour and grist, $22,083,136; cotton-seed oil and cake, $18,698,815; lumber and timber, $16,278,240; slaughtering and packing, $15,620,931; railway cars, $10,472,742; petroleum refining, $5,708,396. The imports from abroad at Galveston (1906-1907) were valued at $7,029,186; the exports to foreign countries at $237,308,494. The railways have a length of 12,058 miles; of electric railway there is 446 miles.

TOGOLAND. Area, 33,000 square miles. Population (colored), $1,000,000; Europeans (1907), 288. Imports (1906), $1,531,009; exports, $999,441. Chief imports: cottons, cotton yarn, spirits, iron and ironware, tobacco, wood, and colonial produce. Chief exports: palm kernels, palm oil, rubber, cotton, and maize. Miles of railway (1905), 104 miles. The climate is unhealthful for Europeans. Maize, yams, tapioca, ginger, and bananas are cultivated by the natives. There are plantations of palms, coffee, cocoa, kola, manihot, cotton, and tobacco. Togoland is a German possession.

TONKING. Area, 46,400 square miles. Population, about 10,000,000, 3,900 of whom are Europeans. Imports (1905), $17,507,110; exports, $6,968,370. Chief imports: metals and metal tools and machinery, yarn and tissues, and beverages. Chief export: rice. Chief port, Haiphong, at which, in 1905, 230 vessels of 159,098 tons entered, and 251 of 269,686 tons cleared. Besides rice, sugar cane, silk, cardamoms, cotton, coffee, various fruits and tobacco are cultivated. The chief exports are silk, cotton, sugar, pepper, and oils. Tonking is a French colony.

TRANSVAAL (including **SWAZILAND**). Area, 111,196 square miles. Population (1904), 1,347,227, of whom 289,952 were whites. Imports (1906), $86,018,277; exports, $132,018,303. Chief imports: machinery, haberdashery and apparel, chemicals and dynamite, animals, meat, hardware, wood and manufactures, wheat, flour and meal, boots and shoes. Chief exports: gold, diamonds, wool, horses and mules, tobacco, jewelry, skins and hides, apparel and haberdashery, machinery, and coal. The length of railway (December 31, 1905) was 2,158¾ miles. Transvaal is primarily a stock-raising country, though animal products still have to be imported. Some parts of the country are adapted to agriculture. Gold mining is extensive, 6,451,384 fine ounces being the output for 1907. The coal mined in 1906 was 2,892,404 tons, valued at $4,045,050. In June, 1907, there were 180,563 persons employed in the gold mines, and 10,914 in the collieries. In 1906 the diamonds found were valued at $7,596,865, and weighed 1,069,391.79 carats. Copper, tin, and lead are also mined.

TRIESTE. Most important seaport of Austria-Hungary; 370 miles from Vienna. Population (1907), 205,136. In 1906, 9,462 vessels of 3,082,879 tons entered, and 9,426 vessels of 3,051,251 tons cleared the port.

TRINIDAD AND TOBAGO. Total area, 1,868 square miles; Tobago, 114 square miles. Total population (1901), 273,898; Tobago, 18,750. Imports (1906), Trinidad, $15,166,684; exports, $13,959,499. These figures of imports and exports include transshipments. Chief imports: flour, textiles, rice, and machinery. Chief exports: sugar, cocoa, and asphalt. Chief port, Port of Spain. The total tonnage, entered and cleared, in 1906, at Trinidad ports, was 1,810,502 tons. Length of railway, 89 miles. In Tobago, cotton, cacao, and tobacco are being raised. In Trinidad, sugar cane, cacao, coffee, ground provisions, and cocoanuts are cultivated. There is a pitch lake in the island, from which, in 1906, 115,875 tons of asphalt were exported. Trinidad and Tobago are subjcet to Great Britain.

TRIPOLI (with **BENGHAZI**). Area, 398,900 square miles. Total population, 1,000,000; Tripoli, 600,000. Imports, $2,163,186; exports, $1,834,164. Chief ports: Tripoli and Benghazi. The total tonnage entered at Tripoli, in 1905, was 326,570 tons. There are scanty agricultural products of barley, wheat, dates, olives, oranges, and lemons. Esparto grass and sponges are exported. Cattle and sheep are bred. Part of the products of the Sudan (ivory, ostrich feathers, goat skins, etc.) are exported through Tripoli by means of the inland caravan train.

TUNIS. Area, 50,000 square miles. Population (estimated), 2,000,000. Imports (1906), $17,869,880; exports, $16,119,024. Chief imports: cotton goods, flour, machinery, hardware, wheat and grain, iron and steel works, semolina, coal, sugar, and timber. Chief exports: phosphates, barley, olive oil, oats, wheat, esparto grass, zinc ore, hides, wool, and tunny fish. Chief ports: Bizerta, Sfax, Susa, and Tunis, connected with the sea by a canal.

TURKEY. Area, 1,663,000 square miles. Population, about 41,000,000. Imports (1906), $137,069,511; exports, $85,968,256. Imports (U. S., 1905-1906), $1,265,271; exports, $2,165,323. Chief imports: cottons, sugar, grain and flour, cloth, thread, woolens, rice, petroleum, and coffee. Chief exports: raw silk and cocoons, grapes, grain and flour, mohair, figs, coffee, opium, hides and leather, and valonia. Chief ports: Constantinople and Salonica. The mercantile navy (1905) consisted of 104 steamers of 63,210 tons and 879 sailing vessels of 178,262 tons. In 1904-1905 there entered and cleared the ports of Turkey, 49,235 steamers of 44,179,542 tons, and 133,706 sailing vessels of 2,506,079 tons. In the Ottoman Empire (1907) there were 3,763 miles of railway open. The soil is for the most part very fertile, but agriculture is in a primitive condition. The principal products are tobacco, cereals, cotton, figs, nuts, almonds, grapes, olives, coffee, madder, opium, and gums. About 21,000,000 acres are under forest, but the forestry laws are not enforced, so that they are being rapidly despoiled. Fir, pine, larch, oak, cedar, and other kinds grow. Wine, beer and other spirits are manufactured. Raw silk is extensively produced. Turkey is rich in minerals which are not worked, though in 1906 some chrome, silver-lead ore, zinc, manganese ore, copper ore, antimony, borax, meerschaum, argentiferous pyrites, emery, asphalt, coal and lignite, petroleum, and salt were raised. Gold, arsenic, silver, lead, mercury, kaolin, and iron are known to exist. The weaving of fabrics and carpets is an important industry. The fisheries of the Bosporus represent about $1,250,000 annually.

UGANDA. Area, 223,500 square miles. Population (native), 4,000,000; Europeans, 400. Imports (1905-1906), $1,002,039; exports, $525,871. Capital, Mengo. Nile steamers run from Khartoom to Gondokoro on the northern frontier, and a railway from Mombasa on the coast to Kisumu on Victoria Nyanza, 584 miles distant. The chief commercial products are ivory, skins, rubber, and chillies. Other products are bananas, sesame, maize, durra, sugar cane, and tobacco. The soil is fertile and experiments are being made in the cultivation of coffee, cotton, arrowroot, cocoa, hemp, and rubber. Fibers (sansevieria and raffia) are exported. Iron, copper, and gold are found. The trade is chiefly with Great Britain, the United States, Germany, and India.

URUGUAY. Area, 72,210 square miles. Population, about 1,103,000. Imports (merchandise only, 1906), $35,626,382; exports, $34,537,692. Imports from United States (U. S. Statistics, 1906-1907), $3,412,785; exports, $3,160,891. Chief imports: raw and manufactured material, soft goods, foodstuffs, drinks, live stock, and tobacco. Chief exports: animal products, live stock, minerals, and agricultural products. Chief ports: Colonia, Maldonado, Montevideo, and Sauce. The merchant navy in 1905 consisted of 28 steamers of 13,220 tons and 72 sailing vessels of 31,062 tons. In 1906, 14,623 vessels of 11,004,328 tons entered and 14,388 of 10,854,035 tons cleared the ports. In 1906 the length of railways open was 1,217 miles. The agricultural products are wheat, maize, linseed, bird seed, barley, oats, tobacco, olives, and grapes for wine. The pastoral industry is one of the largest, 37,000,000 acres having been devoted to that purpose in 1900. In 1902 there were in the republic 7,029,078 cattle, 659,726 horses, 17,927,071 sheep, 20,689 mules, 8,830 goats, and 51,696 pigs. Gold mines are worked, and silver, copper, lead, magnesium, and lignite coal are found.

UTAH. Area, 84,990 square miles, 2,806 of which are water. Population (1900), 276,749, of whom 2,623 were negroes; the foreign-born numbered 53,777. Estimated population of the state (1906), 346,873; of Salt Lake City (the largest city), 61,202; of Ogden, 17,165. In 1906 the 27 counties comprised 21,800 farms (1,790,700 acres), with 700,396 acres under cultivation. Irrigation is extensively practised. Some of the principal crops (1907) were: hay, 740,000 tons; oats, 2,025,000 bushels; potatoes, 1,200,000 bushels; wheat, 4,637,000 bushels; maize, barley, and rye. The live stock industry is considerable; the value of the wool clip (1906) was $2,896,075. The output of gold (1906) was valued at $5,218,386; of silver at $7,738,925; of copper at $9,713,520; of lead at $6,413,640; of coal at $2,408,381. In 1905 the 606 manufacturing establishments had a capital of $26,004,011; the raw materials used cost $24,939,827; and the value of the output was $38,926,464. The output of some of the important industries was valued as follows: smelting and refining of copper (1905), $8,498,956; flour and grist milling, $2,425,791; car making and repairing, $1,886,651. There were (1907) 2,276 miles of steam, and about 150 miles of electric railway. There are no navigable streams.

VALPARAISO. An important port on the coast of Chile, and next to San Francisco the principal port on the Pacific; 881 miles west of Buenos Aires. Population (1905), 270,466.

VENEZUELA. Area, 364,000 square miles. Population (1906), 2,619,218. Imports (1905-1906), $8,990,573; exports, $16,196,424. Imports from United States (U. S. Statistics, 1907), $3,024,629; exports, $7,852,214. Chief imports: cotton drill, wheat flour, shirtings, lard, rice, and butter. Chief exports: coffee, cocoa, cattle, hides, balata (rubber), and gold. Chief ports: Venezuela, La Guaira, Maracaibo, Puerto Cabello, and Ciudad-Bolivar. The merchant fleet consists of 12 steamers and 18 sailing vessels. In 1905-1906, 966 vessels of 1,620,018 tons entered Venezuelan ports. There were, in 1906, about 540 miles of railway. The agricultural products of Venezuela, because of the topography and climate, are varied. Sugar cane, coffee, cocoa, cereals, caoutchouc, tonka beans, copaiba, and vanilla. One fifth of the population is engaged in agriculture. Live stock breeding is extensively engaged in. Gold, silver, copper, iron, sulphur, coal, asphalt, lead, kaolin, salt, petroleum, and tin are found. Asphalt and pearls are exported. There are no manufactories.

VERMONT. Area, 9,564 square miles, 440 of which are water. Population (1900), 343,641, of whom 826 were negroes. The foreign-born population (1900) numbered 44,747, the nationalities most numerously represented being Canadian French, Canadian English, and Irish. Estimated population of the state (1906), 350,373; of the largest cities—Burlington, 21,070; Rutland, 11,961; Barre, 11,028. Agriculture is the chief occupation. The farm area (1900) was 4,724,000 acres, about one half of which were improved: number of farms, 33,104. The yield of oats (1907) in bushels, 2,652,000; of maize, 1,980,000; of potatoes, 3,120,000. The chief crop is hay. Maple sugar, syrup, and apples are also important. The tobacco growth (1907) amounted to 325,000 pounds; the value of the wool (1906) was $254,024. Number of manufacturing establishments (1905), 1,699; their aggregate capital was $62,658,741; the raw material used cost $32,429,852; and the output was valued at $63,083,611. Some of the important industries are the manufacture of timber, wood pulp, flour, and woolen goods. About half the marble of the United States

comes from the Vermont quarries, first opened in 1785. The output of marble (1906) was valued at $4,576,913; of granite at $2,941,724; of slate at $1,441,330. The state had (1905) 1,063 miles of railway.

VICTORIA. Area, 87,884 square miles. Population (March 31, 1901), 1,201,341. Imports (1906), $122,639,193; exports, $140,541,441. Chief exports: gold, wool, live stock, cereals, butter, hides and skins, and meat. Chief port, Melbourne. In 1906 vessels of 4,310,914 tons entered the port of Melbourne. Miles of railway (June 30, 1906), 3,394. The chief agricultural products are wheat, oats, barley, potatoes, hay, tobacco, grapes (2,044,833 gallons of wine in 1906-1907), orchard fruits, and garden produce. In December, 1906, there were in the state 406,840 horses, 1,804,323 cattle, 12,937,440 sheep, and 220,452 pigs. In 1906-1907, 88,434,296 pounds of wool were sheared and 68,088,168 pounds of butter made. In 1906 the forests covered 4,329,417 acres, and 51,103,000 super feet of timber were sawed. Gold, coal, tin, gypsum, silver, salt, and antimony are mined. In 1906 the gold ore raised was valued at $15,943,123. There were, in 1906, 4,300 factories employing 85,229 hands. The factory output is for home consumption.

VIRGINIA. Area, 42,627 square miles. Population (1900), 1,854,184 (925,897 males, 928,287 females), including 660,722 negroes and 19,461 foreign-born. Estimated population (1906), 1,973,104 (Richmond, 87,246; Norfolk, 66,931; Newport News, 28,749; Roanoke, 24,699). Farm area (1900), 19,907,883 acres, 9,813,078 of which were improved. Crop of maize (1907) in bushels, 46,625,000; wheat, 8,188,000; oats, 2,862,000; potatoes, 4,480,000; tobacco, 74,556,000 pounds; cotton (1906), 6,932,875 pounds. Output of coal (1906), $4,183,991; granite, sandstone, and limestone, $606,343; Portland cement, $1,432,023; clay products, $1,966,078; pig iron, $8,591,000. Number of manufacturing establishments (1905), 3,187; aggregate capital, $147,989,182; cost of raw material, $83,649,149; output, $148,856,525 (1905), including flour and grist, $13,832,299; lumber and timber, $13,040,860; tobacco, $16,768,204; railway cars, $8,693,048. The miles of telegraph and telephone line numbered 12,090; miles of steam railway, 3,972; of electric railway, 481.

VLADIVOSTOK Port of Eastern Asiatic Russia; 655 miles from Nagasaki. Terminus of the Siberian railway. Population (1900) 38,000. Its harbor is one of the finest in the world.

WASHINGTON. Area, 69,127 square miles. Population (1900), 518,103 (304,178 males, 213,925 females), including 2,514 negroes and 111,364 foreign-born. The Indian reservations (18) have an area of 2,642 square miles. Estimated population (1906), 943,167 (Seattle, 200,000; both Tacoma and Spokane have each between 75,000 and 85,000). Agriculture is successfully pursued; the irrigated area is constantly increasing. Yield of wheat (1907) in bushels, 35,045,000; barley, 6,682,000; oats, 10,545,000. About 86,000 acres are devoted to fruit growing. The state has immense timber resources, and the fisheries are valuable. Output of coal (1906), $5,908,434; clay products, $1,499,884; gold, copper, silver, and iron ore are mined in small quantities. Manufacturing establishments (1905) numbered 2,751; aggregate capital, $96,952,621; cost of raw material, $66,166,165; output, $128,821,667 (1905), including lumber and timber, $49,572,512; flour and grist, $14,663,612; slaughtering and packing, 6,251,705; planing mills, $5,173,422; foundry and machine work, $3,862,279. Imports at Seattle, Tacoma, and Port Townsend (1906-1907) valued at $25,353,373; exports, $43,659,308. There were (1906) 3,313 miles of track, and more under construction. The rivers also furnish facilities for transportation.

WESTERN AUSTRALIA. Area, 975,920 square miles. Population (1901), 184,124. Imports (1906), $33,149,734; exports, $47,786,819. Chief exports: gold, timber, wool, pearls and shells, hides and skins, copper, tin, silver, sandalwood, and mallet bark for tanning. Chief ports: Albany and Freemantle. Registered shipping (December 31, 1906), 390 vessels (51 steamers) of 19,989 tons. The vessels entering Albany and Freemantle in 1906 had a tonnage of 2,319,900. There were, June 30, 1906, 1,611½ miles of railway. The chief agricultural crops are wheat, oats, barley, maize, hay, potatoes, orchard fruits, and grapes for wines. There are about 20,400,000 acres of forests. In 1906, 136,294,697 square feet of timber were cut. The live stock industry is important. In 1906 the wool export was worth $293,096. Gold is the most important mineral. In 1906, 1,794,546 ounces were mined, valued at $37,046,550. Other minerals worked are silver, copper, tin, coal, iron stone, and limestone.

WEST VIRGINIA. Area, 24,170 square miles. Population (1900), 958,800, including 43,499 negroes and 22,451 foreign-born. Estimated population (1906), 1,076,406 (Wheeling, 41,494; Parkersburg, 16,477; Charleston, 13,715). Farm area (1900), 10,654,513 acres, 5,155,532 of which were improved. Crop of wheat (1907), 4,777,000 bushels; Indian corn, 21,280,000 bushels; tobacco, 2,456,000 pounds. The wool clip (1906) was valued at $823,680. Output of coal (1906), $41,051,939; crude petroleum, $16,170,293; pig iron, $6,447,000. Number of manufacturing establishments (1905), 2,109; aggregate capital, $86,820,823; cost of raw material, $54,419,206; output, $99,040,676. The lumber industry is the most important. The state had (1905) 2,775 miles of railway, besides 157 miles of street railway.

WINDWARD ISLANDS (Grenada, St. Vincent, and St. Lucia Islands). Total area, 498 square miles. Grenada—Area, 133 square miles. Population (1906), 69,784. Imports (1906), $1,085,962; exports, $1,021,329. St. Vincent—Area, 132 square miles. Population (1907), 51,009. Imports (1906), $379,119; exports, $407,049. St. Lucia—Area, 233 square miles. Population (1906), 54,073. Imports (1906), $1,178,399; exports, $557,038. The chief imports are cottons, flour, fish, and textiles of various kinds; the chief exports, sugar, cocoa, arrowroot, and cotton. The total tonnage, entered and cleared, in 1906, was 3,038,875. The chief products of the islands are sugar, rum, cocoa, cotton, arrowroot, logwood, nutmeg and other spices, and timber.

WISCONSIN. Area, 56,066 square miles, 810 of which are water. Population (1905), 2,228,949, including 2,230 negroes and 504,942 foreign-born. Estimated population (1906), 2,260,930 (Milwaukee, 317,903; Superior, 37,643; Racine, 32,928). The state is largely agricultural. Farm area (1900), 19,862,727 acres, 11,246,972 of which were improved. Crop of maize (1907) in bushels, 46,688,000; wheat, 2,955,000; oats, 51,700,000; barley, 18,423,000; potatoes, 22,750,000; hay, 3,105,000 tons. Output of iron ore (1906), $2,033,217; zinc, $1,348,954; granite, limestone, and sandstone, $1,871,945. There were (1905) 8,558 manufacturing establishments; aggregate capital, $416,447,051; output, $411,139,681 (1905), including cheese, butter, condensed milk, $29,994,791; flour and grist products, $28,352,237; foundry and machine shop, $29,908,001; lumber, $55,605,971; liquors and malt, $28,692,340. The state has 7,733 miles of railway, 543 of which are electric.

WYOMING. Area, 97,914 square miles, 320 of which are water. Yellowstone Park covers about 3,300 square miles; the Indian Reservation, 2,742 square miles. Population (1905), 101,816, of whom 2,377 were black. Estimated population (1906), 103,673 (Cheyenne, 13,570; Laramie, 7,480). Without the extensive system of irrigation which is carried on Wyoming would be unsuitable for agricultural pursuits. The state is second to Montana in the production of wool, the value of the clip (1906) being $7,253,225. The timber resources cover about 10,000,000 acres. Output of coal (1906), $8,013,528; copper, $20,492; petroleum, $49,000. Gold and silver are produced in small amounts. Capital invested (1905) in manufacturing industries, $2,695,889; cost of raw material, $1,300.773; value of output, $3,523,260, including car making and repairing, $1,640,361; lumber and timber products, $426,433; flour and grist, $283,653; butter, $114,354. The state had (1905) 1,247 miles of railway.

YOKOHAMA. Port and coaling station in Japan; 18 miles from Tokyo. Population (1903), 326,035. During 1906, 1,062 vessels of 3,276,949 tons entered the port.

ZANZIBAR (and **PEMBA**). Total area, 1,020 square miles; Pemba, 380 square miles. Population, about 245,000. Imports (1906), $4,319,917; exports, $4,734,612. Imports (U. S., 1906), $259,655; exports, $204,800. Chief imports: piece goods, rice, ivory, groceries, grain, petroleum, and iron work. Chief exports: cloves, piece goods, copra, ivory, groceries, and grain. Chief port, Zanzibar. Seven miles of a railway being constructed from Zanzibar northward were open in 1906. Cloves, copra, and ivory are the chief products of the island. Experiments made in the cultivation of vanilla were successful. Other commercial products of the island are rubber, rubber gum, oranges, rice, manioc, sugar cane, and sorghum.

DICTIONARY OF WEIGHTS AND MEASURES.

FOREIGN AND DOMESTIC.

ACRE. A measure of land (Latin, *ager*, a field). Originally as much land as could be plowed in one day. The English statute acre consists of—

6,272,640 square inches.
43,560 square feet.
4,840 square yards.
160 square rods.
10 square chains.

Value of foreign measures compared with the acre—

	English acres.
Scotch acre	equals 1.27
Irish acre	equals 1.62
Austrian joch	equals 1.42
Baden morgen	equals 0.89
Belgium hectare	equals 2.47
Denmark töndeland	equals 1.36
France hectare	equals 2.47
France arpent	equals 0.91
Holland arpent	equals 2.10
Naples moggia	equals 0.83
Portugal geira	equals 1.43
Prussia little morgen	equals 0.63
Prussia great morgen	equals 1.40
Russia dessiatine	equals 2.70
Saxony morgen	equals 1.36
Spain fanegada	equals 1.06
Sweden tunnland	equals 1.22
Switzerland faux	equals 1.62
Switzerland arpent	equals 1.27
Tuscany saccata	equals 1.22
United States English acre	equals 1.00
Württemberg morgen	equals 2.40
Roman jugerum	equals 0.62
Greek plethron	equals 0.23

An acre is contained in a rectangular field which measures—

10	rods	× 16	rods
8	rods	× 20	rods
5	rods	× 32	rods
4	rods	× 40	rods
5	yards	× 968	yards
10	yards	× 484	yards
20	yards	× 242	yards
40	yards	× 121	yards
80	yards	× 60½	yards
70	yards	× 69½	yards
220	feet	× 198	feet
440	feet	× 99	feet
60	feet	× 726	feet
208.71	feet on a side		
110	feet	× 396	feet
120	feet	× 363	feet
240	feet	× 181½	feet

A field which measures			contains
200	feet × 108.9	feet	½ acre
100	feet × 145.2	feet	⅓ acre
100	feet × 108.9	feet	¼ acre
25	feet × 100	feet	.0574 acre
25	feet × 110	feet	.0631 acre
25	feet × 120	feet	.0688 acre
25	feet × 125	feet	.0717 acre
25	feet × 150	feet	.086 acre
2,178	square feet		.05 acre
4,356	square feet		.10 acre
6,534	square feet		.15 acre
8,712	square feet		.20 acre
10,890	square feet		.25 acre
13,068	square feet		.30 acre
15,246	square feet		.35 acre
17,424	square feet		.40 acre
19,602	square feet		.45 acre
21,780	square feet		.50 acre
32,670	square feet		.75 acre
34,848	square feet		.80 acre

A circular acre has a diameter of 235.504 feet
A circular half acre has a diameter of 166.527 feet
A circular quarter acre has a diameter of 117.752 feet
An acre contains 10 square Gunter's chains.

ALMUDE. A Portuguese measure equal to 4.422 American gallons.

ANGULAR MEASURE.

60 seconds = 1 minute
60 minutes .. = 1 degree
30 degrees .. = 1 sign
90 degrees .. = 1 quadrant
4 quadrants, or 360° .. = 1 circumference or circle

APOTHECARIES' WEIGHTS.

20 grains	=1 scruple	℈	= 20 grains
3 scruple	=1 dram	ʒ	= 60 grains
8 drams	=1 ounce	℥	= 480 grains
12 ounces	=1 pound	lb.	=5760 grains

Drugs are purchased by Avoirdupois Weight.

ARE. One hundred square meters, equal to 119.6 square yards.

ARRATEL or **LIBRA.** A Portuguese weight equal to 1.011 American pounds.

ARROBA (Dry). A weight used in Spain and Spanish countries. It is equal in

Argentine Republic	to 25.3175	American pounds
Brazil	to 32.38	American pounds
Cuba	to 25.3664	American pounds
Portugal	to 32.38	American pounds
Spain	to 25.36	American pounds
Venezuela	to 25.4024	American pounds

ARROBA (Liquid). A measure used in Cuba, Spain, and Venezuela. It is equal to 4.263 American gallons.

ARSHINE. A Russian measure equal to 28 American inches.

ARSHINE, SQUARE. A Russian measure equal to 5.44 American square feet.

AVOIRDUPOIS WEIGHT. This measure of weight is used in weighing all goods excepting the precious metals, precious stones, and apothecaries' prescription quantities.

27⅓ grains	= 1 dram	=	27⅓ grains
16 drams	= 1 ounce	=	437½ grains
16 ounces	= 1 pound	=	7000 grains
8 pounds	= 1 stone of butcher's meat		
14 pounds	= 1 ordinary stone		
25 or 28 pounds*	= 1 quarter (qr.)		
4 quarters	= 1 hundredweight (cwt.)		
20 cwt.	= 1 ton		

*In nearly all of the United States by law and by practice the hundredweight is 100 pounds and the quarter 25 pounds. In England the legal hundredweight is 112 pounds and the quarter 28 pounds.

BALE. A package most commonly of cotton, wool, or hay. A bale of cotton weighs between 400 and 500 pounds according to the season of the year; a bale of cochineal weighs 1½ hundredweight; a bale of wool, about 2½ hundredweight; a bale of caraway seeds, 3½ hundredweight; a bale of Mocha coffee, 303 pounds; a bale of thread contains 100 bolts; a bale of Rio coffee, 162 pounds.

BARIL. A measure in use in Argentine Republic and Mexico. It is equal to 20.0787 American gallons.

BARREL. A barrel of flour weighs 196 pounds; a barrel of pork or beef weighs 200 pounds; a barrel in liquid measure contains 31½ gallons; a barrel of fish in Maine is by law 200 pounds; a barrel, dry measure, in Louisiana is 3¼ bushels; a barrel of apples contains usually 2¼ bushels; a barrel of potatoes, 2½ bushels or 165 pounds.

BATMAN OF TABRIZ. A Persian weight equal to 6.49 American pounds.

BERKOVETS. A Russian weight equal to 361.12 American pounds.

BONGKAL. An East Indian weight equal to 832 American grains.

BU. A Japanese measure equal to 0.1193 American inch.

BUSHEL. A dry measure containing 8 gallons or 4 pecks. The bushel of the United States is founded on the old Winchester bushel of 2,150.42 cubic inches. But the majority of states have varying bushels by weight for different commodities. The imperial bushel of Great Britain contains 2,218.192 cubic inches and holds 80 pounds of distilled water. It was legally established in 1826. The dimensions of a bushel are: 18.5 inches inside diameter; 19.5 inches outside diameter; 8 inches deep. When heaped, the cone at the top above the rim of the measure must be not less than 6 inches high. A struck bushel is level or even with the top, as in measuring grain. It is equal to 1.24445 cubic feet. A cubic foot is .80356 of a struck bushel. A heaped bushel contains 2747.715 cubic inches; 1 bushel is equal to 9.30918 gallons; 3.5756 bushels make a barrel; 36 bushels make a chaldron.

BUTT. A wine measure equal to 126 United States

gallons. The English butt contains 110 imperial gallons. It is the same as a pipe.

BUTT, SPANISH. A wine measure used in Spain equal to 140 American gallons.

CABLE'S-LENGTH. Ships' cables of chain come in 15-fathom or 90-foot lengths. Eight of these lengths are fastened together with swivels to form a cable of 120 fathoms or 720 feet in length. This 720 feet is the ordinary use. But in navy manoeuvers a cable's-length means 100 fathoms or 600 feet, which is about one tenth of a nautical mile.

CANDY. A weight used in Bombay, India, equal to 529 American pounds. The candy of Madras is equal to 500 American pounds.

CARAT. (1) A jeweler's weight for precious stones. In the United States it is 3.2 grains; in London, 3.17; in Paris, 3.18. It is divided into 4 jeweler's grains or diamond grains. (2) A jeweler's measure of the fineness of gold. Pure gold is considered to be 24 carats fine; if an alloy of 2, 4, or 6 parts be added the gold is then called 22, 20, or 18 carats fine.

CARGA or **KIN.** A weight used in Mexico and Salvador equal to 300 American pounds.

CATTY. A Chinese weight equal to 1⅓ American pounds. The catty of Japan is slightly less, equal to 1.31 American pounds.

CENTARE. One square meter, equal to 1,550 square inches.

CENTARO. A measure used in Central America and equal to 4.2631 American gallons.

CENTIGRAM. One hundredth part of a gram, equal to 0.1543 grain.

CENTILITER. One hundredth of a liter or 10 cubic centimeters, equal to 0.6102 cubic inch or to 0.338 of a fluid ounce.

CENTIMETER. One one hundredth of a meter, equal to 0.3937 inch, rather more than one third of an inch.

CENTNER. A weight used in

Bremen and Brunswick	equal to 117.5 American pounds
Denmark and Norway	equal to 110.11 American pounds
Prussia	equal to 113.44 American pounds
Sweden	equal to 99.7 American pounds
Vienna	equal to 123.5 American pounds

CHAIN. (1) Gunter's chain is 66 feet long and is made up of 100 links of 7.92 inches each. It contains 22 yards or 4 rods of 5½ yards each. An acre is composed of 100,000 square links. (2) The engineer's chain now most commonly used in the United States is 100 feet long and its links are each one foot.

CHALDRON. An English measure for coals, etc., consisting of 36 bushels or 25½ hundredweight; or, commonly, 32 heaped bushels. The weight varies in United States ports, but is usually 26¼ hundredweight.

CHETVERT. A Russian measure equal to 5.7748 American bushels.

CHIH. A Chinese measure equal to 14 American inches.

CORD. A cord of wood contains 128 cubic feet and is usually piled 4 feet wide, 4 feet high, and 8 feet long.

CUADRA. A measure used in Argentine Republic and equal to 4.2 American acres.

CUBIC OR SOLID MEASURE.

1728 cubic inches	= 1 cubic foot.
27 cubic feet	= 1 cubic yard.
40 do. of rough, or 50 do. of hewn timber	= 1 ton or load.
42 cubic feet of timber	= 1 shipping ton.
108 cubic feet	= 1 stack of wood.
128 cubic feet	= 1 cord of wood.
40 cubic feet	= 1 ton shipping.

CUBIT. A measure originally derived from the length of the forearm. The royal Egyptian cubit used in building the pyramids measured 20.64 English inches; the Roman cubit contained 1½ Roman feet or 17.4 English inches; high authorities place the length of the cubit of the Bible at from 19 to 26 inches. The ordinary cubit is spoken of as 18 inches, and the sacred cubit as 22 inches.

CWT. (HUNDREDWEIGHT). An English weight equal to 112 American pounds. The United States hundredweight and that of Canada are each of 100 pounds.

DAY. The natural, solar, or astronomical day is the measure of the time elapsing between two consecutive returns of the same terrestrial meridian to the sun. The civil day recognized in the United States extends from midnight to midnight. The astronomical or nautical day extends from noon to noon. The civil day contains 24 hours. A sidereal day is 23 hours, 56 minutes, 4.099 seconds, or 3 minutes, 55.901 seconds less than a mean solar day.

DECIGRAM. One tenth gram, equal to 1.5432 grains.

DECILITER. One tenth of a liter or one tenth of a cubic decimeter, equal to 6.1022 cubic inches or to 0.845 gill.

DECIMETER. One tenth of a meter, equal to 3.937 inches.

DEGREE. In angular measure a degree is the 360th part of a circumference. A degree of longtitude measured on the equator is 69.16 statute miles; a degree of latitude at the equator is 68.702 statute miles; and at the poles, 69.396 statute miles. A degree contains 60 minutes or 3,600 seconds.

DEKAGRAM. Ten grams, equal to 0.3527 ounce.

DEKALITER. Ten liters or 10 cubic decimeters, equal to 9.08 dry quarts or to 2.6417 gallons.

DEKAMETER. Ten meters, equal to 393.7 inches, or 32.8 feet, or 10.9 yards.

DESSIATINE. A Russian measure equal to 2.6997 American acres. The Spanish dessiatine is equal to 1.599 American bushels.

DOZEN. A collection of 12 units or similar things. **BAKER'S DOZEN** consists of 13. Brewer says it was good measure given by bakers to secure themselves against severe penalties for light weight. This is sometimes called **LONG DOZEN** or **DEVIL'S DOZEN.**

DRAM or **DRACHM.** An apothecaries' dram is one eighth of a pound or 60 grains. The avoirdupois dram is one sixteenth of an ounce or 27 11/32 grains.

DRAM, FLUID. One eighth of a fluid ounce; about a teaspoonful. In England it contains 54.8 grains of water and equals 3.55 cubic centimeters; in the United States it contains 57.1 grains and measures 3.70 cubic centimeters.

DRY OR CORN MEASURE.

4 quarts	= 1 gallon
2 gallons	= 1 peck
4 pecks	= 1 bushel
3 bushels (four of corn)	= 1 sack
12 sacks	= 1 chaldron
8 bushels, or two sacks	= 1 quarter
15 quarters	= 1 load

ELL. A cloth measure still used in England. An English ell is 1¼ yards or 45 inches; a Scotch ell was 37 inches; the Flemish ell varied, but was about 27.4 inches; a French ell was 47.245 inches. The English ell is made up of 5 quarters.

FANEGA (Dry). A measure used in

Central America	equal to 1.5745 American bushels
Chile	equal to 2.575 American bushels
Cuba	equal to 1.599 American bushels
Mexico	equal to 1.54728 American bushels

FANEGA (Liquid). A measure of Spain equal to 16 American gallons.

FIRKIN. A measure, usually of butter, which weighs 56 pounds by English law. The measure is really the fourth part of a barrel and varies greatly. A firkin of ale measures 9 gallons.

FLUID MEASURE. *Marked.*

60 minims ℥	= 1 fluid dram	*f 3*
8 drams	= 1 ounce	*f 3*
16 ounces	= 1 pint	*O*
8 pints	= 1 gallon	*gal.*

FODDER or **FOTHER.** An old unit of weight of lime, lead, and some other substances. A fother of lead varies from 19½ to 22½ hundredweight of 120 pounds. In American lead mines the word fother is often used for a short ton (2,000 pounds).

FOOT. Originally the length of a man's foot. Contains 12 inches and equals 30.48 centimeters.

3	feet	equals 1 yard
3	feet, 3⅜ in.	equals 1 meter (nearly)
6	feet	equals 1 fathom
16½	feet	equals 1 rod
66	feet	equals 1 Gunter's surveying chain
5,280	feet	equals 1 mile
6,080	feet	equals 1 nautical mile

FRAIL. A Spanish measure of raisins containing 32, 50, or 75 American pounds.

FRASCO. In Argentine Republic a measure equal to 2.5096 American quarts; and in Mexico equal to 2.5 American quarts.

FUNT. A Russian weight equal to 0.9028 American pounds.

FURLONG. Originally the length of a furrow. A measure of length equal to one eighth of a mile, or 40 rods, or 220 yards, or 660 feet, or 7,920 inches. Also equal to 201.17 meters.

GALLON. A measure of capacity for both liquid and dry measures, containing 4 quarts. **LEGAL GALLON OF THE UNITED STATES.** The old wine gallon, containing 231 cubic inches, and equal to a cylinder 7 inches in diameter and 6 inches high. It contains 8.3388822 avoirdupois pounds of distilled water. **IMPERIAL GALLON OF GREAT BRITAIN.** Contains 277.274 cubic inches. The United States gallon is equal to 3.7853 liters.

GARNICE. A measure of Russian Poland equal to 0.88 American gallon.

GILL. A liquid measure equal to ¼ of a pint. The United States gill contains 7.217 cubic inches or 118.35 cubic centimeters. The English imperial gill contains 8.665 cubic inches, or 142 cubic centimeters, or 5 ounces avoirdupois of distilled water, and is one fifth larger than the United States gill.

GRAIN. Originally the weight of a plump grain of wheat.

5,760	grains	equals 1	pound troy
7,000	grains	equals 1	pound avoirdupois
480	grains	equals 1	ounce troy
437½	grains	equals 1	ounce avoirdupois
24	grains	equals 1	pennyweight
20	grains	equals 1	scruple

GRAM. The weight of a cubic centimeter of water at greatest density. Equal to 15.432 grains. A nickel weighs about 5 grams.

GROSS. A measure of 12 dozen or 144 units. Never used in the plural. It is sometimes called a **GREAT GROSS.** A **SMALL GROSS** is 120.

HAIR'S-BREADTH. Estimated at .02083 of an inch (a 48th part).

HAND. A measure of length equal to four inches. Used chiefly in indicating the height of horses. A horse which stands 14 hands high is measured at the fore shoulder and stands about 56 inches or nearly 5 feet high.

HECTARE. Ten thousand square meters, equal to 2.471 acres.

HECTOGRAM. One hundred grams, or 3.5274 ounces avoirdupois.

HECTOLITER. One hundred liters or one tenth of a cubic meter, equal to 2 bushels, 3.35 pecks, or to 26.417 wine gallons.

HECTOMETER. One hundred meters, equal to 328 feet 1 inch.

HOGSHEAD. A liquid measure containing 63 United States gallons or 52½ imperial gallons. A hogshead is one half of a butt, a pipe, or puncheon.

HOUR. The twenty-fourth part of a civil day, or the twelfth part of a natural day or night. Equal to 60 minutes or 3,600 seconds.

HUNDREDWEICHT. A measure of weight equal, in the United States, to 100 pounds; in England, to 112 pounds. English weight is called long weight. A hundredweight of the United States standard is legal in England for many articles. Written **CWT.** It is one twentieth of a ton and contains 4 quarters.

INCH. The twelfth part of a foot. Formerly divided into 12 lines, and by an old statute into 3 barleycorns. In rough work it is divided into halves, quarters, sixteenths, and thirty-seconds. Gunnery and other processes require division into thousandths, and gauge makers into ten thousandths. The English inch is equal to 2.54 centimeters. The Scotch inch was a little longer than the English. A miner's inch is the quantity of water which passes through an inch square opening in 24 hours under pressure of 6 inches.

JOCH. A measure of Austria-Hungary equal to 1.422 American acres.

KEG. A small cask varying in capacity from 5 to 10 gallons. A keg of powder weighs 25 pounds. A keg of nails weighs 100 pounds.

KEN. A Japanese measure nearly equal to 6 American feet.

KILDERKIN. An old English measure, originally the eighth part of a tun or vat. It contained 2 firkins or one half a barrel. A kilderkin of soap or of ale was 18 United States gallons; of butter, one hundredweight net.

KILOGRAM or KILO. One thousand grams, equal to 2.2046 pounds. For rough estimates a kilo is about two and one fifth pounds.

KILOLITER or STERE. One thousand liters or one cubic meter, equal to 1.308 cubic yards or to 264.18 gallons in wine measure.

KILOMETER. One thousand meters, equal to 0.62137 mile or 3,280 feet 10 inches. Roughly speaking a kilometer is about three fifths of a mile. To convert kilometers to miles, multiply the number of kilometers by 0.62137. To convert miles to kilometers, divide the miles by 0.62137.

KLAFTER. A Russian measure equal to 216 American cubic feet.

KNOT. A knot is a measure of speed and not of distance. When a vessel travels one knot, it travels one nautical mile in one hour; 20 knots, 20 nautical miles in one hour.

KOKU. A Japanese measure equal to 4.9629 American bushels.

KORREC. A Russian measure equal to 3.5 American bushels.

KWAN. A Japanese weight equal to 8.267 American pounds.

LAST. A measure equal in

Belgium and Holland	to	85.134 American bushels
England (for dry malt)	to	82.52 American bushels
Germany (2 metric tons)	to	4,480 American pounds
Prussia	to	112.29 American bushels
Northern Europe	to	95 American bushels
Spain (for salt)	to	4,760 American pounds

LI. A Chinese measure equal to 2,115 American feet.

LIBRA or POUND. A weight equal in

Argentine Republic	to	1.0127 American pounds
Central America	to	1.043 American pounds
Chile	to	1.014 American pounds
Cuba	to	1.0161 American pounds
Mexico	to	1.01465 American pounds
Peru	to	1.0143 American pounds
Portugal	to	1.011 American pounds
Spain	to	1.0144 American pounds
Venezuela	to	1.0161 American pounds

LINE. A unit of length, the twelfth part of an inch; now almost obsolete.

LINK. The one hundredth part of a Gunter's surveyor's chain and equal to 7.92 inches. Engineers use a 100-foot chain wherein the link is one foot.

LITER. One cubic decimeter, the measure of one kilogram of water at greatest density, equal to 0.908 quart dry measure or to 1.0567 quarts wine measure. For rough estimates, a liter is about a quart.

LIVRE or POUND. A weight used in Greece equal to 1.1 American pounds.

LIQUID MEASURE.

	Pts.	Qts.	Gals.
Four gills	1	...	...
Quart	2	1	...
Gallon	8	4	1
Firkin or quarter barrel	72	36	9
Kilderkin or half barrel	144	72	18
Barrel	288	144	36
Hogshead of ale (1½ barrel)	432	216	54
Puncheon	800	400	100-130
Butt of ale (3 barrels	864	432	108

Pipe of Port or Masdeu	= 115	Gallons.
" Teneriffe	= 109	"
" Marsala	= 93	"
" Madeira and Cape	= 92	"
Butt of Lisbon and Bucellas	= 117	"
" Sherry and Tent	= 108	"
Aum of Hock and Rhenish	= 30	"
Hogshead of Claret	= 46	"

LOAD. A measure used in England for timber, equal to 50 cubic feet of square timber, or 40 cubic feet of unhewn timber, or 600 superficial feet of 1-inch planks (boards).

LONG MEASURE.

	In.	Ft.	Yd.	Rd.	Ch.	Fur.
Palm	3					
Hand	4					
Foot	12					
Yard	36	3				
Rod, pole, or perch	198	16½	5½			
Chain	792	66	22	4	1	
Furlong	7,920	660	220	40	10	
Mile	63,360	5,280	1,760	320	80	8

PARTICULAR MEASURES OF LENGTH.

12 lines = 1 inch.
3 inches = 1 palm.
4 inches = 1 hand.
2 feet 6 inches = 1 military pace.
5 feet = 1 geometrical pace.
6 feet = 1 fathom.
240 yards = 1 cable's length.
69⅛ miles (one degree) = 60 nautical knots or geographical miles.
3 miles = 1 league.

Inches.	Feet.	Yards.	Rods.	Miles.
12 equals	1			
36 equals	3 equals	1		
198 equals	16½ equals	5½ equals	1	
63,360 equals	5,280 equals	1,760 equals	320 equals	1

MARC. A weight of Bolivia equal to 0.507 American pounds.

MAUND. An East Indian weight equal to 82⅔ American pounds.

METER. Equal to 39.37 inches, or 1 yard 3.37 inches, or 3.281 feet. To convert meters to feet, multiply the meters by 3.281; to convert feet to meters, divide the feet by 3.281. The meter is nearly the ten millionth part of the estimated distance on a meridian between the equator and the pole.

MIL. A measure of Denmark equal to 4.68 American miles.

MILE. The Roman mile (*mille passuum*) consisted of 1,000 paces of 5 feet each. The Roman foot consisted of only 11.62 or 11.65 English inches; so the Roman mile was less than the present mile by 142 or 144 yards. The present English statute mile was defined by an act passed in the thirty-fifth year of the reign of Elizabeth as "8 furlongs of 40 perches, or 16½ feet each," which is equal to 1,760 yards of 3 feet each.

A geographical or nautical mile or a sea mile is

(*a*) the length of a minute of latitude at any point, or

(*b*) the average length of a minute of latitude, equal to 6,082.66 feet, or

(*c*) the length of a minute of longitude on the equator, equal to 6,087.15 feet. The length of a standard geographic mile, according to the United States Coast Survey, is the length of a minute of latitude of a sphere having the same surface as that of the earth, equal to 6,080.27 feet.

The geographical mile of the British admiralty is 6,080 feet.

In the United States a geographical or nautical mile is regarded as equal to 1.15155 statute mile or 1,853.24 meters.

	English miles.
English geographical mile	equals 1.153
German geographical mile	equals 4.611
Tuscan mile	equals 1.027
Scotch mile	equals 1.127
Irish mile	equals 1.273
German short mile	equals 3.897
Prussian mile	equals 4.680
Danish mile	equals 4.684
Hungarian mile	equals 5.178
Swiss mile	equals 5.201
German long mile	equals 5,753
Hanoverian mile	equals 6.568
Swedish mile	equals 6.648
Kilometer	equals 0.621
29 kilometers (nearly)	equals 18.

MILLIER, or **TONNEAU,** *or* **METRIC TON.** One million grams, equal to 2,204.6 pounds.

MILLIGRAM. One thousandth part of a gram, equal to 0.0154 grain.

MILLILITER. One thousandth part of a liter or one cubic centimeter, equal to 0.061 cubic inch or to 0.27 fluid dram.

MILLIMETER. One thousandth part of a meter, equal to 0.0394 inch.

MINIM. The lowest unit of measurement in apothecaries' liquid measure. A minim bears the same relation to the fluid units that a grain does to the solid units. There are 60 minims in a fluid dram, 480 minims in a fluid ounce. A minim is generally regarded as being equal to a drop.

MINUTE. (1) In angular measure, the sixtieth part of a degree—60 seconds. (2) The sixtieth part of an hour—60 seconds.

MONTH. A solar month is one twelfth part of a solar year, and contains 30 days, 10 hours, 29 minutes, 4 seconds. The interval from new moon to new moon is called a lunar, synodical, or illuminative month and has a mean value of 29.530589 days or 29 days, 12 hours, 44 minutes, and 2.7 seconds. The calendar months are January, 31; February, 28 or 29; March, 31; April, 30; May, 31; June, 30; July, 31; August, 31; September, 30; October, 31; November, 30; and December, 31.

MORGEN. A measure of Prussia equal to 0.63 American acre.

MYRIAGRAM. Ten thousand grams, equal to 22.046 pounds.

MYRIAMETER. Ten thousand meters, equal to 6.2137 statute miles.

NAIL. In cloth measure a nail is 2¼ inches or $\frac{1}{16}$ of a yard.

OKE. A weight equal in

Egypt	to	2.7225	American pounds
Greece	to	2.84	American pounds
Hungary	to	3.0817	American pounds
Turkey	to	2.82838	American pounds
Hungary and Wallachia	to	2.5	American pints
China, Japan, and Sumatra	to	133⅓	American pounds
Philippine Islands	to	137.9	American pounds

OUNCE. A weight; one twelfth of a pound troy; one sixteenth of a pound avoirdupois. The troy ounce contains 480 grains; the avoirdupois ounce, 437½ grains.

OUNCE, FLUID. The British fluid ounce is equal to the bulk of 437.5 grains (an avoirdupois ounce) of distilled water at 62° Fahr.; the United States fluid ounce is $\frac{1}{128}$ of a gallon and contains 456.033 grains of distilled water at 62° Fahr. The British fluid ounce is equal to 28.4 cubic centimeters; the United States fluid ounce, to 29.57 cubic centimeters. A fluid ounce is $\frac{1}{20}$ of a pint.

PALM. A measure of length equal to either the width of the hand or to 3 and, sometimes, 4 inches. The same as hand.

PAPER, SIZES OF.

FOLDED.

Billet Note	6 x 8	Letter	10 x 16
Octavo Note	7 x 9	Commercial Letter	11 x 17
Commercial Note	8 x 10	Packet Post	11½ x 18
Packet Note	9 x 11	Foolscap	12½ x 16
Bath Note	8½ x 14		

COMMON SIZES OF FLAT PAPER.

Name.	Size.	Name.	Size.
Flat Letter	10 x 16	Medium	18 x 23
Small Cap	13 x 16	Double Small Cap	16 x 26
Flat Cap	14 x 17	Royal	19 x 24
Demy	16 x 21	Double Cap	17 x 28
Folio	17 x 22		

SIZES OF NEWSPAPERS.

Term.		Size.
Five-column	Folio	20 x 26 inches
Six-column	Folio	22 x 31 inches
Six-column	Folio, extra margin	22 x 32 inches
Seven-column	Folio	24 x 35 inches
Seven-column	Folio, extra margin	24 x 36 inches
Eight-column	Folio	26 x 40 inches
Nine-column	Folio	23 x 44 inches
Four-column	Quarto	22 x 31 inches
Five-column	Quarto	26 x 40 inches
Six-column	Quarto	30 x 44 inches
Seven-column	Quarto	35 x 48 inches

PECK. The fourth part of a bushel, or 8 quarts, used in dry measure. The United States peck contains 537.6 cubic inches and is the fourth part of a Winchester bushel. The British imperial peck contains 2 gallons or 554.548 cubic inches.

PENNYWEIGHT. Originally the weight of the old Anglo-Norman silver penny—22½ grains. It is now reckoned in apothecaries' weight and in jeweler's weight at 24 grains or one twentieth of a troy ounce. Written dwt.

WEIGHTS AND MEASURES OF THE PHILIPPINES.

1 pulgada (12 linea) equals .927 inch.
1 pie equals 11.125 inches.
1 vara equals 33.375 inches.
1 gantah equals .8796 gallon.
1 caban equals 21.991 gallons.
1 libra (16 onzo) equals 1.0144 lb. av.
1 arroba equals 25.360 lb. av.
1 catty (16 tael) equals 1.394 lb. av.
1 pecul (100 catty) equals 139.482 lb. av.

PIE. A measure equal in Argentine Republic to 0.9478 American foot, and in Spain to 0.91407 American foot.

PIG. A unit of weight for lead, equal to 301 pounds.

PIK. A measure in Turkey equal to 27.9 American inches.

PINT. A measure equal to one half quart. The United States, or old wine pint, contains 28.875 cubic inches; the English imperial pint, 34.65925 cubic inches; the old customary ale pint, 35.25 cubic inches; and the old Scotch pint, about 3 old ale pints or 105 cubic inches.

PIPE. A measure of wine varying according to the sort of wine. Ordinarily a pipe is 105 imperial or 126 United States gallons. Two pipes of 105 imperial gallons or 210 imperial gallons make a tun.

POINT. A measure or unit in navigation equal to one eighth of a right angle or 11¼°. It is the angle between adjacent points of the compass. This is the term used when saying "to bring the ship up half a point."

POINT. A measure in typography used to regulate and define the bodies of type. A point is about one seventy-second of an inch. This method of measuring the height of type was originated in 1737 by Fournier the younger, a type founder of Paris. The French measure is larger than that which the United States Type Founders' Association adopted in 1883. The latter felt that the French standard would cause too great a disturbance in the thoroughly established system of the United States. The following table, showing the face of the type up to 12 point, will give the old name and the new point size of type commonly used:—

Thus 8-point type means that the body of the type stands eight seventy-seconds of an inch or one ninth of an inch high. The face of a type is not always the same height as the body. Twelve points, or twelve seventy-seconds of an inch, equal one em pica. Hence, 6 pica ems make about one inch.

Points.	Name of Type.	
3	Excelsior.	
3½	Brilliant.	
4	Semibrevier.	
4½	Diamond.	abcdefghijklmnopqrstuvwxyz
5	Pearl	abcdefghijklmnopqrstuvwxyz
5½	Agate.	abcdefghijklmnopqrstuvwxyz
6	Nonpareil.	abcdefghijklmnopqrstuvw
7	Minion.	abcdefghijklmnopqrstuvwxyz
8	Brevier.	abcdefghijklmnopqrstuvwxyz
9	Bourgeois.	abcdefghijklmnopqrstuvwxyz
10	Long primer.	abcdefghijklmnopqrstuvwx
11	Small pica.	abcdefghijklmnopqrstuv
12	Pica.	abcdefghijklmnopqrst
14	English.	abcdefghijklmnopq
16	Two-line brevier.	
18	Great primer.	
20	Paragon.	
22	Two-line small pica.	
24	Two-line pica.	
28	Two-line English.	
32	Four-line brevier.	
36	Three-line pica.	
40	Double paragon.	
44	Four-line small pica	
48	Four-line pica.	

POOD. A weight in Russia equal to 36.112 American pounds.

POUND, AVOIRDUPOIS. Composed of 7,000 grains. A cubic inch of water weighs 252.458 grains and this weight determines the grain. An avoirdupois pound is 1.21528 of a troy pound.

POUND, TROY. Composed of 5,760 grains. A troy pound is .82286 of an avoirdupois pound.

PUNCHEON. A cask, containing from 72 to 126 gallons.

PUND. A weight in Denmark and Sweden equal to 1.102 American pounds.

QUART. The fourth part of a gallon.

The United States liquid quart	equals 0.9468 liter
The United States dry quart	equals 1.1017 liters
The English imperial quart	equals 1.1359 liters
The Scotch quart	equals 3.398 liters

QUARTER. In cloth measure is a quarter of a yard, or 4 nails. Five quarters make an English ell.

QUARTER. A measure in Great Britain equal to 8.252 bushels. For measuring coal the use in London is 36 bushels.

QUARTER. A measure of weight in the United States equal to 25 pounds; in England, to 28 pounds. It is one quarter of a hundredweight. Used chiefly in weighing grain.

QUINTAL. A weight equal in

Argentine Republic	to 101.42 American pounds
Brazil	to 130.06 American pounds
Castile, Mexico, Chile, and Peru	to 101.41 American pounds
Greece	to 123.3 American pounds

In ordinary commercial use in the United States and Canada a quintal of fish (usually cod) weighs 100 pounds.

QUINTAL. One hundred thousand grams, equal to 220.46 pounds.

QUIRE. A measure of paper consisting of 24 sheets; the twentieth part of a ream.

REAM. A quantity of paper consisting of 20 quires of 24 sheets each for writing paper—480 sheets in all. Some drawing paper reams are from 472 to 500 sheets; and a printer's ream contains 516 sheets or 1½ quires above the ordinary to allow for waste in printing.

ROD. A measure of length composed of 5½ yards, or 16½ feet, or 198 inches. It is also called a perch or pole.

40 rods	equals 1 furlong
320 rods	equals 1 mile

ROD, CUBIC. The usual standard for measuring brick work; sometimes spoken of as a "perch of masonry." It is generally taken at 25 cubic feet, but sometimes at 22; though a cubic rod or perch contains 24¾ cubic feet. This is calculated as being 16½ feet long by 1½ feet by 1 foot. It is being replaced by the cubic yard.

SAGENE. A Russian measure equal to 7 American feet.

SCORE. A measure of 20 units; used as an exact measure only in the singular, though the general expression "scores of writers" is used. Score is derived from an Anglo-Saxon word to cut; and when tally was kept by cutting notches on a stick, the twentieth was scored or cut in deeper than the others. It was *the* score.

SCRUPLE. Used now only in apothecaries' weight. It is one third of a dram and is made up of 20 grains, equal to 1.296 grams.

SE. A Japanese measure equal to 0.02451 American acre.

SECOND. (1) In angular measure the sixtieth part of a minute. (2) The sixtieth part of a minute.

SEER. An East Indian weight equal to 1 pound and 13 ounces (American).

SHAKU. A Japanese measure equal to 11.9305 American inches.

SHO. A Japanese measure equal to 1.6 American quarts.

SHOEMAKER'S SIZES. Number 1 is 4.125 inches and every succeeding number is one third of an inch. There are 28 numbers in all, arranged in two series: from 1 to 13 and from 1 to 15.

SPAN. A measure of length equal to 9 inches or half a cubit. It was originally the distance between the tip of the thumb and of the little finger when outstretched.

SQUARE. An architect's measure of 100 square feet.

SQUARE OR SURFACE MEASURE.

	In.	Ft.	Yds.	Pls.	Ch.	R.
Square foot	144	1				
Square yard	1,296	9	1			
Rod, pole, or perch	39,204	272¼	30¼	1		
Square chain	627,264	4,356	484	16	1	
Rood	1,568,160	10,890	1,210	40	2½	1
Acre	6,272,640	43,560	4,840	160	10	4

A square mile contains 640 acres, 2,560 roods, 6,400 chains, 102,400 rods, poles, or perches, or 3,097,600 square yards.

STANDARD. In St. Petersburg this is used as a lumber measure equal to 165 American cubic feet.

STERE. See KILOLITER.

STONE. A British weight equal to 14 pounds avoirdupois.

SUN. A Japanese measure equal to 1.193 American inches.

TAN. A Japanese measure equal to 0.25 American acre.

MEASURE OF TIME.

60 seconds	= 1 minute.
60 minutes	= 1 hour.
24 hours	= 1 day.
7 days	= 1 week.
28 days	= 1 lunar month.
28, 29, 30, or 31 days	= 1 calendar month.
12 calendar months	= 1 year.
365 days	= 1 common year.
366 days	= 1 leap year.

STANDARD TIME. Standard time was introduced, first by railroads, in 1883. The United States extends between 65° and 125° west longitude. This space of 60° is divided into 4 time sections of 15° each, exactly equivalent to one hour.

Eastern Standard time includes all of the territory between the Atlantic coast and an irregular line drawn from Detroit to Charleston, S. C.

Central Standard time extends from the last named line to an irregular line drawn from Bismarck, N. D., to the mouth of the Rio Grande.

Mountain Standard time extends from the last named line to (nearly) the western borders of Idaho, Utah, and Arizona.

Pacific Standard time is used in the rest of the country to the Pacific coast.

The difference of time in these sections as one passes from east to west through them is exactly one hour. If a passenger on a train starts from New York City at 12 o'clock noon (Eastern time), his watch, when he arrives at Chicago (Central time), will be one hour fast, for it will be only 11 a.m. there; at Denver his watch will be two hours fast and will show 12 noon when it is only 10 a.m. there. This difference of time was noted markedly in the east during the Democratic Convention at Denver in July, 1908, when it was 10 o'clock at night in New York and Boston when the convention meeting assembled at Denver at 8 o'clock (Mountain time). At San Francisco our traveler's watch would show 12 noon when it is only 9 a.m. (Pacific time).

Standard time at Boston is 16 minutes slower than true Boston time; it is 4 minutes slower at New York, 8 minutes faster at Washington, 19 minutes faster at Charleston, S. C., 28 minutes slower at Detroit, 18 minutes faster at Kansas City, 10 minutes slower at Chicago, 1 minute faster at St. Louis, 28 minutes faster at Salt Lake City, and 10 minutes faster at San Francisco.

BELL TIME ON SHIPBOARD.

Time, A. M.		Time, A. M.		Time, A. M.	
1 Bell,	12.30	1 Bell,	4.30	1 Bell,	8.30
2 Bells,	1.00	2 Bells,	5.00	2 Bells,	9.00
3 "	1.30	3 "	5.30	3 "	9.30
4 "	2.00	4 "	6.00	4 "	10.00
5 "	2.30	5 "	6.30	5 "	10.30
6 "	3.00	6 "	7.00	6 "	11.00
7 "	3.30	7 "	7.30	7 "	11.30
8 "	4.00	8 "	8.00	8 "	Noon
Time, P. M.		**Time, P. M.**		**Time, P. M.**	
1 Bell,	12.30	1 Bell,	4.30	1 Bell,	8.30
2 Bells,	1.00	2 Bells,	5.00	2 Bells,	9.00
3 "	1.30	3 "	5.30	3 "	9.30
4 "	2.00	4 "	6.00	4 "	10.00
5 "	2.30	1 Bell,	6.30	5 "	10.30
6 "	3.00	2 Bells,	7.00	6 "	11.00
7 "	3.30	3 "	7.30	7 "	11.30
8 "	4.00	4 "	8.00	8 "	Midnight

On shipboard, for purpose of discipline and to divide the watch fairly, the crew is mustered in two divisions: the Starboard (right side, looking toward the head) and the Port (left). The day commences at noon, and is thus divided: Afternoon Watch, noon to 4 P. M.; First Dog Watch, 4 P. M. to 6 P. M.; Second Dog Watch, 6 P. M. to 8 P. M.; First Watch, 8 P. M. to Midnight; Middle Watch, Midnight to 4 A. M.; Morning Watch, 4 A. M. to 8 A. M.; Forenoon Watch, 8 A. M. to noon. This makes seven Watches, which enables the crew to keep them alternately, as the Watch which comes on duty at noon one day has the afternoon next day, and the men who have only four hours' rest one night have eight hours the next. This is the reason for having Dog Watches, which are made by dividing the hours between 4 P. M. and 8 P. M. into Watches. Time is kept by means of "Bells," although sometimes there is but one Bell on the ship.

Time Difference.

PLACES.	WHEN IT IS 12 O'CLOCK NOON ACCORDING TO				AT	
	Eastern (*a*)	Central (*b*)	Mountain (*c*)	Pacific (*d*)	London.	Paris.
	STANDARD TIME IN THE UNITED STATES					
IT IS AT						
Aden.....Arabia	8.00 P. M.	9.00 P. M.	10.00 P. M.	11.00 P. M.	3.00 P. M.	2.51 P. M.
Amsterdam.....Holland	5.20 P. M.	6.20 P. M.	7.20 P. M.	8.20 P. M.	12.20 P. M.	12.10 P. M.
Athens.....Greece	6.35 P. M.	7.35 P. M.	8.35 P. M.	9.35 P. M.	1.35 P. M.	1.26 P. M.
Berlin.....Germany	5.54 P. M.	6.54 P. M.	7.54 P. M.	8.54 P. M.	12.54 P. M.	12.45 P. M.
Bombay.....India	9.51 P. M.	10.51 P. M.	11.51 P. M.	12.51 A. M.*	4.51 P. M.	4.42 P. M.
Bremen.....Germany	5.33 P. M.	6.33 P. M.	7.33 P. M.	8.33 P. M.	12.33 P. M.	12.24 P. M.
Central Time (*b*).....United States	11.00 A. M.	....	1.00 P. M.	2.00 P. M.	6.00 A. M.	5.51 A. M.
Constantinople.....Turkey	6.56 P. M.	7.56 P. M.	8.56 P. M.	9.56 P. M.	1.56 P. M.	1.47 P. M.
Copenhagen.....Denmark	5.50 P. M.	6.50 P. M.	7.50 P. M.	8.50 P. M.	12.50 P. M.	12.41 P. M.
Dublin.....Ireland	4.35 P. M.	5.35 P. M.	6.35 P. M.	7.35 P. M.	11.35 A. M.	11.26 A. M.
Eastern Time (*a*).....United States	.....	1.00 P. M.	2.00 P. M.	3.00 P. M.	7.00 A. M.	6.51 A. M.
Hamburg.....Germany	5.40 P. M.	6.40 P. M.	7.40 P. M.	8.40 P. M.	12.40 P. M.	12.31 P. M.
Havre.....France	5.00 P. M.	6.00 P. M.	7.00 P. M.	8.00 P. M.	12 NOON	11.51 A. M.
Hongkong.....China	12.37 A. M.*	1.37 A. M.*	2.37 A. M.*	3.37 A. M.*	7.37 P. M.	7.27 P. M.
Honolulu.....Hawaii	6.29 A. M.	7.29 A. M.	8.29 A. M.	9.29 A. M.	1.29 A. M.	1.19 A. M.
Liverpool.....England	4.48 P. M.	5.48 P. M.	6.48 P. M.	7.48 P. M.	11.48 A. M.	11.39 A. M.
London.....England	5.00 P. M.	6.00 P. M.	7.00 P. M.	8.00 P. M.	....	11.51 A. M.
Madrid.....Spain	4.45 P. M.	5.45 P. M.	6.45 P. M.	7.45 P. M.	11.45 A. M.	11.36 A. M.
Manila.....Philippine Islands	1.04 A. M.*	2.04 A. M.*	3.04 A. M.*	4.04 A. M.*	8.04 P. M.	7.54 P. M.
Melbourne.....Australia	2.40 A. M.*	3.40 A. M.*	4.40 A. M.*	5.40 A. M.*	9.40 P. M.	9.31 P. M.
Mountain Time (*c*).....United States	10.00 A. M.	11.00 A. M.	....	1.00 P. M.	5.00 A. M.	4.51 A. M.
Pacific Time (*d*).....United States	9.00 A. M.	10.00 A. M.	11.00 A. M.	....	4.00 A. M.	3.51 A. M.
Paris.....France	5.09 P. M.	6.09 P. M.	7.09 P. M.	8.09 P. M.	12.09 P. M.	....
Rome.....Italy	5.50 P. M.	6.50 P. M.	7.50 P. M.	8.50 P. M.	12.50 P. M.	12.41 P. M.
Stockholm.....Sweden	6.12 P. M.	7.12 P. M.	8.12 P. M.	9.12 P. M.	1.12 P. M.	1.03 P. M.
St. Petersburg.....Russia	7.01 P. M.	8.01 P. M.	9.01 P. M.	10.01 P. M.	2.01 P. M.	1.52 P. M.
Vienna.....Austria	6.06 P. M.	7.06 P. M.	8.06 P. M.	9.06 P. M.	1.06 P. M.	12.57 P. M.
Yokohama.....Japan	2.19 A. M.*	3.19 A. M.*	4.19 A. M.*	5.19 A. M.*	9.19 P. M.	9.09 P. M.

*At places marked * the time noted is in the morning of the FOLLOWING day.

(*a*) "EASTERN" includes: New York, Boston, Philadelphia, Baltimore, Washington, Richmond, Norfolk, Charleston, Buffalo, Pittsburg, Montreal, Quebec, Ottawa, Toronto, etc.

(*b*) "CENTRAL" includes: Chicago, St. Louis, Minneapolis, St. Paul, Milwaukee, Kansas City, Omaha, Indianapolis, Cincinnati Cleveland, Detroit, New Orleans, Memphis, Savannah, Pensacola, Winnipeg, etc.

(*c*) "MOUNTAIN" includes: Denver, Leadville, Colorado Springs, Helena, Regina (N. W. T.), etc.

(*d*) "PACIFIC" includes: San Francisco, Portland (Oregon), Victoria, Vancouver, Tacoma, Seattle, etc.

EASTER SUNDAY. A table showing the date of Easter Sunday in each year of the twentieth century:—

1900—April 15	1934—April 1	1968—April 14
1901—April 7	1935—April 21	1969—April 6
1902—Mar. 30	1936—April 12	1970—Mar. 29
1903—April 12	1937—Mar. 28	1971—April 11
1904—April 3	1938—April 17	1972—April 2
1905—April 23	1939—April 9	1973—April 22
1906—April 15	1940—Mar. 24	1974—April 14
1907—Mar. 31	1941—April 13	1975—Mar. 30
1908—April 19	1942—April 5	1976—April 18
1909—April 11	1943—April 25	1977—April 10
1910—Mar. 27	1944—April 9	1978—Mar. 26
1911—April 16	1945—April 1	1979—April 15
1912—April 7	1946—April 21	1980—April 6
1913—Mar. 23	1947—April 6	1981—April 19
1914—April 12	1948—Mar. 28	1982—April 11
1915—April 4	1949—April 17	1983—April 3
1916—April 23	1950—April 9	1984—April 22
1917—April 8	1951—Mar. 25	1985—April 7
1918—Mar. 31	1952—April 13	1986—Mar. 30
1919—April 20	1953—April 5	1987—April 19
1920—April 4	1954—April 18	1988—April 3
1921—Mar. 27	1955—April 10	1989—Mar. 26
1922—April 16	1956—April 1	1990—April 15
1923—April 1	1957—April 21	1991—Mar. 31
1924—April 20	1958—April 6	1992—April 19
1925—April 12	1959—Mar. 29	1993—April 11
1926—April 4	1960—April 17	1994—April 3
1927—April 17	1961—April 2	1995—April 16
1928—April 8	1962—April 22	1996—April 7
1929—Mar. 31	1963—April 14	1997—Mar. 30
1930—April 20	1964—Mar. 29	1998—April 12
1931—April 5	1965—April 18	1999—April 4
1932—Mar. 27	1966—April 10	2000—April 23
1933—April 16	1967—Mar. 26	

THE FRENCH REVOLUTIONARY ERA. In September, 1792, the convention decreed that the common era should be abolished in all civil affairs, and that the new French era should begin on September 22, 1792, the day of the true autumnal equinox, and that each succeeding year should begin at the midnight of the day on which the true autumnal equinox falls. The year was divided into 12 months of 30 days each. In ordinary years there were 5 extra days, from the 17th to the 21st of our September, and at the end of every fourth year was a sixth complementary day. This reckoning was first used on November 26, 1793, and was continued until December 31, 1805, when it was discontinued, and the Gregorian calendar, used throughout the rest of Europe, was resumed. The following were the dates for the year 1793, the first complete year of this style of reckoning:—

Vendemiaire (Vintage), September 22 to October 21.
Brumaire (Foggy), October 22 to November 20.
Frimaire (Sleety), November 21 to December 20.
Nivose (Snowy), December 21 to January 19.
Pluviose (Rainy), January 20 to February 18.
Ventose (Windy), February 19 to March 20.
Germinal (Budding), March 21 to April 19.
Floreal (Flowery), April 20 to May 19.
Prairial (Pasture), May 20 to June 18.
Messidor (Harvest), June 19 to July 18.
Thermidor (Hot), July 19 to August 17.
Fructidor (Fruit), August 18 to September 16.

The months were divided into 3 decades of 10 days each, but to make up the 365, 5 were added at the end of September: Primidi, dedicated to Virtue; Duodi, to Genius; Tridi, to Labor; Quartidi, to Opinion; and Quintidi, to Rewards. To leap year, called Olympic, a sixth day, September 22 or 23, Sextidi, "the day of the Revolution," was added.

To each tenth day, 36 in all, were assigned 36 "Fêtes Décadaires," decreed by the National Convention on the eighteenth Prairial, in honor of the Supreme Being and Nature, the Human Race, the French People, Benefactors of Humanity, Martyrs for Liberty, Liberty and Equality, the Republic, Liberty of the World, Love of Country, Hatred of Tyrants and Traitors, Truth, Justice, Modesty, Glory and Immortality, Friendship, Frugality, Courage, Good Faith, Heroism, Disinterestedness, Stoicism, Love, Conjugal Fidelity, Paternal Love, Maternal Tenderness, Filial Piety, Infancy, Childhood, Manhood, Old Age, Sickness, Agriculture, Industry, Our Ancestors, Our Posterity, Goodness.

Table of Days Between Two Dates.

A TABLE OF THE NUMBER OF DAYS BETWEEN ANY TWO DAYS WITHIN TWO YEARS.

Day Mo.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29	..	88	119	149	180	210	241	272	302	333	363
30	30	..	89	120	150	181	211	242	273	303	334	364
31	31	..	90	....	151	....	212	243	....	304	....	365

Day Mo.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	366	397	425	456	486	517	547	578	609	639	670	700
2	367	398	426	457	487	518	548	579	610	640	671	701
3	368	399	427	458	488	519	549	580	611	641	672	702
4	369	400	428	459	489	520	550	581	612	642	673	703
5	370	401	429	460	490	521	551	582	613	643	674	704
6	371	402	430	461	491	522	552	583	614	644	675	705
7	372	403	431	462	492	523	553	584	615	645	676	706
8	373	404	432	463	493	524	554	585	616	646	677	707
9	374	405	433	464	494	525	555	586	617	647	678	708
10	375	406	434	465	495	526	556	587	618	648	679	709
11	376	407	435	466	496	527	557	588	619	649	680	710
12	377	408	436	467	497	528	558	589	620	650	681	711
13	378	409	437	468	498	529	559	590	621	651	682	712
14	379	410	438	469	499	530	560	591	622	652	683	713
15	380	411	439	470	500	531	561	592	623	653	684	714
16	381	412	440	471	501	532	562	593	624	654	685	715
17	382	413	441	472	502	533	563	594	625	655	686	716
18	383	414	442	473	503	534	564	595	626	656	687	717
19	384	415	443	474	504	535	565	596	627	657	688	718
20	385	416	444	475	505	536	566	597	628	658	689	719
21	386	417	445	476	506	537	567	598	629	659	690	720
22	387	418	446	477	507	538	568	599	630	660	691	721
23	388	419	447	478	508	539	569	600	631	661	692	722
24	389	420	448	479	509	540	570	601	632	662	693	723
25	390	421	449	480	510	541	571	602	633	663	694	724
26	391	422	450	481	511	542	572	603	634	664	695	725
27	392	423	451	482	512	543	573	604	635	665	696	726
28	393	424	452	483	513	544	574	605	636	666	697	727
29	394	....	453	484	514	545	575	606	637	667	698	728
30	395	....	454	485	515	546	576	607	638	668	699	729
31	396	....	455	...	516	....	577	608	....	669	....	730

The above table applies to ordinary years only. For leap year, one day must be added to each number of days after February 28.

EXAMPLE.—To find the number of days between June 3, 1900, and February 16, 1901: The figures opposite the third day in the first June column are 154; those opposite the sixteenth day in the second February column are 412. Subtract the first from the second product—*i. e.*, 154 from 412, and the result is 258, the number of days between the two dates.

REFORMING THE CALENDAR. The first attempt to reform the calendar was made by Julius Caesar in 45 B. C. He ordered that every year exactly divisible by 4 should have 366 days and all the others 365 days. As the sixth day before the kalends of March was counted twice in leap years, they were called *bissextile* years. He ordered also that the beginning of the year be changed from March 1st to January 1st. The fifth month, formerly called Quintilis, was named July after himself. By Caesar's arrangement the average length of the year was 365¼ days, which was too great by 11 minutes and 14 seconds. This excess amounted to about 3 days in 400 years.

GREGORIAN CALENDAR. The Gregorian calendar is named after Pope Gregory XIII., by whom it was introduced. It consists of a year of 365 days, excepting those years which are exactly divisible by 4. The centurial years, such as 2100, 2200, etc., are not considered as leap years unless they are exactly divisible by 400. This arrangement corrects the error of Caesar's or the Julian calendar. The length of the average year of the Gregorian calendar is, therefore, 365 days, 5 hours, 49 minutes, 12 seconds. England and her colonies introduced the use of the Gregorian calendar in 1752, when it was necessary to drop 11 days from the calendar, as there had been that difference since the Council of Nice in 325. September 3, 1752, was called September 14, 1752. At the same time the beginning of the legal year was changed in England from March 25 to January 1. The difference between the Julian and the Gregorian calendars is now 13 days. Russia and the Greek Church yet use the Julian calendar.

TIME, VARIATIONS IN.

Washington, D. C.,	12.00 m.	London, Eng.,	5.07 p. m.
Athens, Greece,	6.43 p. m.	Madrid, Spain,	4.53 p. m.
Auckland, New Zealand,	4.51 a. m.	Mecca, Arabia,	7.49 p. m.
Augusta, Me.,	12.29 p. m.	Mexico, Mexico,	10.27 a. m.
Austin, Texas,	10.37 a. m.	New Orleans, La.,	11.08 a. m.
Batavia, Java,	12.15 a. m.	New York, N. Y.,	12.12 p. m.
Bombay, India,	10.00 p. m.	Olympia, Washington,	8.57 a. m.
Boston, Mass.,	12.24 p. m.	Omaha, Neb.,	10.44 a. m.
Berlin, Germany,	6.01 p. m.	Paris, France,	5.42 p. m.
Calcutta, India,	11.01 p. m.	Peking, China,	12.54 a. m.
Canton, China,	12.41 a. m.	Philadelphia, Pa.,	12.13 p. m.
Charleston, S. C.,	11.49 a. m.	Pittsburg, Pa.,	11.48 a. m.
Chicago, Ill.,	11.18 a. m.	Rio Janeiro, Bra.,	2.16 p. m.
Constantinople, Turkey,	7.04 p. m.	Rome, Italy,	5.58 p. m.
Copenhagen, Denmark,	5.58 p. m.	St. Louis, Mo.,	11.07 a. m.
Denver, Col.,	10.07 a. m.	St. Petersburg, Russia,	7.09 p. m.
Dublin, Ireland,	4.43 p. m.	Salt Lake City, Utah,	9.40 a. m.
Gibraltar, Spain,	4.51 p. m.	San Francisco, Cal.,	8.58 a. m.
Glasgow, Scot.,	4.51 p. m.	Tallahassee, Fla.,	11.30 a. m.
Halifax, N. S.,	12.54 p. m.	Tokyo, Japan,	2.27 a. m.
Harrisburg, Pa.,	12.01 p. m.	Toronto, Can.,	11.51 a. m.
Lima, Peru,	12.00 m.	Valparaiso, Chile,	12.21 p. m.

DISTANCES AND MAIL TIME TO FOREIGN CITIES FROM THE CITY OF NEW YORK:—

By Postal Route to—	Miles.	Days.
Adelaide, *via* San Francisco	12,845	34
Alexandria, *via* London	6,150	13
Amsterdam, *via* London	3,985	9
Antwerp, *via* London	4,000	9
Athens, *via* London	5,655	12
Bahia, Brazil	5,870	21
Bangkok, Siam, *via* San Francisco	12,990	43
Bangkok, Siam, *via* London	13,125	41
Batavia, Java, *via* London	12,800	34
Berlin	4,385	9
Bombay, *via* London	9,765	24
Bremen	4,235	8
Buenos Aires	8,045	29
Calcutta, *via* London	11,120	26
Cape Town, *via* London	11,245	27
Constantinople, *via* London	5,810	11
Florence, *via* London	4,800	10
Glasgow	3,370	10
Grey Town, *via* New Orleans	2,815	7
Halifax, N. S.	645	2
Hamburg	4,820	9
Havana	1,366	3
Hong-kong, *via* San Francisco	10,590	25
Honolulu, *via* San Francisco	5,645	13
Liverpool	3,540	8
London	3,740	8
Madrid, *via* London	4,925	9
Manila, *via* San Francisco	10,193	33
Melbourne, *via* San Francisco	12,265	26
Mexico City (railroad)	3,750	5
Panama	2,355	6
Paris	4,020	8
Rio de Janeiro	6,204	23
Rome, *via* London	5,030	9
Rotterdam, *via* London	3,935	9
St. Petersburg, *via* London	5,370	10
San Juan, Porto Rico	1,360	5
Shanghai, *via* San Francisco	9,920	25
Shanghai, *via* London	14,745	45
Stockholm, *via* London	4,975	10
Sydney, *via* San Francisco	11,570	21
Valparaiso, *via* Panama	5,915	37
Vienna	4,740	10
Yokohama, *via* San Francisco	7,348	20

TO. A Japanese measure equal to 2 American pecks.

TON. A measure of weight equal to 20 hundredweight. In England it is 2,240 pounds, a long ton; in the United States, 2,000 pounds, a short ton.

A ton of round timber equals 40 cubic feet.
A ton of hewn timber equals 50 cubic feet.
A ton of flour equals 8 sacks or 10 barrels.
A ton of potatoes equals from 10 to 36 bushels.
A ton of wheat equals 20 bushels.
A ton of earth or ground equals 1 cubic yard or 23 cubic feet.
A ton of grindstones equals 15 cubic feet.
A ton of Portland stone equals 16 cubic feet.
A ton of salt equals 42 bushels.
A ton of lime equals 40 bushels.
A ton of coke equals 28 bushels.
A ton carrying capacity of a freight ship equals 40 cubic feet.

TON, METRIC. The weight of 1,000 kilograms, qual to 2,204.6 pounds.

TONDELAND. A Danish measure equal to 1.36 acres.

TONNAGE. Tonnage may refer to either the vessel ton or to the cargo ton.

Vessel tonnage is either displacement, gross register, or net register.

Displacement tonnage is the weight of the vessel and is equal to the weight of water displaced by the floating vessel.

Gross register tonnage is found by dividing the number of cubic feet in the capacity of the ship by 100. A vessel has one "gross" ton for each 100 cubic feet of capacity.

Net register tonnage is found by dividing by 100 the capacity in cubic feet of the space in which cargo and passengers may be carried.

Cargo ton is estimated by both weight and measurement. In the weight estimate, the short ton of 2,000 pounds, the long ton of 2,240 pounds, or the metric ton of 2,204.62 pounds may be used.

When cargo is shipped, not by weight but by measurement, 40 cubic feet of space is estimated to hold a ton. This is said to be the space occupied by a long ton of wheat and is used as the standard.

TSUN. A Chinese measure equal to 1.41 inches.

TUN. A measure of liquid equal by statute to 252 old wine or United States gallons. Equal to two butts or pipes of 126 gallons each.

TUNNLAND. A Swedish measure equal to 1.22 acres.

VARA. An old Spanish measure of about 33 inches.

VEDRO. A Russian measure equal to 2.707 gallons.

VERST. A Russian measure equal to 0.663 (or nearly two thirds) American mile.

VLOCKA. A measure of Russian Poland equal to 41.98 American acres.

WEEK. A period of 7 consecutive days, of which Sunday is the first day (usually so reckoned). There are 52 weeks in a year. A period of 2 weeks is a fortnight, an abbreviation for 14 nights.

YARD. The standard unit of long measure, composed of 3 feet or 36 inches. It is equal to 91.44 centimeters.

5½	yards	equal 1 rod
240	yards	equal 1 cable's-length
1760	yards	equal 1 mile
2026.6	yards	equal 1 nautical mile

YEAR. The period of the earth's revolution around the sun, about 365 days, 5 hours, 48 minutes, and 47 seconds. The sidereal year is 365 days, 6 hours, 9 minutes, and 9.3 seconds. A period of 12 calendar months. As we reckon 365 days to the year, that is (as seen above) 5 hours, 48 minutes, and 47 seconds too short. Accordingly once every four years a day is added to the year, making it 366 days. But by so doing we add the equivalent of 6 hours to each year, which is too much. To correct this error we do not make a leap year of any year which can be divided by 400.

Distance Between the Chief Ports of the World by Sea in Nautical Miles.

UNITED STATES PORTS.

	Miles.
BOSTON to Liverpool, northern route	2,790
southern route	2,932
HONOLULU to Auckland, N. Z.	3,915
San Francisco	2,089
Yokohama	3,445
NEW ORLEANS to Havana	570
Liverpool	4,767
Southampton, England, *via* Havana	4,744
NEW YORK to Colon	1,989
Genoa	4,061
Glasgow	3,000
Havre	3,160
Liverpool	3,025
Southampton	3,110
SAN FRANCISCO to Acapulco	1,850
Honolulu	2,089
Victoria	760
Yokohama	5,280

CANADIAN PORTS.

HALIFAX, N. S., to Bermuda	740
London	2,723
PORT CHURCHILL, Hudson Bay, to Liverpool	2,966
QUEBEC to Glasgow	2,563
ST. JOHN, N. B., to Glasgow	2,605
London	2,972
VANCOUVER, B. C., to Vladivostok	4,401
Sydney, N. S. W.	6,780
VICTORIA, B. C., to San Francisco	760
Yokohama	4,320

WEST INDIAN PORTS.

BERMUDA to Halifax, N. S.	740
HAVANA to New Orleans	570
San Juan, Porto Rico	1,030
Vera Cruz	810
KINGSTON, JAMAICA, to Belize, Honduras	660
MARTINIQUE to Colon	1,357
Havre	3,560
ST. THOMAS to Southampton	3,630
Colon	1,023
Para	1,700
Liverpool	3,627
SAN JUAN, PORTO RICO, to Havana	1,030

CENTRAL AMERICAN PORTS.

ACAPULCO to Panama	1,410
San Francisco	1,850
BELIZE, HONDURAS, to Kingston, Jamaica	660
COLON to St. Thomas	1,023
Martinique	1,357
New York	1,989
PANAMA to Acapulco	1,410
Auckland, N. Z.	6,160
VERA CRUZ to Havana	810

SOUTH AMERICAN PORTS.

BUENOS AIRES to Liverpool	6,258
CAPE HORN to Rio de Janeiro	2,350
Wellington, N. Z.	4,400
GEORGETOWN or **DEMERARA** to London	4,260
MONTEVIDEO to Punta Arenas	1,070
Valparaiso	2,743
Rio de Janeiro	1,000
PARA to Liverpool	4,000
St. Thomas	1,700
PERNAMBUCO to St. Vincent, Cape Verde	1,608
PUNTA ARENAS to Montevideo	1,070
RIO DE JANEIRO to Cape Horn	2,350
Montevideo	1,000
VALPARAISO to Montevideo	2,743

EUROPEAN PORTS.

BRINDISI to Malta	360
CADIZ to Teneriffe	698
CONSTANTINOPLE to Malta	894
Odessa	345
CORK to St. John's, Newfoundland	1,730
EDINBURGH (LEITH) to Hamburg	480
Iceland	1,050
Shetland Islands	270
FAROE ISLANDS to Shetland Islands	250
Iceland	250
GENOA to Gibraltar	858
Naples	336
New York	4,061
GIBRALTAR to Genoa	858
London	1,299
Marseilles	694
Naples	973
Southampton	1,054
GLASGOW to New York	3,000
Quebec	2,563
St. John, N. B.	2,605
HAVRE to Martinique	3,560
New York	3,160
ICELAND, REYKJAVIK, to Edinburgh	1,050
LISBON to Dakar	1,547
Liverpool	983
San Miguel, Azores	780
LIVERPOOL to Boston (northern)	2,790
(southern)	2,932
Buenos Aires	6,258
Lisbon	983
Madeira	1,430
Mauritius, *via* Cape Town	9,950
New Orleans	4,767
New York	3,025
Para	4,000
Port Churchill, Hudson Bay	2,966
Quebec	2,634
St. Thomas	3,627
LONDON to Georgetown (Demerara)	4,260
Gibraltar	1,299
Halifax	2,723
Melbourne, *via* Suez Canal	11,055
St. John, N. B.	2,972
Wellington, *via* Cape Horn	11,970
MALTA to Constantinople	894
Brindisi	360
MARSEILLES to Algiers	417
Gibraltar	694
Sydney, *via* Suez Canal	9,831
NAPLES to Genoa	336
Gibraltar	973
Port Said	1,110
ODESSA to Constantinople	345
PORT SAID to Naples	1,110
SAN MIGUEL, AZORES, to Lisbon	780
SHETLAND ISLANDS to Edinburgh	270
Faroe Islands	250
SOUTHAMPTON to Cape Town	6,016
Gibraltar	1,054
New Orleans	4,744
New York	3,110
St. Thomas	3,630
Teneriffe	1,501
TRIESTE to Bombay	4,317

AUSTRALASIAN PORTS.

ADELAIDE to King George's Sound	1,015
APIA, SAMOA, to Sydney	2,354
AUCKLAND to Panama	6,160
Honolulu	3,915
Sydney	1,284
HOBART to Cape Town	5,838
KING GEORGE'S SOUND to Melbourne	1,340
Adelaide	1,015
Aden	5,114
MELBOURNE to King George's Sound	1,340
Mauritius	4,594
London, *via* Suez Canal.	11,055
NOUMEA, NEW CALEDONIA, to Sydney	1,077
SAMOA to Sydney	2,354
SUVA, FIJI ISLANDS, to Sydney	1,753
SYDNEY to Apia, Samoa	2,354
Auckland	1,284
Suva, Fiji Islands	1,753
Marseilles, *via* Suez Canal.	9,831
Noumea, New Caledonia	1,077
Vancouver	6,780
Wellington	1,280
WELLINGTON to Cape Horn	4,400
London, *via* Cape Horn	11,970
Sydney	1,280

ASIATIC PORTS.

ADEN to Bombay	1,650
Colombo, Ceylon	2,100
Karachi	1,480
King George's Sound	5,114
Port Said	1,308
Zanzibar	1,120
BOMBAY to Aden	1,650
Mauritius	2,530
Trieste, *via* Suez	4,317
CALCUTTA to Rangoon	680

	Miles.
COLOMBO to Aden	2,100
King George's Sound	3,347
Penang	1,278
HONGKONG to Manila	650
Shanghai	800
Singapore	1,440
Tokyo	1,620
Yokohama	1,620
KARACHI to Aden	1,480
MANILA to Hongkong	650
Singapore	1,343
NAGASAKI to Shanghai	454
PENANG to Colombo	1,278
PORT SAID to Aden	1,308

	Miles.
RANGOON to Calcutta	680
SHANGHAI to Hongkong	800
Nagasaki	454
Tien-tsin	735
SINGAPORE to Hongkong	1,440
Manila	1,343
TIEN-TSIN to Shanghai	735
TOKYO to Hongkong	1,620
VLADIVOSTOK to Vancouver	4,401
YOKOHAMA to Hongkong	1,620
Honolulu	3,445
San Francisco	5,280
Victoria, Canada	4,320

Distances Between European Cities.

TRAVELING DISTANCES BETWEEN THE PRINCIPAL CITIES IN EUROPE, IN MILES.

	Odessa	Moscow	St. Petersburg	Stockholm	Copenhagen	Warsaw	Constantinople	Trieste	Rome	Munich	Vienna	Turin	Berne	Berlin	Hamburg	Antwerp	Lisbon	Madrid	Paris	Liverpool	London
Constantinople	363	950	406	836	846	806	1205	510	647	266	720	297	611	178	412	1530	415	908	489	202	
Odessa		1339	1356	1510	1252	1276	842	487	840	470	535	837	678	497	1804	1119	1323	1397	287		
Moscow			1733	2408	1510	702	1330	811	1617	2087	1513	1247	1967	1832	1209	1387	1706	3414	2904	1843	2117	1915
St. Petersburg				1082	668	436	1800	693	1769	2239	1395	399	2119	1714	1091	1269	1588	3286	2874	1699	1976	1774
Stockholm					1067	1156	1226	1171	1731	1084	1110	1337	1176	685	580	993	2384	1972	1219	1491	1289
Copenhagen						1021	960	1067	1318	671	697	1047	885	270	208	620	2012	1600	812	1181	979
Warsaw							1680	888	1066	1009	1828	1416	863	1352	1150						
Constantinople								1545	1240	1418	1737	3117	2625	1760	2119	1917					
Trieste									1048	1180	1033	1746	1223	907	1397	1195					
Rome										639	1066	1009	1828	1416	863	1352	1150				
Munich											605	727	2157	1668	849	1182	980				
Vienna												719	1506	1073	500	989	787				
Turin													1506	1073	500	989	787				
Berne														460	1602	1183	359	848	646		
Berlin															1889	1582	674	948	746		
Hamburg																1804	1495	587	859	657	
Antwerp																	1119	211	472	270	
Lisbon																		1812	1610		
Madrid																			1397	1195	
Paris																				287	
Liverpool																					202

Number of Miles from New York to

Adrian, Mich.	775	Dayton, Ohio	804	New Bedford, Mass.	181
Akron, Ohio	610	Denver, Col	1,980	New Brunswick, N. J.	32
Albany, N. Y.	143	Des Moines, Iowa	1,251	Newburgh, N. Y.	53
Alexandria, Va.	238	Detroit, Mich	679	New Haven, Conn.	76
Algiers, La.	1,551	Dover, N. H.	304	New Orleans, La.	1,550
Allegheny, Pa.	434	Dubuque, Iowa	1,100	Newport, Ky.	744
Allentown, Pa.	92	Dunkirk, N. Y.	460	Newport, R. I.	162
Alton, Ill.	1,060	Elmira, N. Y.	274	Norwalk, Conn.	45
Annapolis, Md.	222	Erie, Pa.	508	Omaha, Neb.	1,455
Ann Arbor, Mich.	716	Evansville, Ind.	1,021	Oswego, N. Y.	237
Atchison, Kan.	1,368	Fall River, Mass.	180	Paterson, N. J.	17
Atlanta, Ga.	1,018	Fitchburg, Mass.	218	Peoria, Ill.	1,072
Auburn, N. Y.	328	Fort Kearney, Neb.	1,598	Petersburg, Va.	378
Augusta, Me.	407	Fort Wayne, Ind.	763	Philadelphia, Pa.	88
Augusta, Ga.	887	Fredericksburg, Va.	296	Pittsburg, Pa.	431
Aurora, Ill.	951	Galena, Ill.	1,083	Portland, Me.	344
Baltimore, Md.	188	Galesburg, Ill.	1,076	Providence, R. I.	193
Bangor, Me.	482	Galveston, Tex.	1,900	Quincy, Ill.	1,176
Bath, Me.	382	Georgetown, D. C.	228	Racine, Wis.	976
Baton Rouge, La.	1,320	Hamilton, Ohio	766	Raleigh, N. C	669
Belfast, Me.	424	Harrisburg, Pa.	182	Reading, Pa.	128
Bellefontaine, Ohio	658	Hartford, Conn.	112	Richmond, Va.	356
Binghamton, N. Y.	215	Hudson, N. Y.	115	Rochester, N. Y.	386
Blackstone, Mass.	272	Indianapolis, Ind.	838	Rock Island, Ill	1,093
Bloomington, Ill.	1,037	Jackson, Miss.	1,498	Rome, N. Y.	264
Boston, Mass.	236	Jefferson City, Mo.	1,210	Roxbury, Mass.	238
Bristol R. I.	215	Kalamazoo, Mich.	822	Sacramento, Cal.	2,900
Bucyrus, Ohio	632	Kansas City, Mo.	1,361	St. Joseph, Mo.	1,384
Buffalo, N. Y.	433	Kingston, N. Y.	88	St. Louis, Mo.	1,084
Burlington, N. J.	74	Lafayette, Ind.	903		
Burlington, Iowa	1,122	Lansing, Mich.	785		
Burlington, Vt.	280	Lawrence, Mass.	262		
Cambridge, Mass.	239	Leavenworth, Kan.	1,385		
Camden, N. J.	91	Lexington, Ky.	840		
Canandaigua, N. Y.	377	Lexington, Mo.	1,354		
Carson City, Nevada	2,870	Little Rock, Ark.	1,430		
Chambersburg, Pa.	246	Lockport, N. Y.	507		
Charleston, S. C.	874	Louisville, Ky.	900		
Charlestown, Mass.	235	Lowell, Mass.	261		
Chattanooga, Tenn.	980	Lynchburg, Va	404		
Chicago, Ill.	911	Macon, Ga.	1,121		
Chillicothe, Ohio	645	Madison, Wis.	1,049		
Cincinnati, Ohio	744	Memphis, Tenn.	1,289		
Circleville, Ohio	640	Milledgeville, Ga.	1,100		
Cleveland, Ohio	581	Milwaukee, Wis.	996		
Columbia, S. C.	744	Mobile, Ala.	1,270		
Columbus, Ohio	624	Montgomery, Ala.	1,193		
Concord, N. H.	308	Montpelier, Vt.	454		
Covington, Ky.	745	Nashua, N. H.	275		
Cumberland, Md.	364	Nashville, Tenn.	1,085		
Davenport, Iowa	1,093	New Albany, Ind.	903		

St. Paul, Minn.	1,441				
Salem, Mass.	252				
Salt Lake City, Utah	2,410				
San Francisco, Cal.	3,038				
Sandusky, Ohio	642				
Saratoga, N. Y.	182				
Savannah, Ga.	974				
Scranton, Pa.	142				
Springfield, Ill.	1,068				
Springfield, Mass.	138				
Springfield, Ohio	826				
Staunton, Va.	482				
Stonington, Conn.	143				
Syracuse, N. Y.	302				
Taunton, Mass.	210				
Tallahassee, Fla.	1,190				
Terre Haute, Ind.	912				
Toledo, Ohio	742				
Tonawanda, N. Y.	463				
Trenton, N. J.	58				
Troy, N. Y.	148				
Utica, N. Y.	237				
Vicksburg, Miss.	1,542				
Washington, D. C.	230				
Wheeling, W. Va.	522				
Wilmington, Del.	116				
Wilmington, N. C.	604				
Worcester, Mass.	192				

Number of Miles by Water from New York to

Amsterdam	3,510	Hawaii	15,300
Bermuda	660	Kingston	1,640
Bombay	11,574	Lima	11,310
Boston	310	Liverpool	3,210
Buenos Aires	7,110	London	3,375
Calcutta	12,425	Madras	11,850
Canton	13,900	Naples	4,330
Cape Horn	8,115	New Orleans	2,045
Cape of Good Hope	6,830	Panama	2,358
Charleston	750	Pekin	15,325
Columbia River	15,965	Philadelphia	240
Constantinople	5,140	Quebec	1,400
Dublin	3,225	Rio Janeiro	3,840
Gibraltar	3,300	Round the Globe	25,000
Halifax	612	San Francisco	15,858
Hamburg	3,775	St. Petersburg	4,420
Havana	1,420	Valparaiso	9,750
Havre	3,210	Washington	400

LARGEST SHIP CANALS IN THE WORLD.

Opened.	Name.	Value to Commerce.	Location.
1876	**Amsterdam Ship:** 16½ miles long; 197 feet wide; 23 feet minimum depth.	Reduces distance to North Sea 50½ to 16½ miles.	Connects Ymuiden, on the North Sea, with Amsterdam. Annual net tonnage, 4,662,229 tons.
1902	**Bruges:** 6¼ miles long; 26¼ feet deep; 72 feet wide. Cost over $7,500,000.	Brings ocean trade from the North Sea to Bruges.	Connects Bruges with Heyst on the North Sea.
1822	**Caledonian:** length 60½ miles; depth 17 feet; width 100 feet; 25 locks. Cost up to 1849, $6,381,294.	Fishing fleets and small tourist steamers for access to the heart of Scotland.	Connects Atlantic with Moray Firth on the North Sea. Twenty-three of the 60½ miles are cutting, the rest small lochs; controlled by a government commission.
1909	**Cape Cod:** 12 miles long; begun 1909; 25 feet deep; 200 to 300 feet wide, at top; 125 feet at bottom; sea level.	Shortens route from Boston to New York 120 miles.	Between Massachusetts and Buzzards Bay. Cost, $12,000,000.
1893	**Corinth:** 4 miles long; 26 feet deep; 72 feet wide. Cost $13,750,000. Tolls are 18 cents a ton and 20 cents a passenger.	Shortens voyage from the Adriatic to harbor of Athens by 202 miles. Saves 185 miles between Adriatic and Black seas.	Connects the Gulf of Corinth with the Saronic Gulf. Difficulties of navigation in the gulfs at the terminals cause larger vessels to avoid it.
1885	**Cronstadt** or **Pontileff:** 17½ miles long; 22 feet deep; 200 feet wide. Cost $10,000,000,	Carries vessels direct to St. Petersburg without unloading as formerly.	Connects Cronstadt with St. Petersburg.
1681	**Du Midi** or **Languedoc:** 148 miles long; 600 feet above sea level; 100 locks; 6½ feet deep; 60 feet wide; Cost $3,500,000.	Floats vessels of about 100 tons; shortens the route between French ports, and develops inland trade.	Connects the Bay of Biscay through the Garonne River with the Mediterranean Sea and the two terminals, Toulouse and Narbonne
1900	**Elbe and Trave.** Cost nearly $6,000,000.	Opens up the trade of the interior with the Baltic Sea.	Connects the Elbe with the Baltic through the Trave.
1791	**Forth and Clyde:** 38 miles long; 160 feet above sea level; 8 to 10 feet deep; 39 locks.	Transports merchandise across Scotland and benefits small fishing boats.	Connects the River Forth with the Clyde.
486 B.C. to 18th C. A. D.	**Grand:** 1000 miles long; barges are drawn up inclined planes by capstans.	Connects the cities of Hangchow and Peking. Still used to carry rice and passengers.	Extends from Hangchow to Tientsin, China. Connects the waters of the Yang-tse-kiang with the Peiho.
1895	**Harlem Ship Canal.**	Cuts across Manhattan Island and obviates the passage around by the Battery.	Connects the Hudson and Harlem rivers.
1895	**Kaiser Wilhelm** or **Nord-Ost-See** or **Baltic and North Sea:** 61 miles long; 29½ feet deep; 219 feet wide. Cost $40,000,000.	Saves over 200 miles in going from the Baltic to the North Sea. Passage occupies 8 to 10 hours. A sea level canal.	Connects Holtenau on the Baltic to Brunsbüttel on the Elbe. Traffic is 4,500,000 tons annually.
1894	**Manchester:** 35½ miles long; 28 feet deep; 300 feet wide; 4 locks. Cost $75,000,000.	Seagoing vessels can ascend to Manchester. One of the greatest feats of hydraulic engineering.	Runs from the Mersey at Eastham just above Liverpool, to Manchester. A swing aqueduct carries the Bridgewater Canal over the Manchester Canal and lifts like a drawbridge to let vessels with masts pass through.
1855	**Sault Ste. Marie, St. Mary's** or **"Soo:"** 2 miles long; 25 feet deep; 160 feet wide at bottom; has one lock, the largest in the world. Cost $6,100,000.	Overcomes the obstruction of St. Mary's Falls in Michigan.	Connects the waters of Lake Superior with St. Mary's River and Lake Huron. Though open only 8 months in the year the traffic is the largest in the world, greater than that through the Suez, amounting to about 40,000,000 tons a year.
1896	**Sault Ste. Marie** (Canadian); ¾ mile long; 150 feet wide; 22 feet deep; one lock. Cost $3,770,621.	Overcomes obstructions in St. Mary's River. Gives a waterway from the head of Lake Superior to the St. Lawrence.	Connects Lake Superior and Lake Huron; has a traffic of about 5,500,000 tons annually.
1869	**Suez:** length nearly 100 miles; uniform depth, 29 feet. Cost originally $80,000,000; improvements (1884-1889) cost $20,000,000.	Shortens sea route to India by saving passage around the south of Africa. Built by the French under De Lesseps.	Connects Port Said on the Mediterranean with Port Thewfik on the Red Sea. Annual value of traffic exceeds $700,000,000; time of transit, 16 hours 8 minutes. Accommodates a ship of 10,000 tons. Toll receipts exceed $22,000,000 from over 4,000 ships a year. England bought nearly half the stock from the Khedive (1875) for $19,855,320. Toll is 8½ francs per ton for loaded ships; 7 francs for empty ships; and 10 francs for passengers.
1829	**Welland** (Canadian): 26¾ miles long; 14 feet deep; 45 feet wide at bottom; 27 locks; Cost $28,000,000.	Passes around Niagara Falls. Completes the waterway from the head of Lake Superior to the sea.	Connects Lakes Erie and Ontario. Begun in 1824 and completed in 1833. Locks give a rise of 365 feet.

Ship Canals in Construction and Projected—*Continued.*

Opened.	Name.	Value to Commerce.	Location.
	Panama Canal: 49 miles long; depth at each terminal 40 feet and width from 200 to 1000 feet. Estimated total cost $175,000,000. Total estimated excavation, 1,000,000,000, cubic yards; 6 locks; time of passage, from 20 to 30 hours. Depth of canal proper from 30 to 45 feet. Summit level 85 feet.	Will shorten the voyage from Liverpool to San Francisco 43 per cent. and to Iquique 30 per cent. From New York to Australia, 28 per cent. shorter than by Suez. From New Zealand to England 15 per cent. shorter than by Suez.	Connecting the Atlantic and Pacific Oceans across the isthmus of Panama, between Panama and Colon. The dam at Gatun is to catch the overflow from the Chagres River. The reservoir will have a surface area of 110 square miles: the dam will be 135 feet above sea level, 7,700 feet long, 2,625 feet wide at the bottom. The Culebra cut is the hardest part of the work, 4.7 miles long, from the cascades to Paraiso. About 35,000,000 yards of earth were removed by 100 steam shovels in 1909. Nearly 50,000 employees.
	Riga: 1000 miles long, 27 feet deep, 213 feet wide; to cost $500,000,000; five years to construct.	To connect the Baltic with the Black Sea and give an outlet for trade of the interior of Russia.	From Riga on the Baltic to Kherson on the Black Sea.
	Berlin: 25 feet deep, 190 feet wide; to cost $50,000,000.	To develop Berlin's trade and to make it accessible by ships of large size.	From the Baltic Sea to Berlin.

CANALS OF THE UNITED STATES AND CANADA.

When Opened.	Name.	Use.	Connects.
1860	**Albemarle and Chesapeake:** length, 14 miles; width, 80 feet; depth, 7½ feet. Cost, $1,641,363.	With the Chesapeake and Delaware and the Delaware and Raritan canals it forms a portion of the inland navigation between New York, Philadelphia, Baltimore, and North Carolina.	Connects Norfolk, Va., with Currituck Sound, N. C. Number locks, 1; capacity, steamers of 800 tons, drawing 7 feet water.
1847	**Augusta:** length, 9 miles; width, 150 feet; depth, 11 feet. Cost, $1,500,000	Provides water power for manufacturing; serves to bring cotton from the upper Savannah to Augusta.	Connects Savannah River, Ga., and Augusta, Ga. Is a ship canal and owned by the city of Augusta. No toll is charged.
1849	**Black River Canal:** length, 35 miles; width, 42 feet; depth, 4 feet. Cost, $3,581,954.	Affords communication between Black River and Erie Canal.	Connects Rome, N. Y., with Lyon Falls, N. Y. Number locks, 109; elevation gained by locks, 693 feet. Locks are 90 x 15 feet. Annual freight traffic = 75,308 tons.
1839	**Cayuga and Seneca:** length, 25 miles; width, 70 feet; depth, 7 feet. Cost, $2,232,632.	Affords communication between Cayuga and Seneca lakes and the Erie Canal.	Connects Montezuma, N. Y., with Cayuga and Seneca lakes, N. Y. Number locks, 11. To be enlarged.
1822	**Champlain:** length, 81 miles; width, 58 feet; depth, 6 feet. Cost, $4,044,000. Enlarged to 12 feet depth.	Completes the waterway between Atlantic seaboard and navigable St. Lawrence.	Connects Whitehall, N. Y., at head of Lake Champlain, with the Erie Canal at Waterford. Has 32 locks; capacity, boats carrying 2,500 tons; ranks next to Erie in importance.
1829	**Chesapeake and Delaware:** length, 14 miles; width, 66 feet; depth, 9 feet. Cost, $3,730,230.	Provides water route directly across Delaware and Maryland; saves distance around the peninsula.	Connects Chesapeake City, Md., and Delaware City, Del. Number locks, 3. Is a ship canal. Has 3 locks, 220 x 24 feet; total rise and fall, 32 feet. Annual freight traffic = 959,146 tons.
1850	**Chesapeake and Ohio:** length, 184 miles; width, 60 feet; depth, 6 feet. Cost, $11,290,327.	Transportation of coal from Cumberland coal regions to Potomac River.	Cumberland, Md., with Washington, D. C. Has 73 locks; elevation gained by locks, 609 feet; dimensions, 100 x 15 feet. Capacity of canal, boat of 130 tons.
1900	**Chicago Sanitary and Ship Canal:** length, 34 miles; width, 290 to 162 feet; depth, 22 feet. Cost, $34,000,000.	To divert into the Illinois River Chicago's sewage previously discharged into Lake Michigan.	Connects Lake Michigan at Chicago with the Illinois River at Lockport.
1847	**Company's:** length, 22 miles; depth, 6 feet. Cost, $99,000.		Mississippi River and Bayou Black, La. 1 lock.
1843	**Cornwall:** length, 11 miles; width, 100 feet; depth, 16 feet. Cost, $7,234,183.	To improve navigation of St. Lawrence.	Cornwall and Dickinson's Landing; 6 locks; to admit boats, 175 x 180 feet long.
1828	**Delaware and Hudson:** length, 108 miles; width, 48 feet; depth, 6 feet. Cost, $6,339,210.	Used in connection with railroads for transportation of coal.	Rondout on the Hudson to Honesdale, Penn. 113 locks of dimensions 100 x 15 feet; 107 lift locks accomplishing total rise and fall of 1,028 feet. Annual freight traffic = 1,329,313 tons. Capacity, boats of 140 tons.

Canals of the United States and Canada—*Continued.*

When Opened.	Name.	Use.	Connects.
1830	**Delaware Division:** length, 60 miles; width, 60 feet; depth, 6 feet. Cost, $2,433,350.	Used for the transportation of coal.	Connects Easton, Penn., and Bristol, Penn. Has 57 locks, 100 x 22 feet, accomplishing total rise and fall of 375 feet. Annual freight traffic = 719,338 tons.
1877	**Des Moines Rapids:** length, 7½ miles; depth, 5 feet. Cost, $4,582,000.		At Des Moines rapids, Mississippi River.
1828	**Dismal Swamp:** length, 22 miles; depth, 6 feet. Cost, $2,800,000.	To bring out lumber of Dismal Swamp and surrounding country; in War of 1812, afforded water communication for transportation of military stores and products.	Connects Chesapeake Bay with Albemarle Sound; 7 locks. At ¼ mile intervals the canal is widened to 60 feet for turn-out space.
1826	**Erie:** length, 387 miles; width, 70 feet; depth, 7 feet. Cost, $52,540,800.	Transportation of grain from the west; New York made pre-eminent as a commercial center.	Hudson River at Albany and Troy, N. Y., with Lake Erie at Buffalo; 72 locks, 110 x 18 feet; elevation gained by locks, 568 feet. Capacity, boats of 240 tons. Toll collected, $400,000,000.
1868	**Fairfield:** length, 4½ miles; width, 40 feet; depth, 6 feet. Cost, $100,000.	A drain for the region; with Alligator River and Sound, forms a waterway for transportation of products.	Connects Alligator River with Lake Mattamuskeet, N. C. Annual freight traffic = 40,000 tons
1847	**Galops:** length, 7⅛ miles; width, 80 feet; depth, 14 feet. Cost, $6,106,940.	To avoid the rapids on north side of St. Lawrence.	Iroquois Point and Galops; 3 locks, 800 x 45 feet.
1851	**Galveston and Brazos:** length, 8 miles; width, 50 feet; depth, 4 feet. Cost, $340,000.	Opens inland navigation 150 miles for vessels requiring 4 feet draught of water.	Connects Galveston, Tex., and Brazos River, Tex.
1909	**Georgian Bay:** length, 440 miles; depth, 21 feet. Cost, $100,000,000. Begun in 1909.	To transport vessels from Lake Superior to Montreal without transshipment.	Lake Huron with tide water at Montreal; 27 locks; admits vessels 600 feet long, 22 feet draught.
1843	**Hocking:** length, 42 miles; width, 40 feet; depth, 4 feet. Cost, $975,481.	Branch of the Ohio Canal.	Connects Carroll, O., and Nelsonville, O. Has 26 locks, 87 x 15 feet; total rise and fall, 203 feet. Annual freight traffic = 35,290 tons.
1848	**Illinois and Michigan:** length, 102 miles; width, 60 feet; depth, 6 feet. Cost, $7,357,787.	Allows passage of vessels from Gulf of Mexico to Gulf of St. Lawrence, using also the Welland Canal.	Lake Michigan and Illinois River; 15 locks, 350 x 75 feet, admitting 12 canal boats at a time; elevation gained by locks, 145 feet; rise and fall, 141 feet. Annual freight traffic = 751,360 tons.
1895	**Illinois and Mississippi:** length, 75 miles; width, 80 feet; depth, 7 feet. Cost, $7,250,000.	Furnishes short route from the upper Mississippi to Lake Michigan in connection with Illinois waterways.	Lower rapids of Rock River, Ill., with Mississippi River; 3 locks, 150 x 35 feet; passing barges of 600 tons.
1825	**Lachine:** length, 8½ miles; width, 150 feet; depth, 16 feet. Cost, $12,000,000.	To avoid Lachine rapids.	Montreal with Lachine or St. Louis; 5 locks, 270 x 45 feet; admits largest vessels.
1821	**Lehigh Coal and Navigation Company:** length, 108 miles; width, 60 feet; depth, 6 feet. Cost, $4,455,000.	Transportation of coal, iron ore, lime, and lumber	Connects Coalport, Penn., with Easton, Penn.; 57 locks, 100 x 22 feet; total rise and fall, 375 feet. Annual freight traffic = 719,338 tons.
1872	**Louisville and Portland:** length, 2½ miles. Cost, $5,578,631.		At falls of Ohio River, Louisville, Ky.
1835	**Miami and Erie:** length, 284 miles; width, 50 60 feet; depth, 5½ feet. Cost, $8,002,680.	General transportation.	Connects Cincinnati, O., and Toledo, O.; 93 locks; dimensions of locks, 90 x 15 feet; total rise and fall, 907 feet. Annual freight traffic = 323,737 tons.
1836	**Morris:** length, 103 miles; width, 45 feet; depth, 5 feet. Cost, $6,000,000.	Facilitates transportation between anthracite coal regions and the Atlantic.	Connects Easton, Penn., and Jersey City, N. J.; 33 locks. Capacity, boats of 65 tons
1889	**Muscle Shoals and Elk River Shoals:** length, 16 miles; width, 60 feet; depth, 6 feet. Cost, $3,156,919.	Provides uninterrupted steamboat waterways into the agricultural and mineral districts of Tennessee.	Connects Big Muscle Shoals, Tenn., and Elk River Shoals, Tenn.; 11 locks
	Newbern and Beaufort: length, 3 miles.	Provides communication directly across Carteret County, N. C., by water. Saves the longer trip around by way of the Atlantic.	Connects Clubfoot Creek and Harlow Creek, N. C. Has no locks.
1840	**Ogeechee:** length, 16 miles; width, 120 feet; depth, 3 feet. Cost, $407,810		Connects Savannah River, Ga., to Ogeechee River, Ga.; 5 locks. Annual freight traffic = 29,905 tons.

Canals of the United States and Canada—*Continued.*

When Opened.	Name.	Use.	Connects.
1835	**Ohio:** length, 326 miles; width, 40 feet; depth, 4 feet. Cost, $7,904,971.	Communication between the most southern parts of Ohio and Lake Erie.	Connects Cleveland, O., and Portsmouth, O.; 176 miles in operation in 1831; 144 locks, 90 x 15 feet; a rise and fall of 1,207 feet. Annual freight traffic = 429,626 tons.
1885	**Ohio:** length, 36.5 miles; depth, 6 feet. Cost, $4,668,561.	Transportation of general merchandise.	Connects Pittsburg and Beaver; 6 locks.
1828	**Oswego:** length, 38 miles; width, 70 feet; depth, 7 feet. Cost, $5,161,793.	Provides communication by water between Syracuse and Lake Ontario.	Connects Lake Ontario, at Oswego, with Erie Canal at Syracuse; rise, 157 feet; 18 locks, 110 x 18 feet. Burden of boats, 240 tons.
1839	**Pennsylvania:** length, 193 miles; width, 40 feet; depth, 6 feet. Cost, $7,731,750.	Communication between the Delaware and Ohio rivers. Abandoned 1889.	Connects Columbia, Northumberland, Wilkesbarre, and Huntington, Penn.; 108 locks, 90 x 17 feet. Annual freight traffic = 861,798 tons.
1872	**Penn's Neck Canal:** length, 2 miles; width, 100 feet; depth, 5 feet. Cost, $41,000.	Access to valuable agricultural district; shortens water route to Philadelphia by 40 miles.	Connects Salem Creek and Delaware River. Annual freight traffic=6,000 tons.
1873	**Portage Lake and Lake Superior:** length, 7.75 miles; width, 120 feet; depth, 20 feet. Cost, $4,246,728.	Provides a route by which ships in the western half of Lake Superior pass to Keweenaw Bay.	Connects Keweenaw Bay and Lake Superior. Has no locks.
1899	**Port Arthur:** length, 7.13 miles; depth, 25 feet. Cost, $803,490.	Controlled by federal government.	Connects Taylor's Bayou with Sabine Pass, Tex.
1873	**Portland General Electric Co.:** length, 0.75 mile; width, 75 feet; depth, 6 feet. Cost $750,000.	Transportation of general merchandise.	Around falls of Willamette River at Oregon City; 5 locks.
1844	**Rapide Plat:** length, 3⅔ feet; depth, 14 feet; width, 80 feet. Cost, $2,158,242.	General transportation; to avoid rapids; one of a series.	North shore of St. Lawrence, from Morrisburg; 2 locks, 270 x 45 feet.
1880	**Sante Fe:** length, 10½ miles; depth, 5 feet. Cost, $70,000.		Connects Waldo, Fla., and Melrose, Fla.
1855	**Sault Ste. Marie** (Ship Canal): length, 2.7 miles; depth, 25 feet. Cost, $13,000,000.	One of the most important canals in the United States. The freight is iron, coal, wheat, flour, lumber.	Connects Lake Superior and Lake Huron at St. Mary's River; 3 locks. Tonnage, in 1906, 41,276,862.
1826	**Schuylkill Navigation Company:** length, 89.88 miles; width, 58 feet; depth, 6 feet. Cost, $11,018,875.	For transporting coal from the anthracite coal regions to the Atlantic.	Connects Mill Creek, Penn., and Philadelphia, Penn.; 71 locks; dimensions, 110 x 18 feet; 47 lift; 7 guard; 17 guard with lift; rise and fall, 619 feet. Annual freight traffic = 630,416 tons.
1889	**St. Clair Flats:** length, 1.19 miles; depth, 20 feet. Cost, $1,035,577.	Transportation of general merchandise.	Connects St. Clair River with Lake St. Clair.
1896	**St. Mary's Falls:** length, 1.6 miles; depth, 25 feet. Cost, $8,000,000. Ship Canal.	For transportation of copper ore from Lake Superior regions. St. Mary's River rapids avoided.	Connects Lake Superior and Lake Huron at Sault Ste. Marie, Mich.; 2 locks; descent, 18 feet. Annual freight traffic = 1,400,000 tons.
	Soulanges: length, 14 miles; width, 100 feet; depth, 15 feet. Cost, $6,955,318.	To avoid three rapids, sequence of Lachine.	Connects Lachine with Cornwall; 5 locks, 280 x 45 feet.
1881	**Sturgeon Bay and Lake Michigan:** length, 1.36 miles; width, 160 feet; depth, 21 feet. Cost, $504,596.	Communication between Green Bay and Lake Michigan, saving the distance around the peninsula.	Connects Green Bay and Lake Michigan. Has no locks.
1840	**Susquehanna and Tide water:** length, 45 miles; width, 50 feet; depth, 5½ feet. Cost, $1,931,345.	General merchandise transportation. Abandoned 1889.	Connects Columbia, Penn., and Havre de Grace, Md.; 43 locks; dimensions, 170 x 17 feet; total rise and fall, 220 feet. Annual freight traffic = 362,295 tons.
1827	**Union Canal:** length, 84½ miles; width, 43 feet; depth, 4½ feet. Cost, $5,907,850.	Transportation of coal prior to 1889, in which year it was abandoned.	Connects Middletown and Reading, Penn. Has 93 locks, 90 x 15 feet, accomplishing a total rise and fall of 501 feet. Annual freight traffic 29,853 tons.
	Upper White: length, 9 miles; depth, 5 feet. Cost, $684,110.	Transportation of general merchandise.	From 8 miles above to 1 mile below Batesville, Arkansas; 2 locks.

Imports and Exports of Merchandise into and from the United States, by Principal Countries, 1895 to 1905.

EXPORTS.

COUNTRIES.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
EUROPE:—Austria-Hungary	$2,125,772	$2,439,651	$4,023,011	$5,697,912	$7,378,935	$7,046,819	$7,222,650	$6,167,127	$7,156,688	$8,225,282	$11,623,746
Belgium	25,242,580	27,070,625	33,071,555	47,619,201	44,158,033	48,307,011	49,389,259	46,271,756	47,087,939	40,871,829	38,478,741
Denmark	3,475,326	6,557,448	10,194,857	12,697,421	16,605,828	18,487,991	16,175,235	15,464,622	16,157,583	14,052,821	14,881,568
France	45,149,137	47,040,660	57,591,541	95,459,290	60,596,899	83,335,097	78,714,927	71,512,984	77,285,239	84,379,480	76,337,471
Germany	92,053,753	97,897,197	125,246,088	155,039,972	155,772,179	187,347,889	191,780,427	173,148,280	193,841,636	214,780,992	194,220,472
Italy	16,363,125	19,143,606	21,502,423	23,290,858	25,034,940	33,256,620	34,473,189	31,388,135	35,032,680	35,720,001	38,740,067
Netherlands	31,011,775	39,022,899	51,045,011	64,274,524	79,305,998	89,386,676	84,356,318	75,123,135	78,245,419	72,250,568	73,298,362
Portugal	2,971,396	3,156,991	2,520,058	3,532,057	4,132,400	5,886,542	5,294,240	3,045,651	3,652,194	1,935,118	2,089,846
Russia in Europe	5,957,856	7,496,650	7,602,276	7,336,082	8,486,667	7,438,317	8,084,228	9,302,359	16,169,262	19,074,311	16,686,330
Spain	10,927,069	11,492,428	10,912,715	10,228,545	9,077,807	13,399,680	15,480,288	15,511,987	17,682,210	15,762,344	17,038,474
Sweden and Norway	4,652,601	5,031,002	5,463,641	6,313,786	12,218,289	10,436,467	11,844,152	10,108,166	10,101,904	11,340,884	11,617,640
Switzerland	17,578	32,954	70,871	263,970	267,732	250,477	255,360	217,515	205,697	271,256	246,787
Turkey in Europe	41,733	34,905	54,767	139,075	354,457	340,357	392,958	604,775	496,785	461,351	527,488
United Kingdom	387,125,458	405,711,339	483,270,398	540,940,605	511,778,705	533,819,545	631,177,157	548,548,477	524,262,656	537,340,599	523,396,852
NORTH AMERICA:—Bermuda	821,564	924,047	854,832	986,915	1,065,388	1,124,005	1,314,007	1,490,868	1,323,536	1,291,284	1,304,919
British Honduras	402,933	571,615	569,767	576,111	500,802	615,522	813,817	773,676	868,578	1,070,449	1,052,307
Dominion of Canada	52,854,769	59,687,921	64,928,821	83,714,086	87,974,961	95,319,970	105,789,214	109,642,993	123,266,788	131,234,985	140,529,581
Newfoundland and Labrador	1,126,999	1,398,125	1,099,904	1,175,733	1,595,497	2,017,524	1,957,305	2,065,282	2,509,415	2,647,784	2,449,425
Central American States—											
Costa Rica	984,085	1,198,612	1,357,472	1,520,161	1,240,950	1,462,355	1,946,726	1,405,842	1,858,604	1,936,369	1,768,429
Guatemala	2,665,408	3,158,059	3,047,181	1,201,714	1,102,963	785,462	1,424,814	1,680,939	1,128,045	1,281,342	2,654,622
Honduras	645,781	610,621	724,991	752,203	832,016	1,181,453	1,115,009	983,595	956,164	1,527,387	1,730,345
Nicaragua	1,073,467	1,269,015	1,190,695	1,049,505	1,186,511	1,817,869	1,482,194	1,359,356	1,398,723	1,837,682	1,944,556
Panama *a*										979,724	4,745,562
Salvador	1,260,628	1,608,573	1,619,568	796,575	625,414	679,440	738,722	892,923	798,261	937,171	1,318,426
Mexico	15,005,906	19,450,256	22,421,064	21,206,939	25,483,075	34,974,961	36,475,350	39,873,606	42,257,108	45,844,720	45,756,116
West Indies:—British	7,764,178	8,734,153	7,943,299	8,386,240	8,751,817	8,895,164	8,876,052	9,714,963	10,126,221	9,606,921	10,030,288
Cuba	12,807,661	7,530,880	8,259,776	9,561,656	18,616,377	26,513,400	25,964,801	26,623,500	21,761,638	27,377,465	38,380,601
Danish	495,216	537,373	521,765	707,622	498,066	624,524	692,150	704,259	646,206	649,960	699,569
Dutch	619,505	622,761	652,341	544,463	474,435	582,185	647,598	630,472	981,063	798,508	832,808
French	1,589,858	1,530,326	1,679,625	1,617,130	1,542,984	1,867,168	1,851,634	1,690,752	1,654,089	1,672,559	1,357,706
Haiti	5,092,801	4,423,502	3,832,388	2,968,579	2,455,966	2,996,689	3,424,662	2,691,413	2,385,424	2,594,740	2,297,080
Porto Rico *b*	1,833,544	2,102,091	1,988,888	1,505,946	2,685,848	4,640,449	6,861,917	10,882,653	12,245,845	11,210,060	13,974,070
Santo Domingo	1,361,067	1,064,116	1,098,635	1,151,258	1,104,013	1,317,098	1,799,685	1,577,592	1,371,758	1,543,754	1,666,789
SOUTH AMERICA:—Argentina	4,456,163	5,979,046	6,384,984	6,429,070	9,563,510	11,558,237	11,537,663	9,801,804	11,437,570	16,902,017	23,564,056
Bolivia	10,888	21,907	5,155	20,675	31,298	59,223	152,315	89,141	49,107	54,344	106,041
Brazil	15,165,079	14,258,187	12,441,065	13,317,036	12,239,036	11,578,119	11,663,574	10,391,130	10,736,748	11,046,856	10,985,096
Chile	2,794,099	3,431,808	2,590,539	2,351,727	2,107,124	3,287,565	5,294,726	3,714,522	4,038,875	4,824,857	5,391,357
Colombia	2,596,302	3,382,588	3,807,165	3,277,257	3,042,094	2,710,688	3,142,052	2,973,460	4,305,629	4,660,891	3,582,789
Ecuador	735,341	689,416	734,868	855,193	882,591	1,216,008	2,015,085	1,462,105	1,353,162	1,362,908	1,750,378
Guiana—British	1,705,631	1,749,193	1,565,936	1,747,375	1,749,545	1,915,192	1,734,404	1,954,394	1,931,089	1,751,703	1,884,365
Dutch	343,509	361,657	384,336	408,414	443,757	493,985	610,987	490,158	560,833	629,822	530,418
French	86,073	103,854	113,674	150,041	170,090	189,910	200,007	209,917	357,126	238,150	198,567
Paraguay			710	699	10,751	4,884	12,695	16,784	13,021	21,333	39,130
Peru	630,385	999,381	1,108,436	1,302,695	1,325,650	1,662,475	3,126,934	2,558,995	2,971,411	3,961,360	3,657,225
Uruguay	1,262,001	1,481,200	1,213,426	1,214,248	1,242,822	1,816,720	1,637,074	1,586,459	1,505,099	2,135,321	1,990,694
Venezuela	3,740,464	3,838,746	3,417,522	2,746,261	2,851,634	2,452,757	3,271,877	2,793,743	1,878,202	3,165,465	3,213,575
ASIA:—Aden	637,797	510,160	991,397	593,345	993,741	1,490,243	999,898	916,896	1,651,229	1,465,981	1,172,854
Chinese Empire	3,603,840	6,921,933	11,924,433	9,992,894	14,493,440	15,259,167	10,405,834	24,722,906	18,898,163	12,862,432	53,453,385
East Indies—British	2,853,941	3,225,368	3,844,911	4,696,013	4,341,936	4,892,323	6,251,804	4,621,876	4,739,067	6,673,682	7,547,938
Dutch	1,147,315	1,576,316	2,094,109	1,201,416	1,548,973	1,534,149	2,064,705	2,076,091	1,184,886	1,609,718	1,669,805
Hongkong	4,253,040	4,691,201	6,060,039	6,265,200	7,732,525	8,485,978	8,009,848	8,030,109	8,772,453	10,458,554	10,769,554
Japan	4,634,717	7,689,685	13,255,478	20,385,541	17,264,688	29,087,475	19,000,640	21,485,883	20,933,992	24,980,421	51,719,683
Korea		32	509	125,936	141,679	126,965	215,551	251,563	171,400	387,579	1,013,258
Russia, Asiatic	204,937	568,002	413,942	618,015	1,543,126	3,050,102	1,505,842	1,030,220	802,428	332,184	333,451
Turkey in Asia	130,236	41,248	74,899	243,190	167,743	226,655	194,162	169,777	276,322	648,985	360,772
OCEANIA:—British Australasia	9,014,268	12,748,074	17,460,283	15,609,863	19,777,129	26,725,702	30,726,687	28,375,199	32,749,395	27,401,446	26,353,311
Hawaii *b*	3,723,057	3,985,707	4,690,075	5,907,155	9,305,470	13,509,148	(*c*)	(*c*)	10,943,061	11,683,393	11,753,180
Philippine Islands	119,255	162,446	94,597	127,804	404,193	2,640,449	4,027,064	5,258,470	4,038,909	4,832,909	6,200,620
AFRICA:—British Africa	5,203,378	11,290,995	13,106,643	12,027,142	15,155,610	16,269,482	21,654,458	28,780,105	33,844,395	20,821,480	14,678,410
French Africa	328,250	266,213	302,010	668,186	543,555	601,185	843,414	318,592	416,571	431,912	812,334
Portuguese Africa	106,255	800,658	1,869,933	2,898,058	1,505,008	802,164	1,425,539	2,565,224	2,328,369	1,891,707	1,736,758
Turkey in Africa—Egypt	137,694	215,540	323,761	816,915	494,196	1,095,613	1,216,773	1,269,449	692,580	564,957	752,489

a Included with Colombia prior to Jan. 1, 1804. *b* Figures relating to Hawaii and P. R. for years subsequent to 1900 are of shipments from those islands to the U. S. *c* No data.

COUNTRIES.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
EUROPE:—Austria-Hungary	$6,510,319	$7,644,154	$8.158,328	$4,716,510	$6,551,256	$9,079,667	$10,067,970	$10,150,601	$10,569,929	$10.372,689	$10,553,204
Belgium	10,141,485	13,776,014	14,082,414	8,741,826	10,552,030	12,940,806	14,601,711	16,522,206	22,567,337	22,668,342	25,882,455
Denmark	324,827	334,586	356,355	211,877	280,198	920,455	644,993	663,847	599,402	693,536	1,008,750
France	61,580,509	66,266,967	67,530,231	52,730,848	62,146,056	73,012,085	75,458,739	82,880,036	90,050,172	81,410,347	89,830,445
Germany	81,014,065	94,240,833	111,210,614	69,697,378	84,225,777	97,374,700	100,445,902	101,997,523	119,772,511	109,188,554	118,268,356
Greece	327,201	720,386	732,702	910,390	944,521	1,122,855	1,124,775	1,563,142	1,326,935	1,588,946	1,270,792
Italy	20,851,761	22,142,487	19,067,352	20,332,637	24,832,746	27,924,176	24,618,384	30,554,931	36,246,412	33,158,042	38,628,579
Netherlands	15,182,581	13,295,767	12,824,126	12,525,065	14,457,620	15,852,624	20,598,799	19,645,808	22,868,978	19,591,784	21,718,748
Portugal	1,690,668	2 255,731	2,234,291	2,605,370	2,975,504	3,743,216	3,370,430	3,179,449	3,483,562	5,243,587	6,439,207
Russia in Europe	3,575,388	3,627,034	3,199,659	4,539,689	4,540,484	7,245,973	7,030,892	7,308,403	9,234,739	11,763,911	11,653,954
Spain	3,574,126	4,131,184	3,631,973	3,575,565	3,982,363	5,950,047	5,409,301	8,270,546	8,478,587	8,346,173	8,786,507
Sweden and Norway	2,531,327	3,320,321	2,500,118	2,675,053	2,605,555	4,244,302	3,487,639	3,806,179	4,975,234	5,258,114	5,140,161
Switzerland	14,988,954	14,080,033	13,849,782	11,380,835	14,826,480	17,393,268	15,799,400	17,784,855	21,183,328	19,534,439	20,415,268
Turkey in Europe	2,097,702	2,665,127	2,766,094	2,119,337	2,359,830	3,930,866	3,386,782	4,935,346	5,672,578	3,890,597	5,173,252
United Kingdom	159,083,243	169,963,434	167,947,820	108,945,185	118,488,217	159,582.401	143.388.501	165,746,560	190,021,658	165,785,368	175,811,918
NORTH AMERICA:—British Honduras	181,809	200,212	226,683	171,920	198,203	198,040	241,509	234,231	376,967	636,534	539,053
Dominion of Canada	36,574,327	40,887,565	40,309,371	31,870,490	36,220,967	39,369,074	42,482,163	48,076,124	54,781,418	51,552,791	62,469,632
Newfoundland and Labrador	431,836	324,435	413,421	372,115	383,168	562,759	420,315	711,449	868,238	1,146,289	1,184,229
Central American States—											
Costa Rica	3,295,596	3,835,187	3,439,374	2,732,426	3,581,899	2,980.030	2,990.550	3,220,494	3,761,523	3,529,088	4,296,784
Guatemala	2,699,384	2,080,027	1,862,589	1,854,303	2,111,264	2,402,978	3,512,445	2,993,336	2,400,063	2,601,841	3,081,553
Honduras	872,312	776,644	847,230	784,741	911,849	988,606	1,262,317	1,080,788	1,375,997	2,047,981	2,111,312
Nicaragua	1,538,792	1,268,922	1,262,701	1,095,865	1,514,630	1,520,266	2,035,636	1,978,025	1,865,297	1,578,807	1,513,877
Panama *a*										440,747	813,154
Salvador	3,174,677	1,166,970	1,112,534	799,145	1,085,703	738,674	1,037,715	616 887	891,987	948,409	1,113,169
Mexico	15,635,788	17,456,177	18,511,572	19,004,863	22.995,722	28,646,053	28,851,635	40,382,596	41,313,711	43,633,275	46,470,876
West Indies—British	9,777,444	10,800,618	12,285,885	10,632,187	14,150,482	11,894,520	12,851,325	12,178,596	13,450,248	8,304,070	10,437,022
Cuba	52,871,259	40,017,730	18,406,815	15,232,477	25,408,828	31,371,704	43,423,088	34,694,684	62,942,790	76,983,418	86,304,259
Danish	239,775	310,339	367,289	327,759	599,328	568,935	478,262	394,948	734,020	422,307	400,904
Dutch	176,408	163,134	96,343	174,243	246,902	316,186	240,019	207,411	405,831	265,328	193,309
French	27,632	12,786	9 944	30,888	28,735	30,176	13,972	3,245	13,298	14,664	34,529
Haiti	2,746,539	1,697,618	1,460,220	876,582	826,530	1,184,797	1,199,240	1,204,461	1,109,729	1,214,133	1,101,650
Porto Rico *b*	1,506,512	2,296,653	2,181,024	2,414,356	3,179,827	3,078,648	5,883,892	8,378,766	11,051,195	11,722,826	15,633,145
Santo Domingo	1,514,583	2,895,069	2,369,424	2,382,139	3,125,779	3,680,413	3,553,776	2,553,470	2,833,676	2,885,432	4,664,209
SOUTH AMERICA:—Argentina	7,675,270	9,313 385	10,772,627	5,915,879	5,112,561	8,114,304	8,065,318	11,120,721	9,430,278	9,835,161	15,354,901
Brazil	78,831,476	71,060,046	69,039,389	61,750,369	57 875,747	58,073,457	70,643,347	79,178,037	67,221,030	76,152,745	99,843,094
Chile	4,465,561	4,709,017	3,792,434	3,736,307	2,942,962	7,112,826	8,683,279	7,740,759	9,380,204	10,775,810	11,071,613
Colombia	3,713,682	4,970,092	4,730,993	5,183,604	5,126,731	4,307,814	3,230,652	3,271,894	4,215 568	7,949,211	6,411,793
Ecuador	821,666	763 643	566,526	765,590	1,054,653	1,524,378	1,424,840	1,546,564	1,724,851	2,350,493	2,502,175
Guiana—British	2,521,704	3,418,578	3,661,956	3,060,968	3,500 207	3,795,358	4,805,395	3,416,816	3,351,656	1,446.123	1,512,541
Dutch	855,508	957,247	1,036,688	1,457,135	1,651,009	1,230,412	1,272,731	1,386,870	874,454	413,636	638,667
French	25,055	31,419	8,137	12,551	37,929	37,564	54,018	26,648	25,030	17,842	37,141
Paraguay	10,274				160		1,740	1,959	2,887	416	2,205
Peru	473,315	712,696	722,089	714,247	1,496,978	2,122,543	3,656,180	3,269,411	2,900,664	2,899,915	3,152,964
Uruguay	2,699,648	3,242,428	3,515 054	1,772,480	1,281,109	1,848,077	1,883,994	2,520,579	2,981,632	1,644,413	3,158,856
Venezuela	10,073,951	9,649,911	9,543,572	7,722,564	6,507,847	5,500,019	6,645,848	6,287,121	5,318,569	6,878,348	7,109,850
ASIA:—Aden	1,382,673	1,656,100	1,503,802	2,017,756	1,924,941	1,542,335	1,520,629	1,930,644	2,328,654	2,044,528	2,208,986
Chinese Empire	20,545,829	22,023,004	20,403,862	20,326,436	18,619,268	26,896,926	18,303,706	21,055,830	26,648,846	29,345,081	27,884,518
East Indies—British	21,266,013	20,370,558	20,567,122	27,238,459	32,560,312	45,355,976	43,882,493	48,421,218	51,826,773	47,675,328	53,690,211
Dutch	7,727,282	14,854,026	15,604,866	14,529,335	21,313,945	27,886,814	19,026,481	14,749,241	16,232,332	10,325,672	18,462,648
Hongkong	776,476	1,419,124	923,842	746,517	2,479,274	1,256,267	1,416,412	1,277,755	1,359,905	1,519,212	1,552,428
Japan	23,695,957	25,537,038	24,009,756	25,223,610	26,716,814	32,748,902	29,229,543	37,552,778	44,143.728	46,537,478	51,821,629
Turkey in Asia	3,089,951	3,266,205	4,009,027	2,325,078	3,284.250	3,823,371	3,897.854	3,960.394	4,897,428	5,696,529	6,021,876
OCEANIA: British Australasia	4,620,828	7,579,359	5,900,144	5,578,898	3,502,402	5,468,196	4,767,661	5,386,509	6,968,183	7,134.408	11,892,914
British Oceania								1,476,716	2.097.861	487,640	58,329
French Oceania	209,771	251,312	378,144	185,121	290.557	437,707	657,336	678,884	579,457	621,698	727,073
Guam					10,649	1,320	1,044				
Hawaii *b*	7,888,961	11,757,704	13,687,799	17,187,380	17,831,463	20,707,903	(*c*)	(*c*)	26,242,869	25,157,255	36,112,055
Philippine Islands	4,731,366	4,982,857	4,383,740	3,830,415	4,409,774	5.971,208	4,420,912	6,612,700	11,372,584	12,066,947	12,657,904
AFRICA:—British Africa	776,114	1,732,147	1,468,994	875,338	1,306,746	1,039,182	813,440	979,361	971,908	848,987	1,598,363
Turkey in Africa—Egypt	3,628,462	8,043,797	7,027,005	5,017,707	7,489,929	8,278,022	7,212,279	11,368,301	10,714,205	7,868,244	8,580,751

a Included with Colombia prior to Jan. 1, 1904. *b* Figures relating to Hawaii and P. R. for years subsequent to 1900 are of shipments from those islands to the U.S. *c* No Data.

Principal Articles Forming the Import and Export Trade of the United States.

NOTE.—The tables which follow show the movements in the principal articles forming the imports and exports of the United States for specified years. The articles enumerated form more than three fourths of the total value of the imports and exports of the country, and these tables showing the movements in such articles at intervals for a long term of years offer facilities for an analysis of that trade.]

IMPORTS INTO, AND DOMESTIC EXPORTS FROM, THE UNITED STATES OF PRINCIPAL ARTICLES OF MERCHANDISE, FOR SPECIFIED FISCAL YEARS, 1875 TO 1905.

IMPORTS.

ARTICLES	1875	1880	1885	1890	1895	1900	1902	1903	1904	1905
Chemicals, drugs, and dyes	$29,204,113	$41,351,616	$35,070,816	$41,602,078	$43,567,609	$53,705,152	$57,723,622	$64,351,199	$65,294,558	$64,779,559
Coffee	50,591,488	60,360,769	46,723,318	78,267,432	96,130,717	52,467,943	70,982,155	59,200,749	69,551,799	84,654,062
Cotton, manufactures of	27,738,401	31,376,693	27,197,241	29,918,055	33,196,625	41,296,239	44,460,126	52,462,755	49,524,246	48,919,936
Earthen, stone, and china ware	4,265,210	5,650,267	4,837,782	7,030,301	8,956,106	8,645,265	9,680,156	10,512,052	12,005,014	11,659,723
Fibers:										
Manufactures of	19,438,557	25,753,727	20,637,729	28,514,200	26,290,994	31,559,371	39,036,364	39,334,521	40,308,837	40,125,406
Unmanufactured	6,353,608	9,592,868	12,362,498	20,541,767	13,282,081	26,373,805	31,545,962	34,462,513	37,814,285	38,118,071
Fish	3,008,615	3,403,952	4,805,635	5,289,835	5,725,338	7,420,453	8,527,097	8,635,583	9,889,697	10,498,076
Fruits, including nuts	13,093,837	14,069,187	16,705,574	20,746,471	17,239,923	19,263,592	21,480,525	23,726,636	24,435,854	25,937,456
Furs, and manufactures of	4,530,753	6,424,112	5,257,547	7,553,816	10,322,157	12,060,124	15,623,601	15,301,912	14,763,002	18,306,302
Hides and skins, other than fur skins	18,536,902	30,002,254	20,586,443	21,881,886	26,122,942	57,940,316	58,006,618	58,031,613	52,006,070	64,764,146
India rubber and gutta-percha, crude	4,675,190	9,606,239	9,095,256	14,854,512	18,475,382	31,792,697	25,151,559	31,004,541	41,049,434	50,729,873
Iron and steel, and manufactures of	18,475,733	54,060,720	33,610,093	41,679,501	23,048,515	20,478,728	27,180,247	51,617,312	27,028,312	23,510,164
Jewelry and precious stones	4,299,976	7,174,884	7,262,942	13,744,439	8,074,788	17,783,076	25,990,570	34,314,652	25,675,429	35,065,158
Leather, and manufactures of	10,245,597	12,205,033	10,416,885	12,436,080	13,819,038	13,292,196	11,317,785	11,294,167	11,100,215	11,666,233
Oils	2,044,840	2,830,473	3,259,624	3,359,953	5,119,637	6,817,780	9,300,198	12,283,957	11,179,442	11,593,520
Silk:										
Manufactures of	24,380,923	32,188,690	27,467,565	38,686,374	31,206,002	30,894,373	32,640,242	35,963,552	31,973,680	32,614,540
Unmanufactured	4,560,102	13,273,135	12,886,229	24,325,531	22,626,056	45,329,760	42,635,351	50,011,050	46,100,500	61,040,053
Spirits, malt liquors, and wines	9,511,647	8,420,017	9,379,223	13,600,310	11,429,123	12,758,582	15,246,640	17,171,617	16,662,702	17,652,323
Sugar	70,016,959	78,853,466	72,519,514	96,094,532	76,462,836	100,250,974	55,061,097	72,088,973	71,915,753	97,645,449
Tea	22,673,703	19,782,631	14,047,583	12,317,493	13,171,379	10,558,110	9,390,128	15,659,229	18,229,310	16,230,858
Tin, in bars, blocks, or pigs	2,327,212	6,223,176	4,283,460	6,898,909	6,787,424	19,104,301	19,461,850	23,618,802	21,486,311	23,378,471
Tobacco, unmanufactured	3,724,879	4,911,086	6,301,988	17,605,192	14,745,720	13,297,223	15,211,671	17,234,915	16,939,487	18,038,677
Wood, and manufactures of	8,344,146	9,761,948	12,629,062	17,241,916	17,814,119	20,591,908	24,445,599	28,746,271	26 984,353	29,564,323
Wool:										
Manufactures of	44,609,704	33,911,093	35,776,559	56,582,432	36,543,084	16,164,446	17,384,463	19,546,385	17 733,788	17,893,663
Unmanufactured	11,071,259	23,727,650	8,879,923	15,264,083	25,556,421	20,260,936	17,711,788	22,152,961	24 813,591	46,225,558

DOMESTIC EXPORTS.

ARTICLES.	1875	1880	1885	1890	1895	1900	1902	1903	1904	1905
Agricultural implements	$2,625,372	$2,245,742	$2,561,602	$3,859,184	$5,413,075	$16,099,149	$16,286,740	$21,006,622	$22,749,635	$20,721,741
Animals	2,672,505	15,882,120	14,567,081	33,638,128	35,754,045	43,585,031	44,871,684	34,781,193	47,977,875	46,728,281
Breadstuffs	111,458,265	288,036,835	160,370,821	154,925,927	114,604,780	262,744,078	213,134,344	221,242,285	149,050,378	107,732,910
Cars, carriages, and other vehicles	1,181,436	1,407,425	1,864,528	4,746,678	2,382,714	9,905,610	9,872,516	10,499,195	10,936,618	10,610,437
Chemicals, drugs, dyes, and medicines	3,757,935	4,174,076	4,806,193	6,224,504	8,189,142	13,203,610	13,288,218	13,697,601	14,480,323	15,859,422
Coal	2,620,569	2,058,080	4,575,962	6,856,088	11,098,627	19,502,813	20,765,461	21,206,498	27,820,323	29,158,322
Copper and manufactures of	1,085,688	793,455	5,447,423	2,349,392	14,468,703	57,852,960	41,218,373	39,667,196	57,142,081	86,225,291
Cotton:										
Manufactures of	4,071,882	10,467,651	11,836,591	9,999,277	13,789,810	24,003,087	32,108,362	32,216,304	22,403,713	49,666,080
Unmanufactured	190,638,625	211,535,905	201,962,458	250,968,792	204,900,990	241,832,737	290,651,819	316,180,429	370,811,246	379,965,014
Fertilizers	616,376	603,668	910,778	1,618,681	5,741,262	7,218,224	6,256,035	6,724,301	7,112,512	7,620,886
Fish	3,165,065	4,018,825	4,892,919	6,040,826	4,501,830	5,427,469	6,563,199	6,717,274	7,857,041	6,527,863
Fruits, including nuts	1,634,003	2,090,634	3,515,708	4,059,547	4,971,791	11,642,662	8,719,344	18,057,677	20,678,665	15,606,586
Iron and steel, and manufactures of	19,534,215	14,716,524	16,592,155	25,542,208	32,000,989	121,913,548	98,552,562	96,642,467	111,948,586	134,728,363
Leather, and manufactures of	7,324,796	6,760,186	9,692,408	12,438,847	15,614,407	27,293,010	29,798,323	31,617,389	33,980,615	37,936,745
Mineral oils	30,078,568	36,218,625	50,257,947	51,403,089	46,660,082	75,611,750	72,302,822	67,253,533	79,060,409	79,793,222
Naval stores	4,826,169	4,585,062	4,984,794	7,444,446	7,419,773	12,474,194	11,733,562	12,918,708	16,145,222	16,106,643
Oil cake and oil-cake meal *a*	5,138,300	6,282,892	6,674,466	7,999,926	7,166,087	16,757,519	19,779,142	19,743,711	16,899,257	21,498,085
Paper, and manufactures of	740,258	1,183,140	972,493	1,226,686	2,185,257	6,215,833	7,312,030	7,180,014	7,543,728	8,238,088
Paraffin and paraffin wax	.....	.....	1,725,344	2,408,709	3,569,614	8,602,723	8,858,844	9,411,294	8,859,964	7,789,160
Provisions	83,100,065	129,887,277	107,332,456	136,264,506	135,216,270	184,453,055	199,861,378	179,839,714	176,027,586	169,998,873
Seeds	1,291,015	2,776,823	2,166,674	2,637,888	2,849,145	7,036,982	8,027,824	9,455,283	2,583,325	2,557,747
Tobacco:										
Manufactures of	2,602,921	2,063,166	2,741,519	3,876,045	3,953,155	6,010,141	5,668,853	5,193,796	5,042,719	5,690,203
Unmanufactured	25,241,549	16,379,107	22,025,786	21,479,556	25,798,968	29,422,371	27,103,996	35,250,893	29,640,812	29,800,816
Vegetable oils	464,905	3,476,240	2,932,267	5,672,441	7,342,112	16,345,056	15,308,633	16,234,362	12,618,381	16,632,232
Wood, and manufactures of	17,740,085	16,237,376	21,464,322	28,274,529	27,115,907	50,598,416	47,779,848	57,743,535	65,428,417	58,002,977

a Not including corn-oil cake.

Exports of Principal Manufactures from the United States, to the Grand Divisions, 1905.

ARTICLES.	Europe.	North America.	South America.	Asia.	Oceania.	Africa.	Total.
Agricultural implements	$10,721,628	$2,503,412	$5,608,201	$167,290	$1,183,902	$537,308	$20,721,741
Art works: Paintings and statuary	161,861	233,369	5,361	7,967	1,608	427	410,593
Blacking	222,059	214,464	66,128	9,763	72,259	14,693	599,366
Books, maps, engravings, etc	1,540,340	2,561,797	284,734	124,594	285,260	47,435	4,844,160
Brass, and manufactures of	1,266,831	1,541,228	63,187	60,185	82,265	12,068	3,025,764
Bricks	9,434	617,457	6,906	811	4,478	3,415	642,501
Brooms and brushes	52,071	180,381	22,928	6,154	34,637	30,912	327,083
Candles	3,280	295,818	21,693	33,007	33,401	314,158	701,357
Cars, carriages, other vehicles, and parts of	3,099,323	3,820,434	1,619,715	816,442	868,238	386,285	10,610,437
Cement	150	1,387,402	63,940	625	14,088	18,590	1,484,795
Chemicals, drugs, dyes, medicines, etc	6,446,844	4,625,503	1,669,702	507,665	905,470	295,306	14,450,490
Clocks and watches	536,353	938,634	217,407	367,868	218,664	37,488	2,316,414
Coke	632	2,226,697	1,113	.....	.....	.....	2,228,442
Coffee and cocoa, prepared	2,462	310,448	5,766	30,389	11,326	1,879	362,270
Copper, manufactures of	70,882,081	3,215,889	105,785	11,870,997	143,073	7,466	86,225,291
Cotton, manufactures of	2,431,642	9,127,557	4,184,474	31,354,975	1,981,082	586,350	49,666,080
Dental goods	512,288	45,048	131,993	9,817	75,561	2,912	777,619
Earthen, stone, and china ware	137,617	614,929	42,742	20,766	36,754	28,019	880,827
Fertilizers, other than crude	28,741	639,910	.....	62,365	207	3,389	734,612
Emery wheels	227,362	21,099	7,589	12,812	17,531	950	287,343
Fiber, manufactures of	1,640,973	2,550,620	2,187,690	125,820	193,031	68,675	6 766,809
Glass and glassware	300,381	1,461,163	243,911	59,570	162,876	24,898	2,252,799
Gunpowder and other explosives	101,561	1,570,205	475,026	52,089	344,110	16,846	2,559,837
India rubber, manufactures of	2,719,828	1,673,456	185,130	360,172	385,683	184,395	5,508,664
Ink	104,304	187,814	32,686	72,885	38,514	2,683	438,886
Instruments and apparatus for scientific purposes	3,600,871	2,468,634	992,781	431,801	537,118	141,775	8,172,980
Iron and steel, manufactures of	37,679,956	56,887,006	12,317,128	16,063,414	8,042,766	3,738,093	134,728,363
Jewelry and gold and silver, manufactures of	356,976	941,583	78,965	21,144	17,646	2,911	1,419,225
Lamps, chandeliers, etc	227,976	713,092	176,655	178,480	208,753	74,169	1,579,125
Lead, manufactures of	83,799	365,318	66,152	95,194	54,387	2,344	667,194
Leather, and manufactures of	23,155,163	6,590,420	992,265	5,354,058	1,416,229	428,610	37,936,745
Malt liquors	10,521	606,620	34,354	156,719	193,619	10,975	1,012,808
Marble and stone, manufactures of	511,731	341,040	34,379	17,470	122,752	27,848	1,055,220
Musical instruments	1,880,888	747,485	74,043	44,002	321,115	77,254	3,144,787
Oilcloths	26,991	121,962	48,243	35,084	35,267	2,382	269,929
Oils, mineral, refined or manufactured	40,888,884	3,087,296	6,753,451	17,175,402	3,443,550	2,085,204	73,433,787
Paints, pigments, and colors	1,427,155	967,154	161,383	117,832	320,667	132,126	3,126,317
Paper, and manufactures of	2,753,171	3,241,007	742,392	365,321	996,103	140,094	8,238,088
Parafin and paraffin wax	6,437,152	548,622	31,284	453,686	202,136	116,280	7,789,160
Perfumery and cosmetics	79,905	178,043	112,494	81,569	18,748	19,538	490,297
Plated ware	101,294	350,234	126,307	19,577	92,637	13,734	703,783
Silk, manufactures of	25,930	539,814	25,049	5,374	24,380	25	620,572
Soap	1,309,227	724,242	298,292	107,195	201,873	29,402	2,670,231
Spirits, distilled	816,405	388,178	22,580	124,788	84,427	1,135,774	2,572,152
Starch	1,305,054	110,269	2,722	2,038	6,900	3,589	1,430,572
Straw and palm leaf, manufactures of	29,019	459,325	7,223	516	4,642	1,407	502,132
Sugar, refined and confectionery	395,521	595,755	50,345	108,088	66,984	245,966	1,462,659
Tin, and manufactures of	135,662	427,353	23,120	61,072	33,822	20,573	751,602
Tobacco, manufactures of	635,380	526,306	73,410	2,456,621	1,805,904	192,582	5,696,203
Toys	277,827	143,999	15,741	14,705	42,296	12,070	506,638
Varnish	538,202	170,638	29,740	11,308	33,342	8,348	791,578
Vessels sold abroad	610,473	99,424	62,906	6,219	1,975	5,183	786,180
Wood, manufactures of	4,993,302	4,707,391	760,303	197,919	1,042,405	862,310	12,563,630
Wool, manufactures of	182,514	1,603 098	115,942	72,340	39,634	21,526	2,035,054
Zinc, manufactures of	1,068,856	205,074	9,904	33,249	2,180	356	1,319,619
All other articles	4,334,459	1,764,786	357,377	538,216	197,694	120,633	7,313,165
Total	$239,080,310	$133,185,902	$41,850,737	$90,485,429	$26,705,969	$12,299,628	$543,607,975

Imports and Exports—Dominion of Canada.

Total value of Imports and Exports of Canada by countries for the year ending March 31st, 1908 (including coin and bullion and estimated amount short returned).

Countries.	Imports.			Exports.		
	Dutiable Goods.	Free Goods.	Total.	Produce of Canada.	Foreign Produce.	Total.
Great Britain	$72,138,087	$23,717,800	$95,855,887	$126,194,124	$8,290,032	$134,484,156
Australia	322,815	214,120	536,935	2,856,709	16,752	2,873,461
Bermuda	.....	.....	.....	378,471	20,119	398,590
British Africa	132	32,061	32,193	2,003,598	7,784	2,011,382
British East Indies	1,155,897	2,880,970	4,036,867	29,800	305	30,105
British West Indies	5,965,392	1,246,409	7,211,801	2,449,646	33,472	2,483,118
British Guiana	2,076,363	5,640	2,082,003	601,395	5,955	607,350
British Honduras	.....	.....	.....	4,197	.....	4,197
British Possessions, all other	1,549	1,298	2,847	19,640	65	19,705
Fiji Islands	1,039,607	1,712	1,041,319	137,499	126	137,625
Gibraltar	90	.....	90	.....	.....	.....
Hongkong	268,561	6,856	275,417	265,722	1,811	267,533
Malta	.....	.....	.....	28,903	.....	28,903
Newfoundland	18,227	1,759,432	1,777,659	3,212,635	195,883	3,408,518
New Zealand	2,708	254,336	257,044	990,551	2,891	993,442
Total British Empire	$32,980,428	$30,120,634	$113,110,062	$139,172,890	$8,575,195	$147,748,085
Arabia	$98	$19,730	$19,828	.....	.....	.....
Argentina	756	871,270	872,026	$2,264,122	$2,823	$2,266,945
Austria-Hungary	1,327,573	38,360	1,365,933	11,315	262	11,577
Belgium	1,661,614	744,357	2,405,971	2,248,747	1,128,732	3,377,479
Bolivia	.....	.....	.....	1,222	.....	1,222
Brazil	2,402	348,218	350,620	966,882	2,119	969,001
Cape Verde Islands	.....	.....	.....	16,898	.....	16,898
Central American States	.....	84,916	84,916	85,457	.....	85,457
Chile	.....	117,365	117,365	273,909	99	274,008
China	362,352	362,574	724,926	954,262	10,531	964,793
Cuba	407,886	107,277	515,163	1,353,442	12,877	1,366,319
Denmark	9,818	32,680	42,498	222,616	60	222,676
Danish West Indies	870	.....	870	36,547	31	36,578
Dutch East Indies	307,824	8,739	316,563	1,000	.....	1,000
Dutch West Indies	.....	2,231	2,231	571	.....	571
Dutch Guiana	.....	.....	.....	35,731	.....	35,731
Ecuador	2,035	.....	2,035	2,509	.....	2,509
Egypt	39,455	606	40,061	40,718	377	41,095
France	8,797,722	1,453,995	10,251,717	1,762,832	43,900	1,806,732
French Africa	250	14,546	14,796	22,420	.....	22,420
French East Indies	.....	5,911	5,911	.....	.....	.....
French West Indies	.....	.....	.....	6,988	.....	6,988
Germany	6,498,340	1,752,405	8,250,745	1,959,891	414,716	2,374,607
German Africa	.....	.....	.....	1,628	.....	1,628
Greece	409,591	100	409,691	304	.....	304
Hawaii	557	11,536	12,093	65,006	.....	65,006
Hayti	30	.....	30	41,004	.....	41,004
Holland	951,727	560,418	1,512,145	732,409	122,676	855,085
Iceland	.....	1,573	1,573	.....	.....	.....
Italy	431,287	375,194	806,481	347,238	2,601	349,839
Japan	1,075,421	1,121,738	2,197,159	734,868	6,240	741,108
Korea	.....	.....	.....	8,790	.....	8,790
Madeira	.....	.....	.....	36,802	.....	36,802
Mexico	95,732	824,094	919,826	475,147	1,972	477,119
Norway	89,454	13,649	103,103	195,415	50	195,465
Panama	.....	.....	.....	90,535	1,783	92,318
Persia	9,134	.....	9,134	.....	.....	.....
Peru	.....	20	20	117,445	1,060	118,505
Philippines	11,391	.....	11,391	180,614	.....	180,614
Porto Rico	6,480	252	6,732	540,414	3,300	543,714
Portuguese	.....	.....	.....	2,784	.....	2,784
Portugal	135,067	19,167	154,234	46,865	.....	46,865
Roumania	181	1,101	1,282	10,463	.....	10,463
Russia	62,901	252,988	315,889	424,793	275	425,068
Samoan Islands	.....	.....	.....	501	.....	501
Santo Domingo	.....	.....	.....	65,597	.....	65,597
St. Pierre	33,986	4,169	38,155	127,616	7,062	134,678
Siam	.....	.....	.....	986	.....	986
Spain	1,079,550	69,025	1,148,575	106,594	.....	106,594
Spanish Africa	.....	.....	.....	38,645	.....	38,645
Sweden	148,132	43,990	192,122	98,805	.....	98,805
Switzerland	2,721,826	37,936	2,759,762	16,414	1,250	17,664
Turkey	319,414	216,000	535,414	5,151	.....	5,151
Uruguay	325	276,715	277,040	111,196	.....	111,196
United States of Colombia	.....	24,787	24,787	53,112	18	53,130
United States	120,927,305	99,863,904	220,791,209	90,814,871	22,705,629	113,520,500
Venezuela	.....	64,441	64,441	27,987	.....	27,987
Total, other countries	$147,928,486	$109,747,977	$257,676,463	$107,788,078	$24,470,443	$132,258,521
Grand total	$230,917,914	$139,868,611	$370,786,525	$246,960,968	$33,045,638	$280,006,606

ITEMS.	1800	1820	1830	1840	1850	1860	1870	1880	1890	1900	1909
Area *a*.....sq. miles..	827,844	2,059,043	2,059,043	2,059,043	2,980,959	3,025,600	3,025,600	3,025,600	3,025,600	3,025,600	3,026,789
Population *b*.....	5,308,483	9,638,453	12,866,020	17,069,453	23,191,876	31,443,321	38,558,371	50,155,783	62,622,250	76,303,387	88,566,034
Population, square mile *b*.....	6.41	4.68	6.25	8.29	7.78	10.39	12.74	16.57	20.70	25.22	29.16
Wealth *bc*.....$..	.....	.....	.....	.....	7,135,780,000	16,159,616,000	30,068,518,000	42,642,000,000	65,037,091,000	*d* 94,300,000,000	*q* 107,104,211,917
Wealth per capita *bc*.....$..	.....	.....	.....	.....	307.69	513.93	779.83	850.20	1,038.57	1,235.86	*q* 1,310.11
Debt, less cash in Treas. *e*....$..	82,976,294	91,015,566	48,565,407	3,573,344	63,452,774	59,964,402	2,331,169,956	1,919,326,748	890,784,371	1,107,711,258	1,023,861,531
Debt per capita.....$..	15 63	9.42	3.77	0.21	2.74	1.91	60.46	38.27	14.22	14.52	11.56
Interest-bearing debt *f*.....$..	82,976,294	91,015,566	48,565,406	3,573,344	63,452,774	64,640,838	2,046,455,722	1,723,993,100	725,313,110	1,023,478,860	913,317,490
Annual interest charge.....$..	3,402,601	5,151,004	1,912,575	174,598	3,782,393	3,443,687	118,784,960	79,633,981	29,417,603	33,545,130	21,275,602
Interest per capita.....$..	0 64	0.53	0.15	0.01	0.16	0.11	3.08	1.59	0 47	0.44	.24
Gold coined.....$..	317,760	1,319,030	643,105	1,675,483	31,981,739	23,473,654	23,198,788	62,308,279	20,467,183	99,272,943	88,776,908
Silver coined.....$..	224,296	501,681	2,495,400	1,726,703	1,866,100	2,259,390	1,378,256	27,411,694	39,202,908	36,345,321	8,087,853
Gold in circulation *g*.....$ }	16,000,000	22,300,000	26,344,295	79,336,916	147,395,456	*h* 228,304,775	*h* 25,000,000	{ 225,695,779	374,258,923	610,806,472	599,337,698
Silver in circulation *g*.....$ }								{ 68,622,345	110,311,336	142,050,334	204,319,698
Gold certs. in circulation.....$..	.....	.....	.....	.....	.....	.....	.....	7,963,900	130,830,859	200,733,019	815,005,449
Silver certs. in circulation...$..	.....	.....	.....	.....	.....	.....	.....	5,789,569	297,556,238	408,465,574	477,717,324
U. S. notes outstanding.....$..	.....	.....	.....	.....	.....	.....	324,962,638	327,895,457	334,688,977	313,971,545	340,118,267
Nat. bk. notes outstanding...$..	.....	.....	.....	.....	.....	.....	288,648,081	337,415,178	181,604,937	300,115,112	665,538,806
Miscellaneous currency *i*....$..	10,500,000	44,800,000	61,000,000	106,968,572	131,366,526	207,102,477	36,602,075	.....	.....	79,008,942	4,203,415
Circulation of money.....$..	26,500,000	67,100,000	87,344,295	186,305,488	278,761,982	435,407,252	675,212,794	973,382,228	1,429,251,270	2,055,150,998	3,106,240,657
Per capita.....$..	5.00	6.94	6.79	10.91	12.02	13.85	17.50	19.41	22.82	26.94	34.93
National banks.....no..	.....	.....	.....	.....	.....	.....	1,612	2,076	3,484	3,732	6,926
Capital.....$..	.....	.....	.....	.....	.....	.....	427,235,701	455,909,565	642,073,676	621,536,461	937,004,036
Bank clearings, New York...$..	.....	.....	.....	.....	.....	7,231,143,057	27,804,539,406	37,182,128,621	37,660,686,572	51,964,588,564	99,257,662,400
Total, United States.....$..	.....	.....	.....	.....	.....	.....	.....	.....	58,845,279,505	84,582,450,081	158,559,487,500
Deposits in nat. banks.....$..	.....	.....	.....	.....	.....	.....	542,261,563	833,701,034	1,521,745,665	2,458,092,758	4,898,576,696
Savings banks.....$..	.....	1,138,576	6,973,304	14,051,520	43,431,130	149,277,504	549,874,358	819,106,973	1,550,023,956	2,389,719,954	3,713,405,710
Depositors, savings banks..no..	.....	8,635	38,085	78,701	251,354	693,870	1,630,846	2,335,582	4,258,893	6,107,083	8,831,863
Farms and farm prop'ty *b*....$..	.....	.....	.....	.....	3,967,343,580	7,980,493,060	8,944,857,749	12,180,501,538	16,082,267,689	20,514,001,838	.....
Farm products, value *b*.....$..	.....	.....	.....	.....	.....	.....	1,958,030,927	2,212,540,927	2,460,107,454	3,764,177,706	8,760,000,000
Mfg. establishments *b*.....no..	.....	.....	.....	.....	123,025	140,433	252,148	253,852	355,415	512,734	216,262
Value of products *b*.....$..	.....	.....	.....	.....	1,019,106,616	1,885,861,676	4,232,325,442	5,369,579,191	9,372,437,283	13,039,279,566	14,802,147,087
Receipts—net ordinary *j*.....$..	10,848,749	17,840,670	24,844,117	19,480,115	43,592,889	56,054,600	395,959,834	333,526,501	403,080,983	567,240,852	603,589,490
Customs.....$..	9,080,933	15,005,612	21,922,391	13,499,502	39,668,686	53,187,512	194,538,374	186,522,065	229,668,585	233,164,871	300,711,934
Internal revenue.....$..	809,397	106,261	12,161	1,682	.....	.....	184,899,756	124,009,374	142,606,706	295,327,927	246,212,641
Expenditures—Net ord *k*....$..	7,411,370	13,134,531	13,229,533	24,139,920	37,165,990	60,056,755	164,421,507	169,090,062	261,637,203	447,553,458	662,324,445
War.....$..	2,560,879	2,630,392	4,767,129	7,095,267	9,687,025	16,472,203	57,655,675	38,116,916	44,582,838	134,774,768	161,067,462
Navy.....$..	3,448,716	4,387,990	3,239,429	6,113,897	7,904,725	11,514,650	21,780,230	13,536,985	22,006,206	55,953,078	115,546,011
Pensions.....$..	64,131	3,208,376	1,363,297	2,603,562	1,866,886	1,100,802	28,340,202	56,777,174	106,936,855	140,877,316	161,710,367
Int. on public debt.....$..	3,402,601	5,151,004	1,912,575	174,598	3,782,393	3,144,121	129,235,498	95,757,575	36,099,284	40,160,333	21,803,826
Imports of merchandise.....$..	91,252,768	74,450,000	62,720,956	98,258,706	173,509,526	353,616,119	435,958,408	667,954,746	789,310,409	849,941,184	1,311,920,224
Per capita *l*.....$..	17.19	7.71	4.87	5.76	7.48	11.25	11.06	12.51	12.35	10.88	14.47
Exports of merchandise.....$..	70,971,780	69,691,669	71,670,735	123,668,932	144,375,726	333,576,057	392,771,768	835,638,658	857,828,684	1,394,483,082	1,663,011,104
Per capita *m*.....$..	13.37	7.22	5.57	7.25	6.23	10.61	9.77	16.43	13.50	17.96	18.50
Imports—Silk, raw.....lbs..	.....	.....	.....	.....	.....	.....	583,589	2,562,236	7,510,440	13,073,718	25,187,957
Rubber, crude.....lbs..	.....	.....	.....	.....	.....	.....	9,624,098	16,826,099	33,842,374	49,377,138	88,359,895
Tin plates.....lbs..	.....	.....	.....	.....	.....	.....	150,932,768	379,902,880	680,060,925	147,963,804	117,312,174
Iron, steel, and mfrs. of...$..	.....	.....	6,346,287	8,157,923	20,145,067	26,158,235	40,273,682	71,266,699	41,679,591	20,478,728	22,439,787
Domestic exports—Iron, Steel and manufactures of.....$..	52,144	46,552	322,747	1,127,877	1,953,702	5,870,114	13,483,163	14,716,524	25,542,208	121,913,548	144,951,357
Agricultural products.....$..	25,590,534	41,603,749	46,977,332	92,548,067	108,605,713	256,560,972	361,188,483	685,961,091	629,820,808	835,858,123	903,238,122
Manufactures.....$..	2,493,755	3,945,793	6,641,016	11,149,621	17,580,456	40,345,892	68,279,764	102,856,015	151,102,376	433,851,756	1,638,355,593
Farm animals—Value.....$..	.....	.....	.....	.....	544,180,516	1,089,329,915	1,524,960,149	1,576,917,556	2,418,766,028	2,228,123,134	4,525,259,000
Cattle.....no..	.....	.....	.....	14,971,586	17,778,907	25,616,019	25,484,100	33,258,000	52,801,907	43,902,414	71,099,000
Horses.....no..	.....	.....	.....	*n* 4,335,669	4,336,719	6,249,174	8,248,800	11,201,800	14,213,837	13,537,524	20,640,000

ITEMS.	1800	1820	1830	1840	1850	1860	1870	1880	1890	1900	1909
Sheep.....no..	.....	.....	.....	19,311,374	21,723,220	22,471 275	40,853,000	40,765,900	44,336,072	41,883,065	56,084,000
Mules.....no..	.....	.....	.....	.....	559,331	1,151,148	1,179,500	1,729,500	2,331,027	2,086,027	4,053,000
Swine.....no..	.....	.....	.....	26,301,293	30,354,213	33,512,867	26,751,400	34,034,100	51,602,780	37,079,356	54,147,000
Production of gold.....$..	.....	*o* 73,112	*o* 564,950	*o* 11,697,829	50,000,000	46,000,000	50,000,000	36,000,000	32,845,000	79,171,000	99,232,200
Silver.....$..	.....	.....	.....	.....	50,000	150,000	16,000,000	39,200,000	70,485,714	74,533,495	28,010,100
Coal *p*.....tons..	.....	365	179,734	864,379	3,358,899	8,513,123	32,863,000	63,822,830	140,866,931	240,789,309	371,288,123
Petroleum.....galls..	.....	.....	.....	.....	.....	21,000,000	220,951,290	1,104,017,166	1,924,552,224	2,661,233,568	*w*7,542,044,118
Pig iron.....tons..	.....	20,000	165,000	286,903	563,755	821,223	1,665,179	3,835,191	9,202,703	13,789,242	25,795,471
Steel.....tons..	.....	.....	.....	.....	.....	.....	68,750	1,247,335	4,277,071	10,188,329	*v*14,023,247
Tin plates.....lbs..	.....	.....	.....	.....	.....	.....	.....	.....	*r* 2,236,743	677,969,600	*w*1,203,075,000
Copper.....tons..	.....	.....	.....	*s* 100	650	7,200	12,600	27,000	115,966	270,588	*w*420,791
Wool.....lbs..	.....	.....	.....	35,802,114	52,516,959	60,264,913	162,000,000	232,500,000	276,000,000	288,636,621	72,194,746
Wheat.....bush..	.....	.....	.....	84,823,272	100,485,944	173,104,924	235,884,700	498,549,868	399,262,000	522,229,505	737,189,000
Corn.....bush..	.....	.....	.....	377,531,875	592,071,104	838,792,740	1,094,255,000	1,717,434,543	1,489,970,000	2,105,102,516	2,772,376,000
Cotton.....bales..	155,556	606,061	976,845	2,177,835	2,333,718	4,861,292	3,114,592	5,761,252	7,311,322	9,436,416	13,241,799
Cane Sugar.....tons..	.....	.....	.....	69,246	110,526	119,040	46,800	92,802	136,503	149,191	*t* 414,400
Sugar consumed.....tons..	.....	.....	69,711	107,177	239,409	428,785	607,834	956,784	1,476,377	2,219,847	3,641,713
Cotton taken by mills...bales..	.....	.....	.....	.....	595,060	979,000	857,000	1,795,000	2,325,000	3,644,000	5,241,000
Domestic cotton exp't'd...lbs..	.....	.....	298,459,102	743,941,061	635,381,604	1,767,686,338	958,558,523	1,822,061,114	2,471,799,853	3,100,583,188	4,447,985,202
Railways operated.....miles..	.....	.....	23	2,818	9,021	30,626	52,922	93,267	166,703	194,262	*w*240,839
Passengers carried.....no..	.....	.....	.....	.....	.....	.....	.....	.....	520,439,082	584,695,935	*w*890,009,574
Freight carried 1 m.....tons..	.....	.....	.....	.....	.....	.....	.....	.....	79,192,985,125	141,162,109,413	*w*218,381,554,802
Rates, ton per mile.....ct..	.....	.....	.....	.....	.....	.....	.....	.....	0.93	0.75	75.4
Passenger cars.....no..	.....	.....	.....	.....	.....	.....	.....	12,788	21,664	26,786	*w*45,292
Freight cars.....no..	.....	.....	.....	.....	.....	.....	.....	544,185	1,069,205	1,358,467	*w*2,100,784
American vessels: Built...tons..	106,261	51,394	58,560	121,203	279,255	214,797	276,953	157,409	294,122	393,790	238,090
Trading domestic, etc..tons..	669,921	619,048	576,475	899,765	1,585,711	2,546,237	1,516,800	1,352,810	946,695	826,694	6,501,250
Trading foreign.....tons..	301,919	660,065	614,508	1,280,999	1,949,743	2,807,631	2,729,707	2,715,224	3,477,802	4,338,145	887,505
On Great Lakes.....tons..	.....	*u* 3,500	11,106	54,199	198,266	487,774	684,704	605,102	1,063,063	1,565,587	2,782,481
Vessels passing through Sault Ste. Marie Canal.....tons..	.....	.....	.....	.....	.....	403,657	690,826	1,734,890	8,454,435	22,315,834	46,751,717
Commercial failures.....no..	.....	.....	.....	.....	.....	3,676	3,546	4,735	10,907	10,774	12,924
Amount of liabilities.....$..	.....	.....	.....	.....	.....	79,807,000	88,242,000	65,752,000	189,856,964	138,495,673	154,603,465
Post offices.....no..	903	4,500	8,450	13,468	18,417	28,498	28,492	42,989	62,401	76,688	60,144
Receipts P. O. Dept.....$..	280,804	1,111,927	1,850,583	4,543,522	5,499,985	8,518,067	19,772,221	33,315,479	60,882,098	102,354,579	203,562,383
Telegrams sent *v*.....no..	.....	.....	.....	.....	.....	.....	9,157,646	29,215,509	63,258,762	79,696,227	*v*68,053,439
Newspapers, etc.*x*.....no..	.....	*y* 861	1,403	.....	2,526	4,051	5,871	9,723	16,948	20,806	22,603
Public Schools, salaries.....$..	.....	.....	.....	.....	.....	.....	37,832,566	55,942,972	91,836,484	137,687,746	*w*219,780,123
Patents issued.....no..	.....	.....	.....	473	993	4,778	13,333	13,947	26,292	26,499	37,420
Immigrants arrived *z*.....no..	.....	8,385	23,322	84,066	369,980	150,237	387,203	457,257	455,302	448,572	751,786

a Exclusive of Alaska and islands belonging to the United States.
b No official figures in other than census years.
c True valuation of real and personal property.
d Estimated.
e Total debt prior to 1860.
f Figures for the years 1800 to 1850 include the total public debt.
g Gold and silver cannot be stated separately prior to 1876. In 1870 gold and silver were not in circulation except on the Pacific coast, where it is estimated that the average specie circulation was about $25,000,000; in subsequent years shown gold was available for circulation.
h Total specie in circulation; gold and silver not separately stated prior to 1876.
i Includes notes of bank of United States, State-bank notes, demand notes of 1862 and 1863; fractional currency, 1870; Treasury notes of 1890-91 to date, and currency certificates, act of June 8, 1872, 1900.
j "Net ordinary receipts" include receipts from customs, internal revenue, direct tax, public lands, and "miscellaneous."
k "Net ordinary expenses" include expenditures for War, Navy, Indians, pensions, and "miscellaneous."
l Imports for consumption after 1860.
m Domestic exports only after 1860.
n Includes mules.
o Dr. Soetbeer's estimate averaged for the period.
p Pennsylvania anthracite shipments, 1820-60; entire coal product 1870 to date.
q 1904.
r Last six months of 1891.
s 1845.
t From Willett & Gray's "Sugar Statistical."
u Andrews Colonial and Lake Trade.
v Western Union to 1880; includes Postal Telegraph, 1890 and 1900; Western Union only in 1909.
w 1908.
x 1820 to 1860, inclusive, from census of 1880. 1870 to 1900 from Rowell's Newspaper Directory.
y 1828.
z 1820 to 1850, includes aliens not immigrants; 1820 and 1830, years ending Sept. 30; 1850, fifteen months ending Dec. 31; 1840 and 1860, calendar years; 1870 to date, fiscal years.

	Area. Square Miles.	Population.	Revenue.	Expenditure.	Debt.
United Kingdom	121,400	45,008,421	£151,578,295	£152,292,395	£754,121,309
India—British	1,097,821	231,855,533	73,349,100	73,349,100	266,358,411
Feudatory States	675,267	62,461,549	.....	.....	.....
Total India	1,773,088	294,317,082	73,349,100	73,349,100	266,358,411
Europe:					
Gibraltar	2	18,316	82,525	79,524	.....
Malta	117	212,888	457,520	445,014	79,115
Total Europe	119	231,204	540,045	524,538	79,115
Asia:					
Cyprus	3,584	258,997	303,477	244,061	292,537
Aden, Perim, Socotra	10,387	55,974	.....	.....	.....
Ceylon	25,332	4,038,456	2,371,523	2,335,470	4,773,809
Straits Settlements	1,600	628,016	1,046,385	1,147,723	5,000,000
Fed. Malay States	26,380	965,850	2,872,270	3,018,700	.....
Other Malay States[1]	12,500	615,000	.....	.....	.....
Labuan[2]	30	8,245	.....	.....	.....
Borneo and Sarawak	73,206	660,000	295,025	232,460	.....
Hongkong and Ter	390	421,499	527,760	685,569	1,485,733
Wei-hai-wei	285	130,792	9,716	19,686	.....
Total Asia	153,694	7,782,829	7,426,156	7,683,669	11,552,079
Australia and the Pacific:					
New South Wales	310,372	1,591,673	16,211,147	14,294,876	90,307,419[3]
Victoria	87,884	1,271,417	9,928,973	9,548,274	53,180,487
Queensland	670,500	552,345	5,452,489	5,302,447	41,764,467
South Australia and Northern Ter	903,690	407,179	4,285,155	4,012,301	30,452,933[3]
Western Australia	975,920	267,111	3,893,863	3,898,003	21,951,753[3]
Tasmania	26,215	185,824	1,255,457	1,194,268	10,056,713
Papua	90,540	350,000	26,019	48,525	.....
Total Australia	3,065,121	4,625,306	41,053,103	38,298,694	247,783,772[3]
New Zealand and Dependencies	104,751	1,029,417	9,109,341	8,889,365	70,938,534
Fiji	7,740	130,981	178,015	197,798	124,115
Tonga, Solomon and Gilbert Islands	12,556	211,417	51,842	60,734	.....
Total Australia and Pacific	3,190,168	5,997,121	50,392,301	47,446,591	318,846,421
Africa:					
Ascension	34	120	.....	.....	.....
St. Helena	47	3,558	7,432	8,104	.....
West Africa:					
North Nigeria	256,400	7,614,751	230,000	541,935	.....
South Nigeria and Protectorate	77,260	6,500,000	1,387,975	1,357,763	5,000,000
Gold Coast and Protectorate	119,260	1,697,000	752,142	667,292	2,207,164
Sierra Leone and Protectorate	30,000	1,252,000	321,600	341,871	1,276,447
Gambia and Protectorate	3,619	154,330	57,898	61,097	.....
Total West Africa	486,539	17,218,081	2,749,015	2,969,958	8,483,611
Mauritius and Dependencies	835	380,144	581,515	656,867	1,311,290
Seychelles	156	21,982	31,589	31,050	16,142
Somaliland	68,000	348,086	30,326	134,534	.....
East Africa Protectorate	175,518	4,000,000	485,668	703,103	.....
Uganda Protectorate	223,500	2,764,086	102,572	256,337	.....
Zanzibar	1,020	250,000	166,088	219,685	81,660
Nyasaland	43,608	997,217	80,533	103,032	.....
Union of South Africa:					
Cape of Good Hope	276,995	2,507,500	6,981,873	7,973,727	48,431,802
Natal	35,371	1,206,386	3,510,350	3,689,752	19,674,143
Transvaal	110,426	1,269,951	4,670,218	4,316,498	35,786,600
Orange Free State	50,392	466,380	740,452	727,626	373,720
Total Union	473,184	5,450,217	15,902,893	16,707,603	104,266,265
Rhodesia	439,575	1,604,875	616,332	671,661	.....
Swaziland	6,536	85,491	39,529	57,568	35,000
Basutoland	10,293	348,848	116,530	126,604	.....
Bechuanaland	275,000	134,100	42,050	75,801	.....
Total Africa	2,203,915	33,606,805	20,952,072	22,721,907	114,193,968
America:					
Canada	3,745,574	6,945,000	17,491,422	17,279,870	98,365,616
Newfoundland and Labrador	162,734	233,012	614,496	605,619	4,658,194
British Honduras	7,562	43,270	74,188	110,173	32,343
British Guiana	90,500	297,172	540,054	539,197	925,295
Bermuda	19	17,535	67,538	59,172	46,100
West Indies:					
Bahamas	4,404	60,309	81,861	99,655	63,124
Turks and Caicos Islands	169	5,322	7,404	11,430	.....
Jamaica	4,207	845,798	1,075,389	1,052,126	3,809,487
Windward Islands	672	375,152	358,991	362,607	688,350
Leeward Islands	701	172,110	155,528	148,073	258,426
Trinidad and Tobago	1,868	343,000	834,745	855,050	1,068,793
Total West Indies	12,021	1,801,691	2,513,918	2,528,941	5,888,180
Falkland Islands	6,500	3,610	17,775	20,369	2,500
Total America	4,024,910	9,341,290	21,319,391	21,142,341	109,918,226
SUMMARY.					
United Kingdom	121,400	45,008,421	151,578,295	152,292,395	754,121,309
India	1,773,088	294,317,082	73,349,100	73,349,100	266,358,411
Europe	119	231,204	540,045	524,538	79,115
Asia	153,694	7,782,829	7,426,156	7,683,669	11,552,079
Australia and Pacific Islands	3,190,168	5,997,121	50,392,301	47,446,591	318,846,421
Africa	2,203,915	33,606,805	20,952,072	22,721,907	114,193,968
America	4,024,910	9,341,290	21,319,391	21,142,341	109,918,226
Total	11,467,294	396,294,752	325,558,060	325,160,541	1,575,069,529

1 These States are Kelantan, Trengganu, and Keda. One of them in 1910 joined the Federated States.
2 Labuan statistics now included in those of the Straits Settlements.
3 The debts of N. S. Wales, S. Australia, and W. Australia are for 1909, the others for 1908.

Total Imports.[4]	Total Exports.[4]	Imports from United Kingdom.	Exports to United Kingdom.	Registered Tonnage.		Tonnage entered and cleared.	Railways Open. Miles.
				Sailing.	Steam.		
£691,247,235	£529,779,627	.....	.....	1,402,781	10,138,613	131,436,196	23,205
105,844,166	110,430,888	£66,656,807	£26,960,955	10,965	85,063	12,910,823	30,576
.....	.....	.....	.....	.....	.....	.....	....
105,844,166	110,430,888	66,656,807	26,960,955	10,965	85,063	12,910,823	30,576
.....	.....	.....	.....	1,385	1,632	9,157,001	....
.....	.....	.....	.....	3,292	485	8,063,752	8
.....	.....	.....	.....	4,677	2,117	17,220,753	8
618,781	653,591	158,325	154,861	.....	.....	955,859	61
3,151,163	2,808,241	312,541	174,047	.....	.....	6,541,070	....
8,686,127	8,678,027	2,283,937	4,259,155	9,280	1,282	18,877,141	567
36,912,860	31,945,448	4,385,785	7,584,897	53,717	28,264	19,644,712	21
5,990,086	7,749,231	603,577	104,029	.....	.....	2,627,256	469
.....	.....	.....	.....	.....	.....	.....	....
.....	.....	.....	.....	.....	.....	.....	....
842,657	1,202,219	.....	.....	.....	.....	392,727	130
.....	.....	.....	.....	14,213	31,308	20,104,875	....
.....	.....	.....	.....	.....	.....	.....	....
56,201,674	53,036,757	7,744,165	12,276,989	77,210	60,854	57,143,640	1,248
				53,315	78,093		3,553
				32,433	99,605		3,443
49,786,798	64,311,058	29,930,817	29,475,808	9,049	15,281	8,581,151	3,695
				19,012	42,730		2,083
				7,468	11,662		2,741
				8,494	8,889		619
94,061	30,616	.....	.....	.....	.....	183,772	....
49,880,859	64,311,058	29,930,817	29,475,808	129,771	256,260	8,764,923	16,134
17,471,284	16,317,494	10,441,837	13,143,780	44,304	107,505	2,692,352	2,703
690,724	880,249	.....	518	933	475	478,933	....
194,718	222,551	.....	.....	.....	.....	.....	....
68,237,585	81,731,352	40,372,654	42,620,106	175,008	364,140	11,936,208	18,837
.....	.....	.....	.....	.....	.....	.....	....
36,216	6,685	34,175	5,537	.....	.....	312,964	....
.....	.....	.....	.....	.....	.....	.....	25
4,284,830	3,409,288	3,285,508	1,778,159			1,480,042	247
2,029,447	2,525,171	1,476,131	1,052,395	1,877	220	2,215,735	168
813,700	736,755	570,908	177,216			2,046,052	255
390,740	374,138	133,825	51,197			418,441	....
7,519,000	7,045,000	5,466,000	3,959,000	1,877	220	6,160,270	695
2,039,157	2,253,855	443,304	243,593	3,522	1,503	769,049	130
76,716	110,478	25,972	15,334			273,835	....
293,565	227,783	8,125	.....	.....	.....	148,323	....
797,158	409,994	299,498	96,685	.....	.....	1,762,243	584
419,303	127,175	183,231	48,728	.....	.....	.....	....
969,841	977,628	184,175	89,891	.....	.....	890,700	7
155,098	142,819	113,399	101,446	.....	.....	.....	113
13,767,158	42,140,459	8,218,652	40,391,348	1,389	4,501	5,643,399	3,726
7,034,422	3,159,523	3,894,896	1,711,076	856	768	5,018,084	984
16,196,692	33,323,590	6,094,577	31,823,795	.....	.....	.....	2,417[5]
2,945,860	3,558,373	1,282,691	.....	.....	.....	.....	
39,944,132	82,181,945	19,490,816	74,027,219	2,245	5,269	10,661,483	7,127
1,938,401	2,854,011	954,338	2,584,708	.....	.....	.....	....
41,616	63,874	.....	.....	.....	.....	.....	2,143
240,130	208,522	.....	.....	.....	.....	.....	....
90,838	64,538	.....	.....	.....	.....	.....	....
54,561,171	96,674,307	27,203,033	81,172,141	7,644	6,992	21,978,867	10,799
63,672,192	53,755,277	14,503,329	27,492,364	407,745	295,645	19,765,876	23,958
2,367,201	2,428,797	548,587	248,605	131,968	15,218	1,935,083	656
550,215	452,592	141,927	98,285	4,462	3,136	507,443	....
1,778,295	2,043,525	977,384	906,598	1,795	1,433	961,384	95
420,596	140,598	121,831	1,831	6,207	251	829,376	....
369,490	183,239	93,538	30,558			1,334,314	....
24,426	24,798	4,913	391			412,485	....
2,420,335	2,268,253	1,003,239	489,307	52,381	6,792	3,000,494	185
1,928,460	1,486,851	769,356	433,408			5,166,584	28
567,593	536,312	225,773	159,161			2,507,357	....
2,682,702	2,500,195	944,048	444,224			1,987,252	81
7,995,006	6,999,648	3,040,867	1,557,049	52,381	6,792	14,408,486	294
73,062	263,034	65,744	203,511	220	35	305,643	....
76,854,567	66,083,471	19,399,669	30,508,243	604,778	322,510	38,713,291	25,003
691,247,235	529,779,627	.....	.....	1,402,781	10,138,613	131,436,196	23,205
105,844,166	110,430,888	66,656,807	26,960,955	10,965	85,063	12,910,823	30,576
.....	.....	.....	.....	4,677	2,117	17,220,753	8
56,201,674	53,036,757	7,744,165	12,276,989	77,210	60,854	57,143,640	1,248
68,237,585	81,731,352	40,372,654	42,620,106	175,008	364,140	11,936,208	18,837
54,561,171	96,674,307	27,203,033	81,172,141	7,644	6,992	21,978,867	10,799
76,854,567	66,083,471	19,399,669	30,508,243	604,778	322,510	38,713,291	25,003
1,052,946,398	937,736,402	161,376,328	193,538,434	2,283,063	10,980,289	291,339,778	109,676

4 The trade of the United Kingdom is that for 1909. The imports include bullion and specie; and the exports, bullion and specie and re-exports.

5 Orange Free State, Basutoland, and Transvaal railways.

MINERAL RESOURCES OF UNITED STATES AND CANADA.

ABRASIVES. *Grindstones* are largely produced from the Berea grit of Ohio and Michigan. *Whetstones* are chiefly produced by Arkansas, Indiana, Ohio, New York, Vermont, and New Hampshire. *Oilstones* are obtained from the Orange stone of Indiana and the Deerlick stone of Ohio. *Scythestones come from* Grafton County, New Hampshire, and Orleans County, Vermont. *Buhrstones* and *Millstones* occur in the Appalachians from New York to North Carolina, especially in the Shawangunk Mountains of New York and in Pennsylvania. *Pumice* is found in Nebraska and Utah, but cannot compete with that which comes from Lipari in Italy as ballast. *Corundum*, next to diamond the hardest natural abrasive, is found in the east from Massachusetts to Alabama, especially in North Carolina and Georgia. *Emery* is most abundant at Chester, Massachusetts; also found near Peekskill, New York. The production of abrasives in the United States during 1907 was:—

Grindstones	$896,022
Corundum and Emery	12,294
Crystalline Quartz	126,582
Oilstones, etc	264,188
Garnet, Abrasive	211,686

Carborundum is an artificial abrasive made by melting a mixture of silica, coke, and sawdust in electric furnaces.

ALUMINIUM. Aluminium never occurs free, but is very abundant and widely distributed. Commercial aluminium is obtained from the mineral, cryolite. Bauxite (a hydrated oxid of aluminium) occurs in Georgia, Alabama, and Arkansas. The yield in the United States of metallic aluminium in 1907 was 17,211,000 pounds, valued at Pittsburg at $4,926,948.

ANTIMONY. Stibnite, a sulphid of antimony, is the chief ore. It is found in California, Idaho, and South Dakota. The yield in 1907 was 2,022 short tons, valued in San Francisco at $622,046.

ASBESTOS. Obtained in Georgia, Arizona, and California. The yield in 1907 was 653 short tons, valued at $11,899. In Quebec, the yield was valued at $2,547,507.

ASPHALT. A product closely allied to petroleum, and obtained from bituminous sandstone and limestone. Large deposits occur in California, Indian Territory, Kentucky, Arkansas, Texas and Utah. In 1907 the production was 223,861 short tons, valued at $2,826,489.

BARYTES is found in Connecticut, North Carolina, Tennessee, Virginia, and Missouri. The value quarried in 1907 is given at $291,777 for 89,621 short tons. *Uses.* In the manufacture of paper, rubber, paints, coating canvas ham sacks, glazes on pottery, manufacture of barium hydroxid, and as an adulterant of white lead.

BUILDING STONES. *Granite.* These vary in color; the most common are gray, mottled gray, red, pink, white, or green. Their average weight is 166.5 pounds per cubic foot. The supply in the United States is practically inexhaustible. Nearly 70 per cent. of the quarried granite comes from the Atlantic states. There are three great areas which produce the finest granite, viz.: (1) the Eastern Crystalline Belt, running from Maine to eastern Alabama; (2) Central States, including the Minnesota-Wisconsin area, the Missouri area, eastern central Arkansas, and Llano County in Texas; and (3) the Western States, in which the leading quarries are those of California, Colorado, Montana, Washington, and Oregon. One monolith was taken from Stony Creek, Connecticut, measuring 41 ft. by 6 ft. by 6 ft.; one from Vinal, Maine, 60 ft. by 5½ ft.; and one from Barre, Vermont, 60 ft. by 7 ft. by 6 ft. *Limestones and Marbles.* The Bedford quarries in Indiana contain beds of limestone from 20 to 70 feet thick. Kansas, Nebraska, and Iowa also produce a limestone used for building. Most of the marble quarried in the United States is white. Vermont leads all other states in marble production, yielding 80 per cent of that used for ornamental purposes. Massachusetts, New York, Maryland, and Georgia produce similar marbles. Swanton, Vt., yields a variegated red and white marble. Eastern Tennessee produces a pinkish chocolate variety with white variegation. *Sandstone* is widespread and is largely quarried in Ohio and the Middle Atlantic States. *Bluestone* is produced in New York, Pennsylvania, and New Jersey. *Slate* is most largely quarried in Vermont, Pennsylvania, and other eastern states. In 1907 the geological report gave the yield of stone in the United States as $71,105,805; slate was given as $6,019,220.

CLAYS. These are more widely distributed than most other rocks and minerals. *Kaolins* are produced in North Carolina and Pennsylvania in large quantities; and in a lesser degree in Connecticut, Maryland, Virginia, and Alabama. The best grades are worth from $10 to $12 a ton. *Fire Clays* are most abundant in Pennsylvania, Ohio, Kentucky, Indiana, and Illinois. *Pottery Clays*, other than kaolin, occur as ball clay in New Jersey, Kentucky, Tennessee, Missouri, and Florida; as stoneware clays in New Jersey, western Pennsylvania, and eastern Ohio. *Brick and Tile Clays* are found abundantly in all states. *Paper Clays* are best in the Potomac formation in North Carolina. The clay products of the United States in 1907 reached a value of $158,942,369.

COAL. The production of coal in the United States occurs: (1) in the Appalachian Mountains from Pennsylvania to Alabama (71,291 square miles); (2) about 11,300 square miles in Michigan; (3) about 58,000 square miles, covering Indiana, Illinois, and western Kentucky; (4) about 98,000 square miles from Iowa to Mexico; (5) a Rocky Mountain region of several isolated areas; and (6) the coal fields of California, Oregon, and Washington. Pennsylvania is the largest producer. Bituminous coal comes from Illinois, West Virginia, and Ohio. The total yield in 1907 was 394,759,112 short tons of bituminous coal, valued at the mines at $451,214,842, and 76,432,421 long tons of Pennsylvania anthracite, valued at the mines at $163,584,056. The area of coal fields in the United States is about 194,000 square miles, 41 per cent. of the coal area of the world; the yield is about one third of the world's output, a little more than that of Great Britain. Coal is found in Nova Scotia, Saskatchewan, Alberta, British Columbia, New Brunswick, and Yukon. In 1908 value was $25,567,235.

COPPER. Copper occurs as the sulphid ores and the native metal. Gold, silver, zinc, and lead are often mechanically mixed with the copper ore. The United States is the copper-producing country of the world. Montana, Michigan, and Arizona produce copper on a large scale. In 1907 the yield from the entire United States was 868,996,491 pounds which, at New York City prices, was worth $173,799,300. British Columbia produced $8,500,885 of copper in 1908.

FELDSPAR. Varieties of feldspar are found in Maine, Massachusetts, New York, Connecticut, Pennsylvania, Maryland, Wisconsin, Virginia, Texas, and Minnesota. Commercial feldspar occurs principally as a constituent of pegmatites. The production in 1907 amounted to 84,549 short tons, valued at $499,069.

FIBROUS TALC. The production of fibrous talc, or soapstone, is confined to Gouverneur, St. Lawrence Co., N. Y., and N. Carolina. It is employed chiefly as makeweight in the manufacture of paper. The output in 1907 was 67,800 short tons, valued at $626,000.

FLUORSPAR or **FLUORITE.** Widely distributed from Maine to Virginia and in Hardin and Pope counties in Illinois, where the greatest supply comes from. The yield in 1907 was 49,486 short tons, valued at $287,282. *Uses.* For making hydrofluoric acid, opalescent glass, a flux in iron making, spiegeleisen manufacture, foundry work, and in cupola furnaces.

FULLER'S EARTH. Deposits of fuller's earth have been discovered in Florida, South Dakota, and in other localities in the United States. The reported production for 1907 was 32,851 short tons, valued at $291,773.

GLASS SAND. Sand for the manufacture of glass is quarried in many localities in the United States. The chief deposits are in Massachusetts, Pennsylvania, West Virginia, Illinois, Missouri, Ohio, Indiana, New Jersey, New York, and Maryland. The yield of glass sand in 1907 amounted to 1,187,296 short tons, valued at $1,250,067.

GOLD. Gold is found in its native state (not combined with other elements) either in veins of quartz or as placer gold in the sands and gravel of streams. Some gold is produced as a by-product of the mining of silver and copper. Before the discovery of gold in California in 1848, all of the gold of the United States came from North Carolina, Georgia, and South Carolina. The list of gold-producing states in their order is: Colorado, California, Alaska, Montana, South Dakota (the Black Hills), and Utah. Placer deposits are largest in California. In 1907 the quantity of gold produced in the United States was 4,374,827 troy ounces,

having a coinage value of $90,435,700—the coining value of a troy ounce of gold being $20.671834. In Canada, 1908, the value was $9,559,274, found mostly in British Columbia, Yukon, and Nova Scotia.

GRAPHITE. Graphite usually occurs with other minerals, and is sometimes found in meteorites. Crystalline graphite is mined in New York, Pennsylvania, Alabama, Georgia, North Carolina, and Montana; and amorphous graphite in Michigan and Rhode Island. In 1907 there were produced 4,947,840 pounds of crystalline graphite, valued at $171,149; and 26,803 short tons of amorphous graphite, valued at $125,821.

GYPSUM. Rock gypsum is produced in 16 of the states and one territory, besides Alaska. In 1907, New York and Michigan produced the greatest quantity; total output that year was 1,751,748 short tons, valued at $4,942,264. Gypsum is used in making the various plasters, cement, paints, and alabaster, also in dentistry.

IRON. Iron is so abundant in the United States that only the most easily accessible, economically worked, and readily transported deposits are now mined. For ease of working, the proximity to deposits of good coking coal and of limestone is desirable. This is especially the case of the mines near Birmingham, Alabama. Minnesota, Michigan, Alabama, and Pennsylvania produce most. Minnesota and Michigan are in the Lake Superior region, where vast deposits of red hematite are laid bare by the weathering process of an ancient mountain area. The larger part of the ore from this region is smelted in Pittsburg and at South Chicago. The Alabama region also yields red hematite and is supplied with cokable coal and limestone, so that the ore is very profitably worked there. Ohio is the only state that produces the carbonate of iron (siderate) to any great extent; New York and Pennsylvania produce limonite or brown hematite, red hematite, magnetite, and siderite or spathic iron. The total iron ore produced in the United States in 1907 was 51,720,619 long tons, worth at the mines $131,996,147. Ontario produces most of the ore in Canada; value in 1908, $486,857; value of pig iron, $1,664,302.

LEAD and **ZINC.** These metals nearly always occur together. Galena is the lead sulphid and the principal ore of lead. When silver occurs with it, the ore is called argentiferous or silver-bearing, occurring largely in the Rocky Mountains; this silver occurrence with the lead makes the mining there most profitable. The lead is a by-product of the silver mining. Leadville, Colorado, is the silver and lead bearing lode of the Rocky Mountain district. Zinc is found combined with lead in limestone in the Missouri district; and the yield is so abundant and the ore so easily mined that while the ore is not argentiferous the mining is very profitable. The zinc ore is known as "blende," chiefly obtained from the Mississippi Valley district. It also occurs in New Jersey and Pennsylvania. "Spelter" is commercial zinc. The yield of lead in 1907 was 365,166 short tons, valued in New York City at $39,917,442. The yield of zinc for 1907 was 223,745 short tons, valued in New York City at $26,401,910. British Columbia, in Canada, produced in 1908, lead to the value of $1,920,487.

LIME and **CEMENT.** Limestone suitable for burning for lime is abundant throughout the country. *Portland Cement* is largely produced in Pennsylvania, which gives about 70 per cent. of the total yield. Ohio, Indiana, Michigan, Texas, Arkansas, Alabama, North Dakota, South Dakota, Utah, Colorado, and California are prominent. In 1907 there were 3,084,799 short tons of lime produced, with a value of $12,640,512; and 52,230,342 barrels, of 380 pounds net, of cement, valued at $55,903,851. In Canada, 3,495,961 barrels were produced, in 1908, from 23 operating plants, 15 of which are in Ontario.

MANGANESE. Occurs in many minerals and ores, but those of commercial value are the oxids. Pyrolusite is the black oxid. Georgia and Virginia produce most. It is a by-product of the silver mines at Leadville, Colorado, and of the zinc furnaces of Franklin Furnace, New Jersey. The yield in 1907 was 5,604 long tons of ore, worth at the mines $63,369.

MERCURY or **QUICKSILVER.** Obtained from the ore known as cinnabar or the red oxid of mercury. It is found in paying quantities in California only. The yield in 1907 was 21,567 flasks of 76½ avoirdupois pounds net, valued in San Francisco at $828,931.

MICA. Produced in North Carolina, New Hampshire, South Dakota, and New Mexico. Its value in 1907 was $349,311 for 1,060,182 pounds. *Uses.* Stove doors and chimneys, ground and used as frosting on wall papers, as lubricants, boiler coverings, and for electrical purposes.

MINERAL PAINTS. These include ocher, umber, mortar colors, sienna, ground slate, and mineral black. The amount yielded in 1907 was 71,976 pounds, valued at $2,979,158. The ochers occur from Vermont to Alabama, the largest yield coming from Pennsylvania and Georgia.

MONAZITE. The production of monazite for commercial purposes has come entirely from North Carolina and South Carolina, although deposits have been found in other states. It is used principally in pharmacy, and in the manufacture of gas mantles. The production of 1907 amounted to 547,948 pounds, valued at $65,754.

NATURAL GAS. Pennsylvania, Kansas, West Virginia, northwestern Ohio, and eastern Indiana are the chief centers. The value yielded in 1907 was $52,866,835. Ontario produces 95 per cent. of the natural gas yielded in Canada; in 1908, value, $1,012,060.

NICKEL and **COBALT.** Usually found in the same ore, and cobalt is usually a by-product of nickel smelting. The chief point of production is Mine la Motte in Missouri as by-products in lead smelting. For many years nickel mines were productive near Lancaster, Pennsylvania, but these are now closed. About 24,000 pounds were reported in 1904, valued in Philadelphia at $11,400, 114,200 pounds produced in 1903. Canada has largest nickel mines in the world, at Cobalt, Ont.; the yield in 1908 valued at $8,343,791.

PETROLEUM. The chief fields are in west Pennsylvania, New York, Ohio, West Virginia, Texas, Colorado, and California. The yield in 1907 was 166,095,335 barrels of 42 gallons, valued at the wells at $120,106,749, nearly one half the world's output. Canada's yield comes from Ontario; its value, $747,102 in 1908.

PLATINUM. Occasionally found in the gold-bearing gravels. The commercial importance of the production in the United States is very slight. In 1907 there were produced in the United States 357 troy ounces of crude platinum, having a value at San Francisco of $10,589.

PRECIOUS STONES. Most of the valuable stones and gems produced in the United States are found in the southern and western states. The production in 1907 was valued at $471,300.

QUARTZ. Occurs in many forms, and is used in building, glass, pottery, paints, soaps, as an abrasive, and in many other ways. It is quarried in Connecticut, New York, Pennsylvania, Maryland, and in smaller quantities in other states. The production in 1907 was 22,977 short tons, valued at $157,094.

SALT. New York and Michigan lead in the production of salt; Kansas, Ohio, California, Texas, West Virginia, Utah, and Louisiana are also prominent. In 1907 the yield consisted of 29,704,128 barrels of 280 pounds net, valued at $7,439,551.

SAND and **GRAVEL.** Much of the sand and gravel produced in the United States is dredged from the large rivers and along the shores of the Great Lakes and Long Island. The state of Pennsylvania leads in the value of its output, followed by New York, Ohio, Illinois, and New Jersey, in the order named. The yield of sand for building, engine, furnace, molding, etc., and of gravel, in 1907 amounted to 41,851,918 short tons, valued at $14,492,069.

SILVER. Silver occurs as sulphids and in admixture with ores of lead and copper. Nearly all of the silver produced in the United States comes from Colorado, Montana, Utah, Idaho, and Arizona. Nevada was formerly the foremost producer of silver, but operations were abandoned and the state sank to the sixth place in silver production. The yield in 1907 was 56,514,700 troy ounces, valued at $37,299,700. The average price per troy ounce in 1907 was 65 cents. The richest silver deposits in the world are at Cobalt, Ontario. Its yield in 1908 valued at $11,667,197.

TALC and **SOAPSTONE.** Valuable deposits of talc and soapstone are found in nearly all the Atlantic slope states, and small quantities have also been quarried in California and Washington. In addition to the yield of fibrous talc from Gouverneur, N. Y., the production of talc and soapstone in 1907 was 72,010 short tons, valued at $905,047.

TIN. The United States produces only a small proportion of the tin used. The principal sources are Alaska, Washington, South Dakota, Texas, and the Carolinas. The production of 1907 amounted to 89 tons of concentrates, valued at $33,285 and containing about 62 tons of metallic tin—about one twentieth of one per cent. of the world's total output for the year.

CAPTAINS OF INDUSTRY.

ARBUCKLE, JOHN. Business man; educated in Allegheny, Pa. In 1871, with his brother, he established the New York coffee firm of Arbuckle Bros., which has become one of the largest in the country; now head of the firm. Director in Importers and Traders' Bank, Lawyers' Title Insurance and Trust Company, etc.; trustee Kings County Trust Company; president Royal Horse Association.

ARCHBOLD, JOHN DUSTIN (1848-). Oil merchant and capitalist. Born at Leesburg, O.; went to Pennsylvania in 1864, where he became interested in the oil industry. President Acme Oil Company; officer or director in several enterprises; vice-president Standard Oil Company. He also acts as president and director in two educational and charitable organizations.

ARMOUR, JONATHAN OGDEN (1863-). Capitalist, packer; born at Milwaukee, Wis. Before completing the course at Yale he was called to Chicago to assist his father; president of Armour & Company, packers, and Fort Worth Stock Yards Company; director several packing houses, banks, insurance companies, and car lines; American trustee of Insurance Company of Stettin.

ARMOUR, PHILIP DANFORTH (1832-1901). Merchant and philanthropist; born in Stockbridge, N. Y.; began a grain and warehouse business in Milwaukee in 1856. Seven years later he became head of Armour, Plankinton & Company, pork packers. In 1870 the main office was transferred to Chicago, and the firm name became Armour & Company. The business increased rapidly and at the time of Armour's death the company owned more grain elevators than any other firm in the world, employed 50,000 men, and sent goods to every civilized country.

BLISS, CORNELIUS NEWTON (1833-). Merchant; born at Fall River, Mass.; after completing his education entered his stepfather's countingroom in New Orleans; member J. S. & E. Wright & Company, Boston (1866); established in 1881 the firm of Bliss, Fabyan & Company, dry goods commission merchants, New York; trustee and director of other financial enterprises; secretary of interior (1897-1899); vice-president chamber of commerce; member executive committee National Civic Federation.

CARNEGIE, ANDREW (1837-). Capitalist, manufacturer, philanthropist; born at Dunfermline, Scotland. He came to Pittsburg in 1848, and began his remarkable career as a weaver's assistant in a factory. He studied telegraphy, and secured a position in an office of the Pennsylvania Railroad, advancing step by step until he became superintendent of the Pittsburg division. The beginning of his fortune was made as partner in the Woodruff Sleeping Car Company, and careful investments in oil lands increased his wealth. After the Civil War he turned his attention to the iron industry; introduced Bessemer process in 1868; and in a few years was chief owner of Homestead and Edgar Thomson Steel Works, and of other large plants. In 1899 all these were merged into the Carnegie Steel Company, and two years later consolidated in the United States Steel Corporation. In 1901 he retired from business. His donations have exceeded those of any other American philanthropist.

CHALMERS, WILLIAM JAMES (1852-). Manufacturer; born in Chicago; was vice-president and treasurer of Fraser & Chalmers (1889-1891), president (1891); vice-president of Allis-Chalmers Company since 1900; bank and trust company director; director Fraser & Chalmers, Ltd., London; has been member Chicago board of education; director World's Columbian Exposition, Chicago Athenaeum, and Commercial National Bank.

CLARK, WILLIAM ANDREWS (1839-1906). United States senator; born near Connellsville, Pa.; studied law, but never practised; taught school in Missouri, and in 1863 went to Montana, where he became successively merchant, banker, mine owner, and manufacturer; president United Verde Copper Company of Arizona; elected senator (1901-1907).

COREY, WILLIAM ELLIS (1866-). Capitalist; born in Pennsylvania; entered chemical laboratory of Edgar Thomson Steel Works at 16; became superintendent of a plate mill at 21; invented Carnegie reforged armor; succeeded Charles M. Schwab, and has been president of the Carnegie Steel Company, and others; president of the United States Steel Corporation; director of many other corporations.

CRAMP, CHARLES HENRY (1828-). American shipbuilder; president of the famous Cramp Shipbuilding Company; assisted in reconstructing the United States navy, and in the reëstablishment of the United States merchant marine; built the ill-fated battle ship Maine; the ship yards include 31 acres of land employing 6,000 operatives.

CRANE, RICHARD T. (1832-). Manufacturer; born in New Jersey. He worked as a machinist in Paterson, Brooklyn, and New York, but in 1855 went to Chicago. His uncle, Martin Ryerson, gave him a piece of land on which he built a brass foundry. Later he and his brother, Charles S., joined forces as R. T. Crane & Brother, and in 1858 began making steam heaters. Reorganized as Crane Company they manufactured pipes and fittings, and later, as the Crane Elevator Company, passenger and freight elevators. The latter especially grew into a big business. Mr. Crane is now practically retired from active work.

CRANE, WINTHROP MURRAY (1853-). Paper manufacturer and statesman. Born at Dalton, Mass.; received degree of A. M. from Williams (1897). Entering political life, he became lieutenant governor of Massachusetts (1897-1899); governor (1900-1902); United States senator to fill the unexpired term of Senator Hoar (1904-1907), re-elected (1907).

CUDAHY, JOHN (1843-). Packer; born in Callan, Ireland; came to the United States (1849); learning the packing business with Edward Roddis, John Plankinton, and Plankinton, Armour & Co. Entered firm of Chapin & Co., Chicago (1875); Chapin & Cudahy (1877); later Cudahy Packing Co.; partner in Cudahy Bros. Packing Co of Milwaukee.

CUDAHY, MICHAEL (1841-). Born in Callan, Ireland; came to the United States (1849); partner in Armour & Co. (1873-1890); head of Cudahy Packing Company of Omaha, Sioux City, and Los Angeles.

CUDAHY, PATRICK (1849-). Packer; born in Callan, Ireland; came to the United States (1849); at 12 became a delivery boy for a Milwaukee grocer; at 14 employed by Roddis Packing Company; became a partner with Plankinton & Armour (1876); with brother, John, bought Mr. Plankinton's interest (1888), firm becoming Cudahy Brothers; moved plant to Cudahy (1893), organizing Cudahy Brothers Company, now one of the largest packing houses in the United States, of which he acts as president and general manager; director Wisconsin National Bank.

DAVIS, HENRY GASSAWAY (1823-). Capitalist; born in Baltimore; was successively brakeman, conductor, and agent of the B. & O. Railroad at Piedmont, W. Va.; assisted in establishing the West Virginia Central & Pittsburg Railway; built the Coal and Coke Railway of West Virginia, of 200 miles, of which he became president; is president of Davis National Bank of Piedmont, Davis Trust Company of Elkins, and other corporations. Member House of Delegates, W. Va. (1865); state senator (1868-1871); United States senator (1871-1883); has been delegate to several conventions; member United States Intercontinental Railway Commission; was Democratic candidate for vice-president (1904).

DEERE, CHARLES HENRY (1837-1907). The name of Deere is almost identified with the development of Moline, Ill., where John Deere established his famous plow works. The son, Charles Henry, went to Moline in 1847 to succeed his father at the head of Deere & Mansur Company, makers of cotton and corn planters, and of John Deere & Company, St. Louis, Dallas, New Orleans, Denver, Omaha, and many other cities.

DOUGLAS, WILLIAM LEWIS (1845-). Manufacturer and statesman; born at Plymouth, Mass. Owing to the death of his father in 1850, William was obliged to find employment, and for eight years worked for his uncle, pegging shoes. Learned boot making, and after spending a few years in Colorado, he returned to Massachusetts. In 1876 he was able to establish a small shop, from which his business has grown until to-day he controls two factories with an output of 15,000 pairs daily; and the well-known Douglas shoe is sold in 75 of his own stores. Member Massachusetts House of Representatives (1883-1884); State Senate (1886-1887); mayor of Brockton (1891); governor (1904).

FIELD, CYRUS WEST (1819-1892). American financier; born at Stockbridge, Mass. At 15 he went

to New York and worked for A. T. Stewart & Company, but before he was of age he was in business for himself, manufacturing paper; and at the end of a dozen years he was at the head of a prosperous business. In 1854 he became interested in a scheme to lay a transatlantic cable and formed a company of five men, with Peter Cooper as president. Three fourths of the necessary capital was raised in England, there the cable was made, and the first great attempt came in 1857. It was a failure; and the next, in 1858, was successful for a short time only. The third attempt was made in 1865, with the help of the biggest ship then afloat, but it was a failure. The next year saw him afloat with yet another cable, and this time it was a success. During the succeeding years he did much toward promoting railroad development, until his resignation as president of two roads in 1880.

FIELD, MARSHALL (1835-1906). Merchant; born in Conway, Mass. He began by clerking in Pittsfield, Mass., and in Chicago from 1856 to 1860. In the latter year he was made junior partner, and in 1865 became one of the firm of Field, Palmer & Leiter, which was changed to Marshall Field & Company in 1881. Under his management the firm conducted the largest retail and wholesale dry goods business in the world, with immense headquarters in Chicago, and branches in France, Germany, and England. He founded the Field Columbian Museum with $1,000,000, as a permanent repository for valuable exhibits, especially from the Columbian Exposition of 1893.

FISH, STUYVESANT (1851-). Banker, railway official; born in New York; after leaving Columbia University he entered the office of the Illinois Central Railway as clerk (1871), secretary to president (1872); clerk Morton, Bliss & Company, New York, and Morton, Rose & Company, London, (1872-1877); has acted as director and officer of many railroads; president Illinois Central Railroad (1887-1906); has been director and trustee in various insurance and trust companies; was president of American Railway Association for 1904-1906, and chairman of the seventh International Railway Congress, Washington, 1905.

FLAGLER, HENRY M. (1830-). Capitalist; born at Canandaigua, N. Y.; began as clerk in a country store. After manufacturing salt at Saginaw, Mich., he went to Cleveland and became partner in Rockefeller, Andrews & Flagler, oil refiners. When the firm was succeeded by the Standard Oil Company, he was prominent in the management of the concern, and is at the present day vice-president and director. He owns the hotels Ponce de Leon and Alcazar in Florida, costing $3,000,000; also 600 miles of railroad, and is president of the Florida East Coast Railroad, and the Jacksonville Terminal Company; director in Western Union Telegraph Company, Morton Trust Company, etc.

FLEMING, SIR SANFORD (1827-). Born in Scotland; did important Canadian engineering work on Northern Railway, Intercolonial, Pacific Railway, etc. (1845-1871); surveyed road for St. John's to St. George's Bay Railway in Newfoundland. Retired to devote himself to politics, and special branches of science and literature (1880); did great work on "cosmic or universal time," making Greenwich the standard of the world; advocated Pacific Ocean cable, giving plans forming a Pan-Britannic service encircling the world (1879).

FLINT, CHARLES RANLETT (1850-). Merchant. Born at Thomaston, Me. Partner in important exporting firms; Chilean consul, New York (1877); consul general Nicaragua and Costa Rica to United States; established Flint & Company, shipowners (1885); formulated important reforms in customs, etc.; fitted out war fleet for Brazil (1895); bought cruiser for Japan (1894); sold submarine and torpedo boats to Russia during war with Japan, visiting Turkey and other countries in its interest.

FRICK, HENRY CLAY (1849-). Manufacturer; born at West Overton, Pa. He began as a clerk, then became a small dealer in coke, and later president of the H. C. Frick Coke Company, now largest in the world, producing 25,000 tons daily. Was shot and stabbed in famous Homestead strike (1892). Chairman board of managers of Carnegie Steel Company since 1892; and official in many large concerns.

GARY, ELBERT HENRY (1846-). Financier; born at Wheaton, Ill. Graduate of University of Chicago; admitted to the bar in 1867. Was for five terms mayor of the village and (afterward) city of Wheaton; county judge, two terms; practised law for 25 years in Chicago; general counsel for important corporations connected with the Federal Steel Company, of which he has been president since 1898. Was prominent in organizing the United States Steel Corporation and is chairman of its board of directors; director in several banks and corporations in Chicago and New York; president Gary-Wheaton Bank; trustee of Northwestern University.

GATES, JOHN WARNE (1855-). Capitalist; born on farm near Turner Junction (now West Chicago), Illinois; began business life by conducting a small hardware store at his birthplace; built up a large business in barbed wire while acting as salesman for I. L. Ellwood in Texas, and later established for himself in St. Louis; organized Southern Wire Company (1880), which became the Braddock Wire Company; absorbed other companies in Consolidated Steel and Wire Company, which was sold to Federal Steel Company in 1898; organized American Steel and Wire Company (now part of the United States Steel Corporation) (1897); director of numerous financial enterprises.

GLOVER, CHARLES CARROLL (1846-). Financier, banker; born on farm in Macon County, North Carolina; entered Riggs & Company, bankers, as clerk; became partner in firm (1873); president of the Riggs National Bank since its organization (1896); instrumental in procuring for District of Columbia site for Fort Reno reservoir; aided in securing the establishment of Rock Creek and Potomac parks; director, trustee, and officer of various organizations; ex-president Washington Stock Exchange; member Washington National Monument Society; vice-president and treasurer Corcoran Gallery of Art.

GOULD, FRANK JAY (1878-). Capitalist; born in New York; entered the railroad service (1897); has been first vice-president of several railroads; president of Big Creek Lumber Company, Pacific Railway in Nebraska, Richmond & Chesapeake Bay Railway Company, and Old Dominion Iron & Nail Works Company; director in numerous companies.

GOULD, GEORGE JAY (1864-). Capitalist; born in New York; president and director of Missouri Pacific Railway; St. Louis, Iron Mountain & Southern Railway Company, Texas & Pacific Railway Company, International and Great Northern Railway Company since 1893; is also president of many other railroads, and director of railroads and corporations throughout the country.

HAMMOND, JOHN HAYS (1855-). Mining engineer; born at San Francisco; graduated from Yale (1876); took mining course at Freiburg, Saxony. He has examined mining properties in all parts of the world; consulting engineer for Barnato Brothers, 1893, and later for Cecil Rhodes; for the Consolidated Gold Fields of South Africa; for the British South Africa Company; and for the Randfontein Estates Gold Mining Company. After Jameson's raid he was arrested and given death sentence, later commuted to prison for 15 years, finally released on payment of $125,000. Went to London; returned to United States; traveled extensively as a mine specialist for Venture Corporation of London and Guggenheim Exploration Company of New York. He has lectured at Columbia, Yale, Harvard, and Johns Hopkins; contributed largely to scientific magazines, and received many honorary titles; president American Institute Mining Engineers (1907-1908).

HARAHAN, JAMES THEODORE (1843-). Railway president; born at Lowell, Mass. Employed by Orange & Alexandria Railroad, Alexandria, Va. (1864-1865); held several responsible positions with other railroads; general manager Louisville & Nashville Railroad (1885-1888), Chesapeake & Ohio Railway, Louisville, New Orleans & Texas Railway; second vice-president Illinois Central Railroad (1890-1906); president same road since 1906.

HAVEMEYER, JOHN CRAIG (1833-). Merchant and sugar refiner; born in New York. Began by clerking in 1851-1852. After traveling in Europe, Syria, and Egypt, he clerked in a sugar refinery (1854-1856) in Brooklyn; partner in Havemeyer Brothers & Company (1871-1880). He is director in several railroads and corporations. Writer and speaker on political, moral, and religious subjects.

HERRESHOFF, NATHANIEL GREENE (1848-). Superintendent Herreshoff Manufacturing Company; born in Bristol, R. I.; educated at Massachusetts Institute of Technology (1866-1869),

and holds the Sc.M. of Brown University. Designer of yachts and torpedo boats. Member of the Institute of Naval Architects and Marine Engineers, New York; and of Institute of Naval Architects, England.

HILL, JAMES J. (1838-). Railway official; born near Guelph, Ont. Worked in a steamboat office in St. Paul (1856-1865); agent of the Northwestern Packet Company (1865); and later engaged in fuel and transportation on his own account. In 1869-1875 he was at the head of Hill, Griggs & Company; established Red River Transportation Company (1870); organized Northwestern Fuel Company (1875), but later sold his interest to organize a syndicate to secure control of the St. Paul & Pacific Railroad. This was the nucleus of the Great Northern system which he projected from Lake Superior to Puget Sound, with northern and southern feeders, and direct steamship connection with China and Japan (1883-1893); president Great Northern system (1893). In 1907 he retired, retaining chairmanship board of directors. Now president Northern Securities Company, and director in Manhattan Trust Company, Chase National Bank, First National Bank of New York, First National Bank of Chicago, and many other corporations.

HOYT, COLGATE (1849-). Banker, railway official; born at Cleveland, Ohio; became a banker; government director (1882-1884), company director (1884) of the Union Pacific Railroad; vice-president Oregon & Transcontinental and Oregon Railroad & Navigation Company (1889); vice-president North American Company until 1889; now first vice-president Missouri, Kansas & Texas Railway of Texas.

HUGHITT, MARVIN (1837-). Railway official; born in Genoa Township, N. Y. He has been a resident of Chicago since 1854, and closely identified with Chicago railroads, especially the Northwestern system. He began as telegrapher for the Chicago & Alton; then went to the Illinois Central as trainmaster and became superintendent; assistant manager of the Milwaukee & St. Paul (1870-1871); connected with the Pullman Palace Car Company (1871-1876); vice-president and general manager Chicago & Northwestern Railway (1880-1887); president since 1887.

HUNTINGTON, COLLIS POTTER (1821-1900). Railway official. At 16 he secured $3,000 worth of clocks on credit in New York, and sold them in the South and West; started his fortune in the hardware business in California (1849); with Leland Stanford, Charles Crocker, and Mark Hopkins he organized the Central Pacific (1860-1869). At his death he was president of the managing board of the Southern Pacific system, comprising 26 corporations, besides owning 9,000 miles of steamship lines. He gave liberally to worthy objects.

INSULL, SAMUEL (1859-). Corporation official; born in London; came to the United States in 1881, and was private secretary of Thomas A. Edison, having full charge of his business affairs for many years. He represented him in the organization and management of Electric Tube Company, Edison Machine Works, and Edison Lamp Company. In 1889 the different Edison concerns were consolidated into the Edison General Electric Company, with Mr. Insull as second vice-president. In 1892 there was further consolidation with the Thomson-Houston Company, into the General Electric Company, of which he became second vice-president. Since 1907 he has been president of the Commonwealth Edison Company, controlling all electric lighting in Chicago. He is president also of numerous other corporations—electric, gas, heat, power, and traction.

LEITER, LEVI ZEIGLER (1834-1904). Capitalist; clerk in a country store until his twentieth year; secured a position with Cooley, Wadsworth & Company, Chicago, and later became partner. In 1865 he and Marshall Field bought controlling interest in Potter Palmer's dry goods business; the title being Field, Palmer & Leiter, later Field, Leiter & Company. In 1881 he sold his interest and gave his attention to investments.

LOEB, JAMES (1867-). Banker (retired); born at New York; graduated from Harvard (1888); in banking business (1888-1901); member English Society for Promotion of Hellenic Studies

McCLURE, SAMUEL SIDNEY (1857-). Editor; born County Antrim, Ireland; came to Indiana at the age of nine; was graduated at Knox College in 1882. In 1884 he started the first newspaper syndicate in the United States and made it a success; and in 1893 he united with others to publish *McClure's Magazine*, which he also made a success. Founded McClure, Phillips & Company, publishing house (1899); trustee Knox College since 1894; president S. S. McClure Company.

McCURDY, RICHARD ALDRICH (1835-1907). Capitalist; born in New York; practised law with Lucius Robinson, who became governor of New York; was attorney (1860), vice-president (1865), and president (1885-1906), of Mutual Life Insurance Company; resigned; president International Bell Telephone Company, Ltd.; director in several corporations.

MacKAY, CLARENCE HUNGERFORD (1874-). Capitalist; president Commercial Cable Company, Postal Telegraph-Cable Company, Pacific Postal Telegraph-Cable Company, Commercial Pacific Cable Company, Commercial Cable Building Company, etc.; trustee New York Life Insurance Company; director Canadian Pacific Railway Company, American Exchange National Bank, United States Mortgage and Trust Company, Federal Sugar Refining Company, etc.

MacVEAGH, FRANKLIN ( ). Merchant; born on farm, Chester County, Pa. A graduate of Yale (1862), and Columbia Law School (1864). Went to Chicago and established wholesale grocery business, of which he is head; president Citizens' Association (1874); president of Bureau of Charities and Municipal Art League; vice-president American Civic Association (1905); secretary of the treasury in cabinet of President Taft (1909).

MELLEN, CHARLES SANGER (1851-). Railway official; born in Lowell, Mass. Began as clerk in office of Northern New Hampshire Railroad; clerk Central Vermont Railroad (1872-1873); employed by Northern New Hampshire Railroad (1873-1880); Boston & Lowell Railroad (1880-1881); Boston & Lowell and Concord railroads (1881-1888); Union Pacific system (1888-1892); second vice-president New York, New Haven & Hartford Railroad (1892-1896); president since 1903; president Northern Pacific Railway Company (1896-1903).

MEYERHAEUSER, FREDERICK (1834-). He was born in Germany and came to Pennsylvania in 1852; removed to Illinois in 1856; and to St. Paul in 1891. President of the Meyerhaeuser Timber Company, and of what he calls the "Meyerhaeuser Syndicate," but which his opponents call the "Timber Trust"; president of Duluth & North Eastern Railroad, and the Mesaba Southern; vice-president National German-American Bank, etc.; known as the "lumber king."

MORSE, CHARLES WYMAN. Financier; engaged with his father in shipping at Bath, Me., (1877); established an extensive ice business at Brooklyn (1880), with branches at Philadelphia and Baltimore; was heavily engaged in steamship transportation; first vice-president The Butterick Company; vice-president Wall Street Exchange Building Association; director several transportation companies up to 1909.

MUNSEY, FRANK ANDREW (1854-). Publisher; born at Mercer, Me. Began in a country store; manager Western Union Telegraph office, Augusta, Me.; established the *Golden Argosy* (now *The Argosy*) in New York (1882); in 1889 he started *Munsey's Weekly*, converted into *Munsey's Magazine* two years later. Now he owns also the *All-Story Magazine*, *Scrap Book*, *Ocean*, *Railroad Man's Magazine*, Washington *Times*, and Boston *Journal*.

NEWMAN, WILLIAM H. (1847-). Railway official; born in Prince William County, Va. Began as station agent for the Texas & Pacific (1869-1872); from 1872 to 1883 he was general freight agent; traffic manager for the Southwestern system (1883-1885); traffic manager for the Missouri Pacific (1885-1887); vice-president (1887-1889). Since 1898 he has been president of the Lake Shore, since 1901 of the New York Central, since 1905 of the Michigan Central and of the Big Four.

OLIVER, JAMES (1823-1908). Inventor; born at Whitehaugh, Scotland. He came to the United States in 1835; lived upon a farm near Geneva, N. Y. (1835-1836); Mishawaka, Ind. (1836-1855); began making plows (1855); invented the "chilled plow."

OXNARD, BENJAMIN A. (1855-). Manufacturer; born in New Orleans, La.; graduate of Massachusetts Institute of Technology (1875) and influential in promoting beet sugar manufacture. Until 1889 he was engaged in sugar refining in Brooklyn; since that time he has been producing both cane and beet sugar. Now president of the Adeline Sugar Factory Company, Ltd.

OXNARD, HENRY THOMAS (1860-). Manufacturer; born in Marseilles, France; graduated at Harvard in 1882; has promoted the beet sugar industry of the United States. He is president of the American Beet Sugar Association, including all the factories in this country.

PABST, FREDERICK (1836-1904). Brewer; born in Saxony, and emigrated to the United States in 1848; educated himself, and married the daughter of Philip Best. For a time he acted as captain of the steamer *Comet* on the Great Lakes. In 1862 he took up brewing and advanced until he became president of the Pabst Brewing Company, owning one of the finest plants in the world.

PHIPPS, HENRY (1839-). Manufacturer; born at Philadelphia, Pa. At 13 he was working in a store in Pittsburg, and about 1856 he was promoted to be bookkeeper for Dilworth & Bidwell, spike manufacturers; partner in Bidwell & Phipps, powder agents, and also in Kloman & Phipps, running a small iron mill. Still later he was associated with the Carnegie Brothers in iron and steel manufacture. In the United States Steel Corporation he held the largest interest next to Andrew Carnegie; director United States Steel Corporation, Mallon National Bank, and Philadelphia Rapid Transit Company.

PILLSBURY, CHARLES ALFRED (1842-1899). Flour miller; graduated from Dartmouth in 1863, and went into a Montreal house as a clerk, where he stayed until 1869; removed to Minneapolis, where he was employed as a clerk; later his uncle, John S. Pillsbury, who had come to the Falls of St. Anthony in 1855, took him into partnership in his flour mill; introduced the roller process, and extended the business until in 1872 the firm of Charles A. Pillsbury & Company began building the largest mills in the world. In 1889 the firm sold out to an English syndicate which combined all their purchases into the Pillsbury-Washburn Flour Mills Company, of which he was president; was president also of the Minneapolis and Northern Elevator Company, and was state senator (1877-1887).

PLANT, MORTON P. (1852-). Capitalist; railway official. He was educated at Russell College, Connecticut, and began his business career at the age of 16 with the Southern Express Company in Memphis. From 1884 to 1902 he was with the Plant system of railroads, of which he was vice-president until 1902, when the system was absorbed by the Atlantic Coast Line Railroad, in which he is director; vice-president and director in the Peninsular and Occidental Steamship Company; chairman of board of directors of Southern Express Company; director in Casualty Company of America, Interborough Rapid Transit, Lincoln Trust Company, Union Gas and Electric, etc.; trustee American Surety Company.

POPE, ALBERT AUGUSTUS (1843-1909). Manufacturer; born in Boston, Mass. Began his business career as a shoe clerk. He served so well in the Union army for three years that he was brevetted lieutenant colonel for gallantry in several battles. After the war he went into shoe findings business (1865-1876); in 1877 started the Pope Manufacturing Company for making and selling small patented articles; and at the same time he began to sell imported bicycles; introduced the bicycle manufacturing industry in the United States (1878); founded *The Wheelman* (now absorbed in *Outing*) in the interests of cycling; leader in good roads movement; had large interests in numerous corporations.

PULLMAN, GEORGE MORTIMER (1831-1897). Inventor; born in Chautauqua County, N. Y. Employed for a time as cabinet maker in Albion, N. Y.; took contract for moving the buildings which obstructed the widening of Erie Canal; building contractor in Chicago; built first new sleeping car (1863); organized the Pullman Palace Car Company (1867), of which he was president the rest of his life. In 1880 he founded the model town of Pullman for the employees, which excited great interest at the time by the novel features, and became the prototype of many similar business philanthropies. His idea of vestibule trains took material form in 1887. Mr. Pullman was connected with many other enterprises, and was president of the company which started the Manhattan Elevated Railroad in New York.

RIPLEY, EDWARD PAYSON (1845-). Railway official; born in Dorchester, Mass. After receiving a high school education he went into railroad work in 1869 as clerk in the Boston office of the Pennsylvania Railroad. By 1872 he had risen to be agent for New England, and six years later he was Eastern agent, employed by the Chicago, Burlington & Quincy Railroad (1886-1890); third vice-president Chicago, Milwaukee & St. Paul Railway (1890-1895); president Atchison, Topeka & Santa Fe Railway Company since 1896.

ROCKEFELLER, JOHN DAVISON (1839-). An American oil magnate, born at Richford, N. Y. At 16 he left school in Cleveland, Ohio, and was a clerk and bookkeeper at $12.50 a month. Started in the oil business on borrowed capital with Samuel Andrews and by combinations had, in 1872, control of one fifth of the oil-refining business in the United States. Formed the Standard Oil Company in 1870 with a capital of a million dollars; the Standard Oil Trust in 1882; dissolved in 1892. His fortune is estimated at $700,000,000 and he is believed to be the richest man in the world. Among his many benefactions are millions to the church, $85,000,000 to education, science, and charity, including $35,000,000 to the New York Educational Board. Within the corporation he controls there are over 1,500,000 employees. In private life he is moral and blameless. His success is attributed to hard work and economy. Though his income exceeds that of any European monarch, his life is one of marked frugality—even approaching penuriousness.

ROCKEFELLER, JOHN DAVISON, JR. (1877-). Capitalist; born at Richford, N. Y.; associated with his father in financial enterprises; member board of managers Delaware, Lackawanna & Western Railroad Company; director Standard Oil Company, United States Steel Corporation, American Linseed Company, trustee University of Chicago.

ROCKEFELLER, WILLIAM (1841-). Capitalist; born at Richford, N. Y.; was in produce commission trade, first as bookkeeper, then partner; associated with his brother, John D. Rockefeller, in the oil business; president of the Standard Oil Company of New York; vice-president and director Standard Oil Company of New Jersey; trustee Anaconda Copper Mining Company, Consolidated Gas Company, United States Trust Company, director in several railroads, banks, etc.

ROCKFELLER, WILLIAM G. (1870-). Capitalist; treasurer Standard Oil Company of New York; director Brooklyn Union Gas Company, New York Transit Company, Union Pacific Railroad Company, Lincoln National Bank, and National Fuel Gas Company.

ROEBLING, JOHN AUGUSTUS (1806-1869). A famous civil engineer, born in Prussia and educated in the Royal Polytechnic School in Berlin. Came to America and lived on a farm near Pittsburg (1831); became engaged in many minor engineering works; appointed to survey the route across the Alleghanies adopted by the Pennsylvania Railroad; began manufacture of wire rope, and built a suspension aqueduct across Allegheny river (1844-1845); constructed suspension bridge at Pittsburg, and four aqueducts on the Delaware & Hudson Canal (1848-1850); established works at Trenton, N. J., and began suspension bridge over the Niagara river in 1851; began Cincinnati suspension bridge (1867); his last task was the bridge over East river, connecting Brooklyn and New York.

SCHWAB, CHARLES M. (1862-). Capitalist; born at Williamsburg, Pa.; removed to Loretto, Pa.; drove stage from Loretto to Cresson; entered engineering corps of Edgar Thomson Steel Works; became superintendent Homestead Works; president Carnegie Steel Company, Ltd.; president United States Steel Corporation (1901-1903); president and chairman board Bethlehem Steel Corporation; is also director in important financial enterprises.

SCOTT, THOMAS ALEXANDER (1824-1881). Railway official; born at London, Pa. Employed in 1851 by the Pennsylvania Railroad, he advanced steadily until in 1859 he became vice-president. During the Civil War he was temporarily in the service of the government as assistant secretary of war, rendering invaluable assistance to the Union cause by reorganizing the whole system of transportation. Later returned to the railroad business; was president of various roads; president of Pennsylvania Railroad (1874-1880).

SCRIBNER, CHARLES (1821-1871). Publisher; born in New York City; graduated from Princeton in 1840. After a European trip he started in the publishing business in New York City as partner in Baker & Scribner. The works of many famous au-

thors were published—N. P. Willis, J. T. Headley, Donald G. Mitchell, J. G. Holland, Noah Porter, Horace Bushnell, James McCosh, etc. In 1857 he started the importing house of Scribner & Welford, which published also many educational books. In 1870 *Scribner's Monthly* was established with Dr. J. G. Holland as editor.

SHAUGHNESSY, SIR THOMAS G. (1853-). Born in Milwaukee. Went to railroading (1869); taken to Montreal by Sir W. C. Van Horne, when assuming management of Canadian Pacific; became purchasing manager, general assistant manager and vice-president; director in important companies; great worker, phenomenal memory; knighted (1901).

SHAW, HENRY (1800-1889). An English lad opening a store in St. Louis (1820); became wealthy and did great work in botanical gardening on a 276 acre park, having 20,000 trees, library, and museum buildings, etc. He duplicated the famous gardens of Chatsworth House, England, leaving as his monument Lower Grove Park, where he is buried.

SHONTS, THEODORE PERRY (1856-). Capitalist; born in Crawford County, Pa. At 20 he graduated from Monmouth College, Illinois, and went immediately into banking at Centerville, Iowa. Later he took up law, and was a member of Drake, Baker & Shonts, practising four years. In 1882 he engaged in railroad construction, built two short lines, and later finished the Indiana, Illinois & Iowa, of which he was chief owner. In 1905-1907 he was chairman Isthmian Canal Commission, resigning to become president of the Interborough-Metropolitan Company of New York. He is president of the Toledo & Western Railroad, director in the Iowa Central Railroad, American Trust and Savings Bank, and Western Cold Storage Company.

SIEGEL, HENRY (1852-). Merchant; born at Eubigheim, Germany; came to the United States (1867); moved to Chicago (1876); established cloak manufacturing firm of Siegel, Hartsfeld & Company, later Siegel Brothers; established department store of Siegel, Cooper & Co.; established Siegel, Cooper Company, in New York (1896); purchased store of Simpson-Crawford Company (1902); manager of six large department stores.

SPRECKLES, CLAUS (1828-1909). Sugar refiner; born at Lamstedt, Hanover; came to the United States (1846); went to San Francisco (1856), where he conducted a store and later a brewery; established Bay Sugar Refinery (1863); bought sugar properties in Hawaii; invented new refining processes; established a factory at Watsonville, California, and had a beet-sugar farm of 1500 acres there; was owner in Oceanic Steamship Company.

SPRECKELS, JOHN DIEDRICH (1853-). Merchant; born at Charleston, S. C.; in 1880 founded J. D. Spreckels & Brothers Company, $2,000,000 capital, shipping and commission merchants, owning large fleet of tugs and vessels trading with Hawaii; president of Western Sugar Refining Company, Oceanic Steamship Company, Beaver Hill Coal Company, and other financial enterprises.

STEWART, ALEXANDER TURNEY (1803-1876). Merchant; born at Lisburn, Ireland; came to America in 1823. He had taught school here for two years when a small legacy received enabled him to start in dry goods business. In 1848 he built a store at Broadway and Chambers streets, New York City; 14 years later he built the store at Broadway, Ninth, and Tenth streets for his retail business, keeping the old store for wholesale trade. The new store cost him $2,750,000. At the time of his death the business had branches and agencies in the chief cities of Europe and several mills and factories in the United States.

STRAUS, ISIDOR (1845-). Merchant; born in Rhenish Bavaria; in 1854 came to United States; sent abroad (1863), by Georgia Export and Import Company, to assist agent who was to purchase steamers and supplies for shipment to the Confederate States; in 1866 he and his father formed the firm of L. Straus & Sons, importers of pottery and glassware; in 1888 became partner with brother, Nathan, in R. H. Macy & Company; member of firm of Abraham & Straus, Brooklyn (1892); first president New York Crockery Board of Trade; represented New York City on New York and New Jersey Bridge Commission; president Educational Alliance; vice-president J. Hood Wright Memorial Hospital; member Chamber of Commerce; director of numerous financial enterprises; connected with various tariff reforms; as member 53d Congress advised the formation of the Wilson tariff; on board of trustees of many charitable and philanthropic institutions.

TUTTLE, LUCIUS (1846-). Railway official; born at Hartford, Ct. At the age of 19 he became interested in the railroad business; after holding various minor positions became commissioner of Trunk Line Association (1889-1890); general manager of the New York, New Haven & Hartford (1890-1892); vice-president (1892-1893). Since 1893 he has been president of the Boston & Maine, and since 1896 of the Maine Central.

VANDERBILT, WILLIAM HENRY (1821-1885). Capitalist and financier; born at New Brunswick, N. J., son of Cornelius Vanderbilt and father of Cornelius II. Began as bank clerk in New York. As receiver for the Staten Island Railroad he cleared it from debt in two years and became its president. After that his father made him partner and manager in all his railroad and financial transactions, vice-president of the New York & Harlem, and of the New York & Hudson River Railroad. At his father's death in 1877 he became president, extended the system, and acquired the "Nickel Plate" and the West Shore Railroad.

VANDERBILT, WILLIAM KISSAM (1849-). Capitalist; born on Staten Island, son of William H. Began in the office of the treasurer of the Hudson River Railroad; second vice-president New York Central & Hudson River Railroad (1877-1883); chairman board directors Lake Shore & Michigan Southern Railway from 1883; president New York & Harlem Railroad, and president or director in numercus other corporations.

VAN HORNE, SIR WILLIAM CORNELIUS (1843-). Born near Joliet, Mich., of old Patroon family. Began life as telegraph operator; rose to division superintendent of Chicago & Alton Railway (1867); general superintendent St. Louis, Kansas City & Northern Railway (1872); general manager Southern Minnesota Railway (1874); general manager Canadian Pacific Railway (1880) then projected. He established the 9,000 miles of road and outlined the steamship extension to China and Japan, becoming president (1888-1889). Created K.C.M.G. (honorary) (1894). Example of American and Canadian product.

WANAMAKER, JOHN (1838-). Merchant; born at Philadelphia, Pa. At 14 he was errand boy in a bookstore; a retail clothing salesman (1856-1861). In the latter year he united with Nathan Brown to start a clothing store in Philadelphia, which was enlarged to a department store in 1876. Twenty years later he succeeded to the business of A. T. Stewart with a New York department store, and his two stores were the largest in the United States. He declined nomination for 48th Congress, also candidacy for mayor of Philadelphia. (1886); was presidential elector (1888); member National Republican Executive Committee (1889-1893); United States postmaster general (1889-1893). He is interested in religious work, and has done much to promote it.

WESTINGHOUSE, GEORGE (1846-). Inventor and manufacturer; born at Central Bridge, N. Y.; removed to Schenectady (1856). His inventiveness showed itself early, when he was a boy in his father's machine shop and invented a rotary engine. He served through the Civil War in the Union cavalry and as assistant engineer in the navy, and then went to college for a year. A very long list of valuable inventions stands to his credit, mostly railway, steam engine, and electrical improvements; but his greatest service to the public has been the invention of the Westinghouse air-brake and automatic railway signals. He has been at the head of many great engineering feats, especially the building of the huge electrical generators at Niagara Falls, and has received recognition by several foreign decorations. The corporations of which he is president are capitalized at $75,000,000 and employ 20,000 persons. Elected trustee Equitable Life Assurance Society of United States (1905).

WHITNEY, HARRY PAYNE (1872-). Capitalist; born in New York; graduated Yale (1894); married Gertrude, daughter of the late Cornelius Vanderbilt; director Guaranty Trust Company, Guggenheim Exploration Company, National Bank of Commerce, Newport Trust Company, Plaza Bank, Raquette Lake Railway Company, member New York Zoölogical Society.

BOOK VI.

USEFUL ARTS.

LABOR.
Mural Painting in the Congressional Library, Washington.
BY C. S. PEARCE.

DEVELOPMENT OF THE USEFUL ARTS: ANCIENT, MEDIAEVAL, AND MODERN. FOOD, WEAPONS, SHELTER, CLOTHING. PUBLIC HEALTH. PROTECTION OF HUMAN LIFE. ENGINEERING. CHEMICAL TECHNOLOGY: PHOTOGRAPHY, EXPLOSIVES, GAS MAKING, PETROLEUM REFINING, SUGAR REFINING. METALLURGY. MECHANIC TRADES: LUMBERING, WOODWORKING, MODERN BUILDING, POTTERY, PACKING INDUSTRY, FLOUR MILLING, LITHOGRAPHY. PATENTS. DICTIONARY OF AGRICULTURAL, ENGINEERING, MINING, AND TEXTILE WORKING TERMS. DICTIONARY OF EMINENT INVENTORS

The Useful Arts is a generic term which embraces all the manifold products and processes relating to our daily sustenance, clothing, shelter, transport, and enjoyment; in short, our necessaries, conveniences, comforts, and luxuries. The evolution of the useful arts coincides with the march of civilization. The history of invention is the story of mankind. The beginnings of what is broadly styled "culture" are shrouded in the mists of antiquity; but relics have come down to us from the ages when written or graven records were unknown, and from these remains of primeval arts alone, we piece together our knowledge of their users and designers. By a comparative study of the arts of primitive races, we realize that the growth of these arts is subject to well defined laws of evolution. We perceive that a race either advances or retrogrades according to its power of invention, and its adaptability to environment. And this formative process is going on in our own time, so that we may read the past in the clearer light of the present.

Invention is stimulated by human needs, and the order and development of the useful arts would naturally be dependent on the primal wants of the race. Briefly stated the most important stimuli are:—

(1) Food, its nature and preparation.
(2) Needs of defense and offense.
(3) Shelter and clothing.
(4) Needs of transportation=communication.

I. Food.—Human needs may be divided into two classes: viz., those that act from within the individual, and those that affect him from without. Hunger is undoubtedly the chief of the subjective stimuli, and the need of providing and storing food must have given rise to the first inventions. Food getting would lead to the development of varied activities, and call into use all available manual aids. It would obviously lead to the multiplication and specialization of utensils, thus opening the way for advancement in the shaping arts and the evolution of culture. The food problem has ever been paramount even among the primitive races of the world. There are four great phases through which the civilized nations of the temperate zone have passed — hunting and fishing, sheep and cattle raising, agriculture, and industry;

and these are but a succession of improvements in the means of raising food.

It is doubtful if there ever was a time when man could, without effort, acquire food and shelter by drawing entirely upon nature. Nature will not place the food in his mouth, or build an adequate roof over his head. Even the Australian bushman, who does no more than prepare a sharpened stick to unearth roots, or make weapons, spears, nets, or hooks for smaller animals, or dig pits for larger ones—even he must exert his mind and muscle to keep himself alive.

Whatsoever man's habitat, his food resources were restricted to the products of animal and vegetable life around him, and it is easy to understand that tools and weapons of some kind would soon become necessary. Man is described as a tool-making animal. Certain it is that this trait distinguishes him from the brutes. His first implements and weapons were made of wood, bone, or stone; each innovation marking a distinct era, and a higher order of intelligence.

The use of fire is another distinguishing feature of the human race. However low in the scale of civilization a tribe may be, however closely we scrutinize the traces of a prehistoric past, we can never dissociate mankind from the knowledge and use of fire. It is presumable that the preservation of fire produced by natural forces preceded its artificial production. Motion and chemical affinity are the two chief productive forces of fire. The former is employed in three different ways: (1) friction, as the rubbing together of two pieces of wood; (2) concussion, the striking together of two mineral substances; and (3) pneumatic compression. The first two methods are still very common among savage races; the third method is rarely used, though travelers have noted its employment in Burma and among the Dyaks of Borneo. Producing fire by friction stimulated primitive inventiveness, and three distinct methods were applied: (*a*) simple rubbing, which usually takes the form of rubbing a small stick of hard wood against a log of soft wood until incandescent particles are produced; (*b*) the sawing method, which consists in sawing one piece of bamboo with the cutting edge of another piece until the heated sawdust sets fire to the tinder placed beneath; (*c*) the rotatory method, that is, twirling the end of a stick set upright upon a piece of wood until a hole is hollowed and the pulverized wood becomes incandescent. This is the most common method of fire-making, and is still used by some of the Zulu tribes, the Australians, the Ainus, some of the Indians of North and South America, etc. The concussion method is to-day employed by the Fuegians, Eskimos, and the Aleuts. The flint and pyrites in time gave place to the "flint and steel," and the latter method became general among civilized races until the laws of chemical affinity were applied and it was itself superseded by matches.

Cooking.—The knowledge of fire begat methods of cooking. At first heated stones were used with which to cook meat and vegetables. This method is still employed among tribes unfamiliar with pottery. Among the Indonesians food is prepared in bamboo vessels filled with water, in which heated stones have been immersed. This method of cooking with hot stones is still in use among the Alaskan Indians and the Fuegians, and even in Europe is not infrequently used by the Albanian and Serbian mountaineers. By plastering wet earth over a basket to protect it from burning, the savage acquired the art of *pottery*, but ages elapsed before he could find good clays and mold or bake them to perfection. Pottery, no doubt, followed close upon the discovery of fire, for there is no trace of unbaked pottery. The Fuegians and Australians are still unacquainted with the art of manufacturing pottery, though, in itself, the lack of this knowledge does not necessarily imply a low degree of civilization. The cooking utensils of the Mongols, for example, consist of wooden, leather, and iron vessels; for the exigencies of a nomadic life render fragile materials undesirable.

The evolution of the potter's wheel grew out of the three special methods of manufacturing primitive pottery: (*a*) modeling by hand; (*b*) molding to a bark or wicker mold which burns away afterwards in the process; (*c*) coiling in clay. The coiling method is employed by the Zuñi Indians of New Mexico, who use a small basket dish as a mold in which to begin the work of coiling. The Kaffirs follow a similar plan, using a clay disc or wooden bowl as a base. This is a step towards the potter's wheel, only instead of a wheel it is the human hand that does the turning. The next step is the primitive wheel—a disc or board revolved by hand. At first it turned without a pivot, as is frequently seen in China to-day. With the knowledge of wheels and levers came the perfecting of the modern potter's wheel.

The grinding of wheat led to further development of the useful arts. Many tribes are yet unacquainted with flour, and eat the grain the same as we do rice and millet. The North American tribes used generally to combine the threshing, winnowing, and roasting in one operation. The grain after being triturated in the hands is thrown into a receptacle containing red-hot stones; these burn off the husk, and at the same time roast the grain. The crushing of a grain of wheat between two stones—possibly accidental—led to the discovery of flour. Three ways of preparing flour were developed: (*a*) pounding in a mortar; (*b*) trituration on a flat surface; (*c*) grinding by means of a mill turned by hand or other motive power. The most primitive form of the mortar is found among the North American Indians, being nothing more than a hollowed-out block of granite or sandstone, with a piece of porous rock for the pestle. In Africa and Oceania the pestle and mortar are commonly of wood. The most primitive hand mills, such as those used by the Arabs, the Kabyles, and the Bushmen, merely consist of a round stone turned on another by means of a handle passing through a hole in the center.

Hunting and Fishing.—The inventive faculty was called into play to devise means for capturing birds, beasts, and fishes. Traps, snares, and pitfalls, as well as a diversity of weapons, were fashioned by primitive man. For the capture of fish, spears and tridents were specially designed. The Fuegians, the Indians of Brazil, and the Melanesians, are particularly skillful in

the hurling of these pikes. Among civilized peoples the harpoon is still the missile used in whale fishing and the like. In the Andaman Islands the bow is used with which to shoot the fish. Bow nets and sweep nets made of bamboo and rattan are extensively employed among the Micronesians, the Dyaks, etc. Cast nets are not so common among barbaric tribes, though they are met with in Polynesia.

II. Weapons.—In the early stages of culture manufactured objects were not confined to particular uses; the weapon of to-day frequently became the tool of to-morrow. Neither is the distinction between defensive and offensive weapons clearly marked, for most weapons would serve both purposes equally well. Among the Ashantis, Kaffirs, Vakambas, and other negro tribes bracelets made of long hair are used as defensive weapons, although originally such objects have no connection with war. The elaborate wire bracelets worn on arm and leg by the Dyaks, the Nyam-Nyams, the Mois of Indo-China, and the Baghirmis of Central Africa, are effective armor, and are the prototypes of the vantbrace and greaves. A bracelet fitted with two spikes or spurs is an offensive weapon among the Jurs of the Upper Nile.

Offensive weapons consist of those held firmly in the hand, such as the various kinds of clubs, and missile weapons. A sharp-ended club such as is met with in the New Hebrides developed into pointed weapons, of which the assagai, lance, spear, and fork are familiar examples. With the exception of the ax, cutting weapons are invariably piercing weapons as well. A knife, made either of flint, bronze, or iron, is the simplest example. From the knife is evolved the saber, while from the flint poignard is derived the steel sword. Missile weapons grew out of the necessity of throwing a stone, stick, or other object with greater accuracy and force than is possible with the human hand. At first an effort was made to attain this end by giving some special form to the missile. The Franks, for instance, had missile battle-axes called "francisque," while the Romans used javelins of various sorts. Modifications of the club are seen in the kerri-kerri of the Bantu negroes, the knob-kerri of the Zulus, and the boomerang of the Australian aborigines. The next step was to construct some apparatus for hurling the missiles. These contrivances may be divided into three classes according to the force employed: (*a*) muscular force of man, e. g., the *amentum* of antiquity, the throwing stick, the sling; (*b*) elasticity of certain solid bodies, e. g., the various kinds of bows and arrows; (*c*) pressure of gases. This agency is not much used among uncivilized peoples. The blow tube or *zarabatana* of the South American Indians and the *sumpitan* of the Malays mark the first stages in the development of the modern firearm. Though the true firearm was known to the ancient Chinese, the invention made no headway in Europe till after the fifteenth century.

Defensive weapons embrace, for example, the various forms of shields. A shield is merely an exaggerated kind of club. A good illustration of the primitive type is the long wooden shield of the Australians, which is only a flattened-out club, thicker in the middle. A second type was distinguished by the addition of a hand guard of wood, skin, etc. The development of this feature produced the round shield, as well as the long skin-covered shield of the Zulus. The evolution of protective armor (breastplate, helmets, coats of mail, etc.) is easy to understand. The red Indians used breastplates of buffalo hide, while various materials, such as bone, ivory, wood, lacquer, and metals, are used either singly or compositely by different peoples to serve the purpose of protective armor.

III. Shelter and Clothing.—*The Hut.*—The prototype of the fixed habitation was doubtless derived from the screen made of branches and so arranged as to shelter the precious fire as well as to protect primitive man from the elements. The primeval hut was thus virtually an inclosed hearth. Among the Veddahs of Ceylon, the Andamanese, and the Indians of Brazil the screen consists of large palm leaves supported by interlaced branches. When these branches are arranged in the form of a circle, their tops joined together, and the interstices filled in with grasses, moss, or bark, the hut becomes either conical, as among the Fuegians, or hemispherical like those of the Australians. If the branches are arranged in two parallel rows the hut assumes the form of a two-sided roof, as among the Todas. The next step would be to dig out the soil beneath the hut to afford better protection, as is done by the Ainus, the Kamtchadales, and the Chukchi at the present day. This custom possibly gave the idea of providing walls, which first consisted only of rushes, twigs, and clods of earth, used to stop up the gaps at the base of the roof.

The hive-shaped huts of the Zulus and the Ovampos of South Africa, as well as those of the Gauls in the time of Caesar, probably originated in this way. The roof was strengthened and made more weather-proof by the use of straw, and so the thatched hut was evolved. The quadrangular huts developed into such dwellings as are met with in the French Congo and the coast of Guinea. Sometimes these quadrangular huts are erected on poles in marshy countries or where inundations are frequent. Such elevated houses may be seen to-day in Ceylon, while among the Indians of the Northwest, as well as in Madagascar and New Zealand, such houses may be seen raised on poles even when no water is near.

To give greater solidity to the walls of reed or twig, recourse was had to mud plastering. These mud covered walls are commonly met with in India. In dry countries it was discovered that lumps of clay formed suitable material for walls, and this led to the making of sun-dried bricks, which were in use among the ancient Babylonians and Egyptians, just as they are to-day in the Sudan and Mexico.

Movable Habitations.—So far we have traced the evolution of the fixed habitation, that is, any hut however primitive and frail it may be, which has not been built with a view to being moved. For such dwellings materials of vegetable origin were the first to be utilized. But for movable habitations materials derived from animals were more adapted for constant removal. When the prehistoric hunter stretched the skin of a wild beast on two or three poles

and fell asleep beneath it his device foreshadowed the tent. Skins long remained the best material, until the invention of plaited or woven fabrics. Like the hut, the tent took its shape from the original framework; it is conical among the North American Indians, dome-shaped among the Kaffirs, and quadrangular, in the form of a prismatic roof, among the Tibetans and the Gypsies. This last is the type of the Arab tent of to-day. The circular tent has been improved upon by the nomadic Mongols, who use wattling in place of poles and felt instead of skins. This tent has even been imitated by the Altaians in the construction of their wooden houses, usually hexagonal or octagonal in shape; and only in recent years under Russian influence do these houses become transformed into rectangular dwellings.

Granaries and storehouses were afterwards constructed, and these were usually built on wooden piles, as among the Ainus and Malays, or on a clay stand, in order to prevent their being despoiled by wild beasts. Primitive ladders, made by notching a tree trunk, were employed in order to gain access to these raised structures. Straw huts built on trees were made for emergencies as well as for observation, and these were the prototypes of the later watch-towers.

Heating and Lighting.—A fire in the center of the hut is the most primitive form of heating, the smoke issuing through the roof and doorway. The Kamtchadales, the Altaians, the Kalmuks, and many of the natives of India still follow a similar custom. To keep such a fire continuously alight the Fuegians place huge trees upon it with their ends projecting from the hut, and the trees are drawn forward as the lower parts are burned away. The chimney is a comparatively recent idea, and dates only from the eleventh century. In many houses of the Russian mujiks, the smoke from the stove issues from a small opening in the roof and from the windows. The mantelpiece over the hearth seems to have been a European invention, and really preceded the introduction of the real chimney.

Among the dwellers in tropical climes the cocoanut supplied all the requirements of a lamp. The divided shell formed the receptacle for the cocoanut oil, and the fibers covering the fruit provided the wick. The Polynesians still use a lamp of this description. Among primitive tribes resinous torches or large pine knots are burned for lighting purposes. Before the invention of the candle, torches were extensively used in Europe. It is possible that in western Europe a vessel improvised from the leaf of some suitable plant served as a model for the so-called Roman lamp with wicks.

Furniture.—Among primitive races domestic needs and conveniences are easily supplied. Some skins, straw, or dry grass to lie down upon is all the furniture required. Mats are a mark of a more advanced civilization: carpets, seats, and beds come still later. Chests and other receptacles for linen, plate, etc., are comparatively modern inventions.

Dress and Ornament.—Nudity is not necessarily synonymous with savagery. While many savage tribes know nothing of dress, (e. g., the Australians, the Botocudos, the Fuegians) there are others more advanced in civilization, like the Nyam-Nyams, who are ignorant of its uses. Dress is a question of climate and convention. In cold latitudes man was driven to protect himself from the cold and damp, but no such motive inspired the inhabitants of a hot country. Vanity alone was the primal cause.

It is a well established fact in ethnography that dress was preceded by ornament. Among primitive races the first ideas of ornament took the form of daubing some pigment upon the body. Next ornaments were attached to the body itself, and, as there were no garments on which to hang the objects of adornment, the ear, nose, lips, or other member was pierced. Nose rings are still commonly worn by native women in India, and the earrings of western civilization still remain as a vestige of barbarism. Flowers, feathers, and other ornaments were fastened to the hair.

The second stage in the evolution of ornament was the attachment of objects to the body without mutilation. Strips of hide, plaited fibers, and the like were fastened around the neck, wrists, waist, and ankles; and such primitive adornments may still be met with among the Fuegians, Bushmen, and Melanesians. To these garlands, collars, belts, and bracelets, secondary ornaments were attached, such as shells, beads of bone or colored stone, teeth and claws of animals, feathers, and strips of fur. And so dress itself began to be evolved. The beast's skin hanging from the collar foreshadowed the mantle; the appendages of the girdle developed into the skirt.

At first skins of various animals were used in their natural state. In warm climates the next step was to strip off the hair, and soak the skin in water to which cinders or other alkaline matter had been added. This is the plan adopted by the Indians of the far west in providing covering for their tents. When the Indians require skins for garments, they make the hide more supple by scraping it, cutting it in half, and polishing it. Tanning is unknown to savage tribes, but is met with among half-civilized people, such as the ancient Egyptians. A large variety of plants has been utilized to provide materials for garments. Wood, for instance, is ued for the sabot in France and Holland; bark is employed by various tribes such as the Nyam-Nyams and the Monbuttus; in Oceania materials made from the beaten bark of the paper mulberry (*Broussonetia papyrifera*) are characterized by most finished workmanship, while the *tapa* of Tahiti and the richly colored *kapa* of Hawaii will bear favorable comparison with many woven stuffs.

The art of weaving was known in the earliest times, for specimens have been found in the pyramids of Egypt. Plaiting no doubt preceded actual weaving. In its most primitive form spinning consists simply in rolling some suitable fibers between the palms of the hands, or with one hand on the thigh. A Bushman makes a line with his wife's hair by this process. The small staff on which the line is wound is next transformed into a spindle. So well adapted to its purpose is the spindle that it has come down to us from the most remote antiquity, and as used to-day in the steam spinning mills the spindle has undergone no radical alteration. At

first weaving must have been done with the needle, something like embroidery. But this tedious process ultimately gave way to a simple form of weaving loom. Dyeing is known to all peoples familiar with weaving. Prehistoric tribes severed their hides or other materials with flint knives, and sewed the pieces together after the manner of a shoemaker. They bored holes with a bone or horn awl, while the thread they used consisted of the sinews of some animal or of woven fiber, etc.

Primitive Vehicles.—The needs of transport and communication were fertile sources of invention. As these subjects are closely related to the development of commerce, they have been specially dealt with in that section (p. 416 et seq.). Most uncivilized tribes are unfamiliar with any form of vehicle, e. g., the Australian Bushmen and the Melanesians. Nomadic peoples as a rule dislike every sort of vehicle.

The cart was gradually evolved from the two trailing branches attached to the sides of a horse. The sledge represents the middle stage. Rollers were next placed under the framework of the sledge, and step by step wheels began to be formed, as ease of traction became better understood. The wheels at first were solid, and in appearance were something like a grindstone. The wheels of the East Indian *reckla*—a two-wheeled vehicle drawn by buffaloes—are usually of this kind. Four-wheeled vehicles were known in Europe during the Bronze Age, for remains have been discovered in the tombs of Scandinavia and the lake-dwellings of Italy.

More important changes have taken place in water transport. It is a far cry from the air-filled leather bottles used by the Assyrians for crossing rivers, and which still serve the same purpose in Turkestan, to the modern sailing yacht; or from the reed raft of the ancient Egyptians to the magnificent liners which traverse every sea.

Arts of Savagism.—The savage or hunter stage is coeval with the Stone Age, and is characterized by rude aboriginal arts to meet the commonest necessities of life. The ancient Britons are examples of this primitive stage of culture; the Eskimos, the Bushmen, and the Polynesians represent this "prehistoric" stage at the present time. Stone implements fall naturally into two classes: (1) blunt or roundish stones, for throwing, striking, crushing, etc.; (2) sharp or incisive stones, for cutting, piercing, digging, scraping, and the like. These two general classes of stone implements fulfilled all man's requirements in primeval days. An implement of the greatest importance in prehistoric times was the stone hammer. It was universal in its use, and indispensable to every man and woman in savagery. The Indian women of North America employ these stone hammers to pound dried meat into meal for pemmican, to crush bones to extract the marrow, and to beat the hides of animals to make them pliable. It is curious that with all our modern ingenuity it is still necessary to abrade granite in the same manner as the ancient Egyptians are represented as doing it, in the same way that primitive man did it, namely, by pecking and hammering away the surface a few grains at a time. Prehistoric hammers are, not unnaturally, the commonest objects in museums.

This phase of pristine culture is illustrated by some comments of Hearne concerning the Indians in northwest Canada:—

"Their household furniture chiefly consists of stone kettles and wooden troughs of various sizes; also dishes, scoops, and spoons made of the buffalo or musk ox horns. Their kettles are formed of a pepper-and-salt colored stone; and though the texture appears to be coarse, and as porous as a dripstone, yet they are perfectly tight, and will sound as clear as a China bowl. Some of these kettles are so large as to be capable of containing five or six gallons; and though it is impossible that these poor people can perform this arduous work with any other tools than harder stones, yet they are far superior to any I have ever seen in Hudson's Bay, every one of them being ornamented with neat moldings round the rim, and some of the large ones with a kind of flute-work at each corner."

Savages knew how to bore holes with stones and how to perforate stone. They also made saws of flint and obsidian. The Eskimos still saw such hard stones as the pectolite, which is placed amongst the jadoid materials for temper and texture. The discovery of the principle that a very hard substance could be cut by a very soft one by means of sharp granules of a denser material belongs unquestionably to savagism. Needles, fishhooks, chisels, knives, and arrowheads were fashioned out of stone, as well as out of bone or hard wood. The useful arts made great strides, and the imperfection of the implements was counterbalanced by the skill and knack of their users.

Arts of Barbarism.—The hunter stage developed into the pastoral, though still remaining nomadic; this roving life preventing a proper development of the arts. Agriculture in the sense of hoe culture (what the Germans call *hackbau* as distinguished from the regular tilling of the soil *ackerbau*) succeeded, though in a limited form it was practised by the nomadic shepherds of the second stage through which man has passed. When the third or true agricultural stage was reached, e. g., by the Aryans, considerable progress began to be made in the useful arts.

As soon as smelting was understood stone began to be superseded, and with the introduction of the metallurgical arts savagism was left far behind. The first metal to be smelted was copper, but as this was found too fragile in its pure state for the manufacture of arms and implements, an alloy of tin was added, and bronze became the distinguishing feature of all barbarians. The Bronze Age was, in short, contemporaneous with the era of barbarism.

Bronze was utilized in the manufacture of tools—hammers, saws, knives, needles, etc.; ornaments such as bracelets, earrings, brooches; and implements, especially hoes, spades, and plows. These latter were a great improvement over the digging sticks of the Stone Age, and the harvest became more plentiful, due to improved tillage. Bronze was likewise used in the fabrication of all utensils and particularly weapons—swords, axes, daggers, lance heads. It is obvious that the knowledge of these arts gave a marked superiority over the tribes still steeped in savagism. The art of war was developed, more permanent houses built, working in wood and stone was improved, and the industrial arts made steady headway.

Among the barbarians must be numbered the ancient Egyptians, Assyrians, Chinese, Hindus, Persians, and Aztecs. Many inventions are pe-

culiar to the Bronze Age: e. g., the plumb, level, square, wheel, harrow, plow, loom; the various discoveries include the art of brickmaking, quarrying and dressing stone, preparing mortar, spinning, weaving, dyeing, glue and glass manufacture. The age furthermore gave birth to the art of writing, and laid the foundations of all the fine arts.

Arts of Early Civilization.—In the development of culture new knowledge always starts from old, and every advance is the result of skill and foresight: the earliest gnomon—merely a stick thrust in the ground—gave place to the sundial; the turning lathe of the Egyptians and the Hindus, worked first by hand, and afterwards with a bow, led to a continuous rotatory movement by means of a wheel. When the art of smelting had been thoroughly mastered man became familiar with the uses of iron. He found that it was harder and would take a better cutting edge than bronze, so welcomed it as the fittest material for weapons, tools, and implements. Iron became a precious metal, and at one time was hoarded as a miser hoards his gold. The relative costliness of iron during the Iron Age largely accounts for so many iron weapons being found in ancient tombs and coffins. Bronze and stone, however, were not altogether discarded. The later period of the Iron Age brings us into historic times.

Iron was well known in northern Europe before the time of the Romans. In a cemetery near Hallstadt in Austria, nearly one thousand tombs have been excavated, all filled with iron and bronze instruments, but not a single Roman coin. In the tombs which belong to the later Iron Age objects of Roman art and Roman coins are invariably found.

While every civilized country has successively passed through the rough stone, polished stone, bronze, and iron ages, it must not be thought that every country passed through them at the same time. The Egyptians were in their iron age while the Greeks were barbarians using bronze, and the nations of northern Europe were using stone. The stone age in America was not passed till after the European immigrations. Many savage tribes are still in the rough stone age, while others have adopted bronze and iron in the manufacture of their edged tools without rising above savagism, just as some nations have adopted steel and yet remain barbarous. We thus see that these "ages" are merely epochs in the civilization of each country, and are not periods in the life of the human race as a whole.

Pelasgian civilization is responsible for many important discoveries. Archimedes, for instance, discovered the principle of the lever, and the method of ascertaining specific gravity. He also invented the endless screw, the screw pump, burning or concave mirror, and the catapult for throwing stones. The Greeks likewise invented the suction pump, sundial, and perspective drawing, and made use of the water wheel as a source of mechanical power. Latin civilization, on the other hand, was not distinguished for its inventions. We read of a magnifying glass in a Latin author, and there is a record of a crude reaping-machine being experimented with in Roman Gaul. The Gauls were the inventors of soap, and were also the first to use it.

Arts of the Middle Ages.—Three inventions—all derived from the Orient—revolutionized Western civilization and widened the gulf between Christendom and barbarism: the mariner's compass, gunpowder, and printing. The magnetic needle which the Chinese fixed on a small wooden float in a bowl of water was arranged on a pivot in a box by a Neapolitan mariner about the end of the thirteenth century; thus navigation received its most important aid, and shipbuilding its greatest stimulus. Gunpowder, also brought to Europe by the Saracens, was no longer the plaything of the Asiatics, but changed the character of warfare, and incidentally promoted iron-working.

In the latter part of the fourteenth century cast iron largely superseded wrought iron and the metal became much cheaper. But the greatest invention of all was that of printing, for it spread the light of learning throughout the civilized world, and paved the way for the downfall of tyranny and superstition.

The useful arts made great strides particularly between 1450 and 1550. Iron foundries were enlarged and improved, double-entry bookkeeping was invented, and among other noteworthy inventions were forks, pins, pocket watches, lead pencils, amalgam mirrors, spring locks for muskets, machinery for printing cloth, the spinning wheel (previously well known in India), horse coaches, and the diving bell; zinc was likewise discovered and the silk trade was inaugurated at Lyons.

Arts of the Modern Era.—*Before Steam.*—In the sixteenth century Europe was enriched by various importations from the New World: potato, tobacco, maize, numerous grasses, turkeys, Peruvian bark, sarsaparilla, ipecacuanha, chocolate, and cochineal. The mineral wealth of America gave a new impetus to inventions. Stamp mills were invented for the crushing of ores; and the opening of the quicksilver mines in Peru led to the discovery of the separation of silver by amalgamation. Wooden bellows were invented, also the stocking loom.

The seventeenth century was enriched by the important scientific discoveries of Galileo, Kepler, and Newton, and the invention of the telescope, microscope, and barometer. Other important inventions were the air pump, fire engine, leather fire hose, ribbon loom, the tinning of iron, stoves of brick and tile, and a crude steam engine designed for pumping.

The next century gave us the chronometer, pianoforte, horizontal escapement for watches, fly shuttle, and considerable improvement was made in existing inventions. The stereotype, invented in Holland, began to be widely used in Great Britain. The English pioneers in New England invented a new type of ax and ax helve with which they hewed fresh tracks through the virgin forests.

After Steam.—The steam engine inaugurated what may be called the golden age of invention, and led to an unprecedented development of industries and commerce. Invention followed closely in the track of science, and the genius of the age found expression chiefly in labor-saving machines and appliances. No sphere of human activity has been ignored by the inventor. In many fields the American has led the way, and it is no exaggeration to say that American in-

ventors have contributed more to the national welfare than any other class.

Labor-saving inventions have greatly increased the opportunities of labor, and the unreasoning fears of former hand-workers have been belied by world results. When we compare the machinery of the past dependent on hand or horse power with the machinery driven by steam or electricity, the inventions of all previous epochs pale almost into insignificance. To mention only a few which have laid the whole world under a debt of gratitude: the locomotive, electric telegraph, electric light, the telephone and the manifold applications of electricity, the typewriter, sewing machine, reaper, bicycle, automobile, phonograph, photography, X-rays—and the list is just begun. Stimulated by the splendid achievements that confront us on every side, the inventive genius is more active to-day than ever, and who can say that the inventions of the wonder-working nineteenth century may not be eclipsed by the discoveries of the twentieth?

PUBLIC HEALTH.

In all ages of the world the state has realized its obligations to adopt measures necessary for the preservation of public health. Out of these attempts have grown the knowledge and methods which are known to us by the name of sanitary science. Among the most marked examples of laws to regulate the mode of daily life of a people with a view to the preservation of health is the code of laws prescribed by Moses for the Hebrew people. The name "sumptuary" is given to those laws which sought to regulate daily life, and numbers of these were enacted in England and other parts of Europe as late as the reign of Queen Elizabeth (1558-1603). In the general sweeping away of restrictions upon the liberty of the subject, which culminated in the French Revolution, these laws disappeared. In their place has grown up a rather elaborate system of public health inspection and regulation under the direct control of the authorities with a view to safeguarding the health and welfare of the community at large. The machinery for the performance of this service is becoming more and more complicated as the efforts extend in many directions.

The departments controlled by a system of sanitation are very numerous, but the principal efforts are directed toward securing a supply of pure air and water, adoption of means for the removal and disposal of sewage and waste products, and for securing purity of the food supply. These are included under the general head of hygiene and come directly within the province of a professional class known as sanitary engineers.

A most important supplementing force in securing public health is the great service of the medical profession in both a public and private capacity. The aid that it is rendering in the direction of vaccination, the use of antitoxin and the numerous serums, together with its contributions in other ways to boards of health and in the great public hospitals, are perhaps most markedly emphasized by the absence of the fearful plagues and pestilences which wrought such appalling devastation and havoc throughout the world only a few centuries ago, the most notable of which are outlined in the following table:—

Plagues and Pestilences.

Date.	Locality.	Remarks.
B.C.		
767	Throughout the world	Plague; mentioned by Petavius.
534	Carthage	Infectious distemper; children offered in sacrifice as an atonement.
461	Rome	Plague; 100,000 persons died.
430	Greece, Egypt, Ethiopia	Plague; described by Thucydides.
188	Egypt, Syria, Grecian colonies	Plague; according to Pliny, 2,000 persons perished daily.
A.D.		
80	Rome	Infectious disease; 10,000 persons died daily.
167 169	Roman Empire	Fatal contagious sickness.
189 250 to 265	Roman Empire	Plague (smallpox or bubo plague?); many provincial towns depopulated; in Rome itself, for some time, 5,000 persons died daily.
430	Britain	Plague; not enough survivors to bury the dead.
558 and after	Europe, Asia, Africa	Plague.
746 to 749	Constantinople, Sicily, Greece, Calabria	Contagious disease; 200,000 Constantinopolitans died.
772	Chichester (England)	Epidemic disease; 34,000 persons died.
954	Scotland	40,000 persons perished.
1094	London	Epidemic.
1095	Ireland	Epidemic.
1111	London	Distemper; great mortality among both human beings and domestic animals.
1172	Ireland	English invaders driven back by the plague.
1204	Ireland	Plague.
1267	England	Great mortality from plague.
1340	Italy, Germany	First appearance of "Black Death" in Italy; thousands perished in Germany.
1348	London	"Black Death"; 200 persons buried daily in the Charterhouse yard.
1362	England	57,376 persons died.
1362 1367 1370 1379	Western Europe	Great mortality, especially near Paris and London, and in parts of Ireland.
1383	Ireland	"Fourth pestilence."
1407	London	Plague; 30,000 persons died.
1466	Ireland	Famine and pestilence; hundreds died.
1470	Dublin	Mortality very great.
1471 1478	England	Plague; death of more people than in the constant wars of the fifteen years previous.
1485	London	"Sudor Angelicus" (sweating sickness).
1499 1500	London	Plague; royal court removed to Calais.
1506 1517	England	Sweating sickness; frightful mortality.
1522	Limerick	Plague; thousands died.
1528	England	Sweating sickness.
1529	North Germany	Sweating sickness.
1548 1551	England	Sweating sickness.
1603 1604	England, Ireland	Plague; 30,578 persons perished in London alone.
1611	Constantinople	Pestilence; 200,000 persons died.
1625	London	Plague; 35,417 persons died.
1630	Italy	Plague; 247,000 persons died.
1632	France	60,000 persons died at Lyons.
1656	Naples	Plague; in six months 400,000 persons perished.
1664 1665	London	Great plague; 68,596 persons said to have died; fires kept burning to destroy the contagion; city not free from infection until the great fire (1666).
1720	Marseilles and vicinity	Plague; 60,000 persons died.

Date.	Locality.	Remarks.
A.D. 1741 1742	New York City	Yellow fever.
1743	Messina	Plague.
1760	Syria	Plague.
1773	Persia	Infectious distemper; 80,000 persons died in Bassora.
1773	Saulica (France)	Out of 180 persons present at the opening of a grave, 174 were attacked by a putrid fever.
1784	Smyrna, Tunis	Plague; 20,000 persons perished in Smyrna.
1791 1795	Atlantic coast of North America	Yellow fever.
1792	Egypt	Plague; about 800,000 persons died.
1798	Baltimore, Philadelphia, New York	Yellow fever; one out of every twenty-seven died in New York, several thousand in and about Philadelphia, from the latter city 50,000 of its 70,000 inhabitants fled.
1799	Coast of Africa, particularly in Barbary	Plague; 3,000 persons died daily; at Fez, 247,600 perished.
1800	Morocco	Plague; 1,800 died in one day.
1804 1805	Spain, Gibraltar	Pestilence.
1805	North American ports	Yellow fever; from New York 37,000 of the 70,000 inhabitants fled.
1813	Malta	Plague.
1814	Asia Minor, Palestine, Grecian Archipelago	Plague; 30,000 persons died in Smyrna.
1816	Naples	Plague.
1817	India	Great mortality from cholera; a large proportion of soldiers, both Europeans and natives, perished.
1818	Bombay, Ceylon, Siam, Malacca, China, Islands of Mauritius and Bourbon	Cholera.
1819	Tunis	Plague; half the population perished.
1819 1822	Seaports of the United States	Yellow fever; mortality not so great as before.
1821	Persia	Cholera.
1823	The Mediterranean; Aleppo, Antioch, and other places	Cholera.
1828	Gibraltar	Epidemic fever; great mortality.
1830	Russia	Cholera; 8,576 attacked, of whom 4,630 died.
1830	England, Scotland	Cholera; made its first appearance in England at Sunderland.
1831	Russia, Poland, Hamburg (Germany)	Cholera; Russian and Polish armies attacked; of 3,012 taken ill at Warsaw, 1,462 died; at St. Petersburg 7,567 cases were reported, of whom 3,804 died in forty-eight days.
1832	Great Britain, Paris, Canada, Middle Atlantic and Southern States	Cholera; in Great Britain, mortality not over 6,000; in Paris, about 15,000 of the 750,000 inhabitants; in Canada, about 2,000 each in Quebec and Montreal; in New York City, 3,000 of the 6,000 persons attacked.
1848 1849	England, America	Cholera.
1865	England	Cattle-plague; resembling typhus.
1865	Smyrna, Constantinople, Paris, Marseilles, Naples	Cholera.
1866	Dublin	New disease; many persons died a few hours after seizure.
1878	Southern States; particularly the city of Memphis.	Yellow fever.
1879	Astrakhan	Plague.
1884 1885 1892	Europe	Cholera.

Another measure of the efficacy of the means adopted is the decrease in the death rate of countries where accurate and full statistics are procurable. Such statistics are most dependable where a good system of registration of deaths is practised; but in this connection it must be noted that there is sometimes an apparent increase in the death rate of a place after a thorough system of registration has been installed. Very often this is not due to an increase in the mortality, but simply marks a more exact knowledge due to better means of collecting information.

Birth and Death Rates of the World.

(Based on the returns of the latest census.)

Country.	Birth rate per 1,000 of population.	Death rate per 1,000 of population.
Australia	27.0	13.0
Austria	36.6	25.4
Belgium	28.9	19.3
Bulgaria	41.9	22.3
Canada*		
Cape Colony	34.0	16.0
Ceylon	34.3	27.6
Denmark	29.8	16.9
France	21.4	21.9
German Empire	35.6	22.1
Hungary	39.3	26.9
India	37.4	36.8
Italy	32.9	23.8
Japan	31.4	20.3
Netherlands, The	32.3	17.8
New Zealand	26.0	10.0
Norway	30.1	15.9
Philippine Islands	47.9	31.7
Portugal	30.1	20.3
Roumania	39.5	26.3
Russia	49.5	32.8
Servia	38.0	21.0
Spain	34.4	28.7
Sweden	26.9	16.8
Switzerland	29.1	19.3
United Kingdom	28.2	15.5
United States	35.1	17.8

*Canada gathers no vital statistics.

Causes of Death in the United States.

Cause.	Death rate per 100,000.		Increase or decrease.	
	1900	1890	Inc.	Dec.
Pneumonia	190.9	186.9	5.0	
Consumption	190.5	245.4		54.9
Heart Disease	134.0	121.8	12.2	
Diarrheal Diseases	85.1	104.1		19.0
Kidney Diseases	83.7	59.7	24.0	
Apoplexy	66.6	49.0	17.6	
Cancer	60.0	47.9	12.1	
Old Age	54.0	44.9	9.1	
Bronchitis	48.3	74.4		26.1
Cholera Infantum	47.8	79.7		31.9
Debility and Atrophy	45.5	88.6		43.1
Meningitis and Brain Inflammation	41.8	49.1		7.3
Diphtheria	35.4	70.1		34.7
Typhoid Fever	33.8	46.3		12.5
Influenza	23.9	6.2	17.7	
Brain Diseases	18.6	30.9		12.3
Croup	9.8	27.6		17.8
Malarial Fever	8.8	19.2		10.4

The causes of high death rate which can be remedied are the effects of vice, unhealthy occupations, poverty, and unsanitary dwellings. The rural death rate in the area of the United States in which registration is compulsory averages 14.3, while in cities within the same area it is 17.5. The United States has recognized by legislation only one dangerous trade—that which uses emery wheels.

Along with this evidence, the expectation of life at any given age as made up by insurance companies from years of experience supplies

important information, for with the increase in sanitation and the promotion of public health it is reasonably to be expected that the period of expectation should increase. The securing of information upon this important matter is a question not only of time but also of extremely accurate information. Such is to be hoped for as the methods of collection and registration of information are perfected.

Expectation of Life.

Age.	Expectation in years.	Age.	Expectation in years.	Age.	Expectation in years.	Age.	Expectation in years.	Age.	Expectation in years.
0	28.15	20	34.22	40	26.04	60	15.45	80	5.85
1	36.78	21	33.84	41	25.61	61	14.86	81	5.50
2	38.74	22	33.46	42	25.19	62	14.26	82	5.16
3	40.01	23	33.48	43	24.77	63	13.66	83	4.87
4	40.73	24	32.70	44	24.35	64	13.05	84	4.66
5	40.88	25	32.33	45	23.92	65	12.43	85	4.57
6	40.69	26	31.93	46	23.37	66	11.96	86	4.21
7	40.47	27	31.50	47	22.83	67	11.48	87	3.90
8	40.14	28	31.08	48	22.27	68	11.01	88	3.67
9	39.72	29	30.66	49	21.72	69	10.50	89	3.56
10	39.23	30	30.25	50	21.17	70	10.06	90	3.43
11	38.64	31	29.83	51	20.61	71	9.60	91	3.32
12	38.02	32	29.43	52	20.05	72	9.14	92	3.12
13	37.41	33	29.02	53	19.49	73	8.69	93	2.40
14	36.79	34	28.62	54	18.92	74	8.25	94	1.98
15	36.17	35	28.22	55	18.35	75	7.83	95	1.62
16	35.76	36	27.78	56	17.78	76	7.40		
17	35.37	37	27.34	57	17.20	77	6.99		
18	34.98	38	26.91	58	16.63	78	6.59		
19	34.59	39	26.47	59	16.04	79	6.21		

Public health legislation on a modern basis began in France in 1832, and in England in 1848. The chief point of difference between these laws and the old sumptuary laws was in the provision of means to enforce them. In France this obligation rests upon the prefect, mayor, or other public official. In England special boards are appointed. In Germany the public health policy is largely dictated by the universities, whose recommendations are followed by the government. In America boards or bureaus of health are controlled by the federal, state, and municipal constitutions, and their work is to prevent and control contagious, epidemic, and endemic diseases, and all other matters pertaining to public health. The stamping out of contagious diseases is now receiving a very large share of the attention of the authorities, and their efforts are directed especially towards the control of diphtheria and tuberculosis. By the use of antitoxin in diphtheria the death rate has been reduced from forty to eight per cent., and tuberculosis is now recognized as a contagious disease, the spread of which can be prevented by the observance of sanitary and hygienic precautions.

The pure food supply has been regulated by federal legislation, which is aimed especially at the adulteration of food. The Food and Drugs Act of June 30, 1906, establishes standards of purity for foods, medicines, and liquors, and requires that all preparations be properly branded or labeled to indicate the degree of purity or the method of preparation. The standards are fixed by the secretary of the treasury, the secretary of agriculture, and the secretary of commerce and labor. This Act goes very much farther than any previous legislation, though for many years there has been careful provision made for the inspection and regulation of the supply of milk. The extent to which adulteration has been practised in all countries is shown by the following list:—

ADULTERATION OF FOOD.

Beer has been known to contain vitriol, potash, poppy heads, tartar, linseed, licorice, alum, wild cherries, henbane, chicory, pine sprouts, camomile, salicylic acid, picric acid, etc. Several deaths have resulted from adulteration with arsenic.

Bread is often improved in color by the use of alum and sulphate of copper.

Butter has been found to contain water, buttermilk, animal and vegetable fats, gypsum, chalk, flour, cheese, salicylic acid, boric acid, borax, glucose, alum, anilin yellow, and other dyes. More than 12 per cent. of water and 5 per cent. of salt is adulteration.

Oleomargarine or artificial butter or butterine is made from the fat of beef animals, and, while not a bad product, must not be sold as pure butter. It originated in France as a result of a prize offered at the suggestion of Napoleon III. for the best substitute for butter. Hippolyte Mège was awarded this prize in 1869.

Cheese is often adulterated with foreign fats and potato flour.

Chocolate and Cocoa sometimes contain flour, potato meal, sawdust, mutton tallow, and oils.

Coffee, when ground, has been found to be adulterated with chicory, roasted beans or peas, tan bark, sawdust, iron rust, etc.

Confectionery is not adulterated to the extent to which it was formerly subjected. The harmful matter often lies in the coloring or as starch, sawdust, artificial extracts of fruits, benzaldehyde, and many other substances.

Drugs are often adulterated by mixing in substances which closely resemble the drug but which contain none of the medicinal properties.

Flour often contains cheaper grain products, gypsum, and mineral matters. These frauds are more practised in Europe than in the United States.

Honey often contains syrups, meal, cornstarch, cane sugar, and grape sugar.

Jams and **Jellies** sometimes contain gelatin, glue, coloring matter, artificial flavors, and zinc oxid.

Mustard is very frequently adulterated with flour, grain, or starch.

Pepper and Spices are commonly adulterated, and samples sold as pepper have contained no black pepper at all, but were mixtures of mustard-husks, red pepper, starch, gypsum, sand, etc.

Olive Oils often contain cottonseed oil, sesame oil, or ground-nut oil.

Pickles and **Canned Goods** frequently contain preservatives and mineral salts such as green copper salts in French peas and pickles to impart a brighter color. These are highly dangerous and harmful adulterations.

Spirituous Liquors are often wholly artificial products. Fusel oil and the use of methylated alcohol (wood alcohol) are extremely harmful ingredients.

Sugar is, on the whole, a pure article. Sometimes glucose, terra alba, and sand are found in white sugar, but adulteration of the brown sugar is more common.

Tea sometimes contains the leaves of linden, sage, strawberry, and similar plants. Iron salts are sometimes added to dried or used tea leaves to give the required strength.

Tobacco is artificially colored and flavored,—the so-called artificial fruit flavors being much used.

Vinegar contains added water and sulphuric or hydrochloric acid.

The accumulation of vital statistics provides for the collection of information upon every detail of the work of the authorities in connection with the promotion of public health, and throughout the civilized world these departments are building up a vast amount of authoritative information upon an important subject.

PROTECTION OF HUMAN LIFE.

It has come to be thoroughly recognized as one of the first duties of the state that human life be protected from accidents and casualties. A great deal of important legislation has been enacted in this direction. Among the many agencies provided for this valuable service may be mentioned the United States life saving service for the prevention of drowning, the department for the inspection of explosives, the well-equipped fire service, the boards of inspectors of buildings, the erection of lighthouses and the establishment of buoys, and the highly perfected ambulance service of all large cities.

Life Saving Service.—In 1849 Congress appropriated $20,000 for the establishment of a life saving service, but it was not until 1871 that the present institution was founded, and this has grown to such proportions that the ocean and lake coasts of the United States are guarded by the stations of the life saving service under the control of the United States treasury department. These stations number 200 on the Atlantic coast, 60 on the Great Lakes, 17 on the Pacific coast, and one at Louisville, Ky. The United States volunteer life saving corps has nearly 2,000 stations with 22,000 members, and a record of its service is contained in the statement that within 12 years it has saved 6,557 lives and has distributed 1,705 honor medals. The maintenance of this service costs annually about $1,850,000; yet in one year (1906) the value of property saved by it was $11,972,280; and out of 4,099 persons whose lives were imperiled, only 19 were lost.

Fire Departments.—For many years the fire companies were composed wholly of volunteers. The first attempt at organizing a department of paid fire employees was made in New York City, in 1865, since which time the system has been adopted throughout the country. The number of employees in this department in the important cities of the United States is given elsewhere in a table of municipal statistics. The United States has suffered severely by fire, largely on account of the method of construction of buildings, the great number of wooden buildings, and the absence of rigid inspection laws in the past. Yet, notwithstanding the enormous losses as shown by the list of conflagrations below, there is very marked improvement in all these directions.

Great Fires and Conflagrations.—London, September 2-6, 1666.—89 churches, many public buildings, and 13,200 houses destroyed; 400 streets laid waste, 200,000 persons homeless. The ruins covered 436 acres.

New York, Dec. 16, 1835.—600 buildings; loss, $20,000,000. Sept. 6, 1839.—$10,000,000 worth of property.

Pittsburg, April 10, 1845.—1,000 buildings; loss, $6,000,000.

Philadelphia, July 9, 1850.—350 buildings; loss, $1,500,000; 25 persons killed; 9 drowned; 120 wounded.

St. Louis, May 4, 1851.—Large portion of the city burned; loss, $15,000,000.

San Francisco, May 3-5, 1851.—2,500 buildings; loss, $3,500,000; many lives lost. June 22, 1851.—500 buildings; loss, $3,000,000. April 18-19, 1906.—Loss, $400,000,000.

Santiago (Spain), Dec. 8, 1863.—A fire in the church of the Campania, beginning amid combustible ornaments; 2,000 persons killed, mostly women.

Charleston, S. C., Feb. 17, 1865.—Almost totally destroyed, with large quantities of naval and military stores.

Richmond, Va., April 2 and 3, 1865.—In great part destroyed by fire at time of Confederate evacuation.

Portland, Me., July 4, 1866.—Almost entirely destroyed; loss, $15,000,000.

Chicago, Oct. 8 and 9, 1871.—Three and one half square miles laid waste; 17,450 buildings destroyed; 200 persons killed; 98,500 made homeless. July 14, 1874.—Another great fire; loss, $4,000,000.

Great forest fires in Michigan and Wisconsin, Oct. 8-14, 1871.—2,000 lives lost.

Boston, Nov. 9-11, 1872.—800 buildings; loss, $73,000,000; 15 killed.

Fall River, Mass., Sept. 19, 1874.—Great factory fires; 60 persons killed.

Brooklyn Theater burned, Dec. 5, 1876.—300 lives lost.

St. John, N. B., June 20, 1877.—Loss, $12,500,000.

Seattle and Spokane, Wash., 1889.—About $10,000,000 each.

Jacksonville, Fla., May 3, 1901.—Property loss, $10,000,000.

Iroquois Theater, Chicago, Dec. 30, 1903.—Entailed a loss of 639 lives.

Baltimore, Md., Feb. 7 and 8, 1904.—More than 75 city blocks destroyed, covering 140 acres; financial loss, $85,000,000.

Rochester, N. Y., Feb. 26, 1904.—Fire in business center, loss, $2,700,000.

Toronto, Canada, April 19, 1904.—Destruction in business district of $12,000,000.

Iloilo, Island of Panay, P. I., April 19, 1907.—20,000 homeless.

Coney Island, N. Y., July 28, 1907.—Loss $1,500,000.

Boyerstown, Pa., January 13, 1908.—250 persons burned in a theater.

North Collinwood, Cleveland, O., March 4, 1908.—167 children burned in a public school.

Chelsea, Mass., April 12, 1908.—Loss $6,000,000.

Kootenay Valley, B. C., August 4, 1908.—Forest fires burned three towns and $6,000,000 worth of property.

New Orleans, La., August 30, 1908.—Loss $1,500,000.

Annual loss from forest fires.—$50,000,000.

ENGINEERING.

Great engineering achievements are among the most remarkable manifestations of man's power over the forces of nature and the obstacles to human progress. As a measure of a nation's civilization conquests in this direction are more tangible and real than mere intellectual advance, of which, however, they are a result. The audacity to plan, the ingenuity to overcome, and the perseverance that is baffled but not beaten

WILLIAMSBURG SUSPENSION BRIDGE. New York.

by such enterprises as the laying of the trans-Atlantic cable, the cutting of the Panama Canal, are qualities of heart and mind which evoke at once the awe and admiration of the world.

Bridges.—A bridge is a structure which spans a river, ravine, or other space, and designed for the passage of pedestrians, animals, or vehicles. A tree fallen across a stream is the most primitive conception of a bridge, and its place is taken by the modern girder or truss bridge. Another simple plan is to suspend a rope from bank to bank and attach a hammock thereto which can be drawn across at will. The

COMPRESSION OR ARCH BRIDGE. Victoria Falls, Rhodesia. 420 ft. above river.

rope is the prototype of the suspension bridge. Pontoons, or bridges of boats ranged side by side across a stream, were used by the ancient Egyptians, and are still commonly used in connection with military transport.

A bridge consists of a substructure, i. e., the abutments and piers, usually of masonry, and a superstructure, or the metal or timber framework, supported by the substructure. There are three types of bridge structures: (1) compression bridges, the arches springing from one abutment to another; (2) truss bridges, which consist of trusses or girders resting on the abutments; and (3) suspension bridges, formed of cables or chains suspended from towers. Bridges may again be classified as stone, timber, or metallic structures.

Stone Bridges were first built by the Romans, and many ruins are scattered throughout the

BROOKLYN BRIDGE. Suspension.

ancient empire. The first stone bridge in London was begun in 1176 by Peter of Colechurch, a priest, and it took 33 years to build.

Timber Bridges.—The oldest on record is the *pons sublicius*, which was built across the Tiber, 621 B. C. The longest timber span on record was built over the Limmat river, near Baden, 1760, and measured 366 feet between the supports.

Metallic Bridges.—Cast iron was first used for bridges toward the end of the eighteenth century in England. The first iron bridge in the United States was built over the Erie Canal in 1840.

Truss Bridges are by far the most numerous at the present date, and these may be either fixed independent spans or continuous over several spans, draw bridges, or cantilever bridges. The terms "truss" and "girder" are often used indiscriminately, but a girder properly is one piece or several pieces riveted together so as to virtually form a solid beam. A truss consists of an upper chord, a lower chord, and diagonal members connecting them, the whole consisting of an open framework so arranged that the main parts are subject only to tensile or compressive stresses. A cantilever bridge is formed by two trusses extending from opposite abutments over two piers, and united by another shorter simple truss.

Suspension Bridges began to receive serious attention in England in 1814. In the United States Charles Ellet built a suspension bridge across Schuylkill River in 1842. The suspension system was vastly improved by John A. Roebling, and made more suitable for railway purposes. Methods of stiffening a suspension bridge by trussing the cables have also been adopted, the Point Street bridge at Pittsburg, Pa., being a notable instance.

The science of the theory of stresses and of the properties of materials is now very exact, and the failure of bridges due to imperfect construction is becoming almost a thing of the past. Bridge disasters are usually due to inadequate inspection.

ARTESIAN WELLS. This class of wells takes its name from Artois, in France, where they have long been used. Artesian wells are driven to procure water in arid regions, and in oil and natural gas borings. These wells are driven by a chisel-shaped drill operated

STEEL ARCH BRIDGE. Over Niagara River.

by hoisting machinery on a derrick and protected by an iron tube of about six inches in diameter, built up in sections as the drill penetrates the earth. A device, called a "drill jar," formed of two links, connects the drill with the rope and both loosens and drives the drill at the proper times by automatically administered blows. The artesian well method of boring differs from the driving method by which a metal tube is driven into the ground by hammers. This latter was devised by Colonel Green (1861) to meet his necessities during the Civil War.

BLASTING. Blasting operations have been prosecuted on a gigantic scale since the introduction of nitroglycerin (1846) and of dynamite (1847). One of the most celebrated pieces of blasting was the removal of Flood Rock (Hell Gate) between New York City and Long Island Sound on October 10, 1885. By the mere closing of an electric current over nine acres of solid rock were blown into fragments by the simultaneous explosion of 40,000 cartridges containing 75,000 pounds of dynamite and 240,000 pounds of rackarock, at a cost of $1,000,000.

CAISSON, A pneumatic contrivance of the nature of a greatly enlarged diving bell used in extensive local work. It was invented (1841) by M. Triger of France. It is a vertical cylinder divided into sections or compartments with the open end resting upon the bottom of the river or sea. Water is kept out by compressed air; entrance and exit being effected by the middle compartment. Material is taken out by a sand pump. Sometimes excavation is carried on within the caisson until the required depth is reached or until a suitable foundation is reached then the caisson is filled with cement and forms a part of the foundation, as with the Brooklyn (East River) Suspension Bridge. A peculiar symptom, the "bends," affects the workmen who too abruptly leave the heavy pressure of the compressed air of the caisson; paralysis and other nervous derangements follow neglect to use the graduating pressure chambers.

DREDGES. Mud and silt are lifted from the bottom of rivers, harbors, and canals by means of dredging machines. The earliest of these were of the clam-shell or scoop pattern; others are provided with an endless chain to which buckets are attached; and a third style stirs and cuts up the mud and silt by a number of rotating cutters and mixes it with water so that by powerful suction the mixture is drawn up through an immense tube which discharges the semifluid mass at suitable points. The clam-shell type is largely used by reason of its great ease of management. The capacity of the bucket type is sometimes 5 cubic feet to a bucket and 20 buckets a minute. Similar machines of the clam-shell type are sometimes used for excavations on land for railways and for removal of large masses of earth for other purposes. They run upon a track as a railway car and are easily moved about.

ROLLING LIFT BRIDGE. Chicago, Ill.

EADS BRIDGE. St. Louis.

JETTIES OF THE MISSISSIPPI. In 1872 the attention of Congress was called to the obstruction to navigation on the Mississippi River by the bar and shallows at its mouth. In 1875 Captain Eads began the construction of the jetties in two parallel embankments across the bar and out into the Gulf of Mexico. Four layers of mattresses of willow branches were

STONE ARCH BRIDGE. Hartford.

sunk to the bottom and covered with a layer of loose stone and then capped with concrete blocks. The jetties contracted the channel, forced the great flow of water into such a narrow space that the onrush of water washed out the obstruction of mud and silt deposits, giving a channel 30 feet deep and 200 feet wide. The work begun in 1875 was completed in 1879 at a cost of $5,250,000. There were employed in the construction 6,000,000 cubic yards of willow mattresses, 1,000,000 cubic yards of stone, 13,000,000 superficial feet of lumber,and 8,000,000 cubic yards of concrete.

ROCK DRILLS. Several forms of rock drill have replaced the old hand method. The diamond drill is equipped with bits set with diamonds. These bits are rotated and cut through the hardest rock very rapidly. It is the invention of Hermann (1854). The compressed air drill is more frequently used. It is operated by a piston, having a drill attached directly to the piston-rod. The compressed air is admitted alternately through openings on opposite sides of the piston and controlled by valves. The Burleigh, Ingersoll, and Sergeant are the best known of this type of drill and their use dates from 1866 to 1871.

TUNNEL. An underground passage through a mountain or hill or under the bed of a river. The uncertainty of the nature of the soil or rock to be excavated adds frequently to the difficulty of construction. Faults in rock, occurrence of quicksands and springs are also obstacles. When the tunnel passes through solid rock no protection is needed; but where soft sand, quicksand, soil, or soft rock occur a lining of brickwork or of masonry is needed. The old methods of hand-drilling and blasting have been replaced by machine drills operated by compressed air, and diamond borers, which greatly reduce the cost and the time. Tunneling through soil or soft sand is now carried on by the "shield" system. Brunel first made use of the device in the Thames tunnel (1825-1843); Beach in 1869 improved the plan; and Greathead perfected it, so that it is known by his name. A cylindrical shield is driven forward by hydraulic pressure, the excavation is lined with a cast-iron shell, and silt and mud are taken out through doors in front of shield.

LARGEST TUNNELS IN THE WORLD.

Open	Name.	Location.	Length (miles).
1884	Arlberg	In the Tyrolese Alps	6.75
1909	Andes	South America	5.
1886	Big Bend	California	2.
1897	Blackwell	Under Thames, England	1.5
1898	Boston Subway	Boston, Mass.	3.1
1909	Gunnison	Southwestern Colorado	6.
1873	Hoosac	Western Massachusetts	4.75
1908	Hudson Riv.(No.)	Jersey City to New York	1.07
1909	Hudson Riv.(So.)	Jersey City to New York	1.13
1886	Mersey River	England	4.5
1871	Mont Cenis	Italy to France	8.
1888	New Croton	To New York City	33.125
1904	N. Y. Subway	In New York City	24.3
1877	Rothschonberg	Saxony	31.5
1891	St. Clair	Ontario to Michigan	2.
1881	St. Gothard	Swiss Alps	9.33
1886	Severn	England	4.5
1905	Simplon	Alps	12.5
1879	Sutro	Nevada	4.5
1909	Wasserfluh	Swiss Alps	2.
	Woodhead	England	3.

PRINCIPAL BRIDGES IN THE UNITED STATES.

Place or Name.	State.	Length (feet).	Details.
Albany	New York	400 (length of draw)	Iron structure.
Bismarck	North Dakota	1,200	Over the Missouri. Steel and iron.
Blackwell's Island	New York	7,636	Steel; cantilever; crosses East River. Cost, $12,500,000.
Brooklyn	New York	5,989	Built of steel and masonry (1870-1883). Designed by J. A. Roebling; completed by W. A. Roebling. Longest suspension bridge at that time. Cost, $9,000,000, exclusive of land.
Cabin John	District of Columbia	220 (span)	Aqueduct. Washington. Constructed, 1857-1864, at which time it was the longest stone arch in the world.
Cairo	Illinois	10,560	Over Ohio River. Steel, 50 spans; 21,000,000 pounds of steel and 32,000 cubic yards of masonry used in construction.
Chicago (1)	Illinois	.....	Most important lift bridge ever constructed. Crosses Chicago River at North Halsted Street. Towers of steel framework, with a suspended truss span.
Chicago (2)	Illinois	.....	Rush Street bridge; largest general traffic drawbridge in the world. Cost, $132,000. Completed in 1884.
Cincinnati	Ohio	1,600	Over Ohio River; longest span, 515 feet.
Cincinnati and Covington	Ohio	2,252	Steel; suspension. Built in 1867. Over the Ohio for highway and street railway traffic.
Cleveland	Ohio	3,211	Viaduct.
Dubuque	Iowa	1,758	Over the Mississippi. Iron.
Eads	St. Louis, Mo.	520 (central span)	Built across the Mississippi at St. Louis (1867-1874). Three arches of cast steel tubes. James B. Eads, engineer. Cost, $10,000,000.
Easton	Pennsylvania	.....	Steel; three-tower suspension bridge, over the Lehigh River. Built in 1901.
Hartford	Connecticut	1,192	Masonry arch bridge over the Connecticut River. Completed in 1907. Has nine semi-elliptical arches. Made of granite with macadam roadway. Cost, about $1,600,000. Piers founded on solid bottom by pneumatic caisson process.
Hastings	Minnesota	.....	Steel; spiral approach; completed in 1895.
Henderson	Kentucky	3,688	Over Ohio River; 16 spans, longest being 525 feet.
High Bridge	New York	1,460	Stone; semicircular arch; across Harlem River. Aqueduct.
Kentucky	....	1,125	Iron railroad bridge on line of Cincinnati Southern Railway. Completed in 1877. Cost, $404,230.
Kinzua	Pennsylvania	2,050	Trestle viaduct on Erie Railroad in McKean County. Built in 1882 of wrought iron. Rebuilt of steel in 1900.
Louisville	Kentucky	5,310	Over the Ohio. Completed 1886.
Memphis	Tennessee	720 (longest span)	Steel; cantilever.
Minneapolis	Minnesota	.....	Over the Mississippi River; steel; built in 1888.
Niagara (1)	New York	1,260 (span)	Clifton suspension, for carriage and foot passengers. First built, 1867-1869; rebuilt of iron and steel, 1889; removed, 1898.
Niagara (2)	New York	910	Niagara Falls cantilever bridge. Built in 1883. Cost, $900,000. First true metal cantilever bridge. Middle truss inserted in 1900.
Niagara (3)	New York	821 (span)	Begun in 1855. Designed by Roebling for Grand Trunk Railway. Wooden trusses replaced in 1881 by steel; and in 1887 the masonry towers by steel towers. Removed in 1897.
Niagara (4)	New York	550 (span)	Steel arch railway bridge. Two railways on upper deck; highway on lower deck. Built in 1897.

Principal Bridges in the United States—*Continued.*

Place or Name.	State.	Length (feet).	Details.
Niagara (5)	New York	840 (span)	Highway and foot bridge. Longest single steel arch span in the world. Built in 1898, replacing the Niagara and Clifton suspension.
Omaha	Nebraska	2,800	Over the Missouri.
Pecos River	Texas	2,180	Built in 1893, to carry Southern Pacific Railroad over the Pecos. Trestle viaduct.
Pittsburg	Pennsylvania	1,504	Over Monongahela River; longest span, 360 feet.
Poughkeepsie	New York	6,767	Iron; cantilever. Crosses the Hudson. Opened in 1889.
Queensborough	New York	3,724 (length of cantilever)	Over East River; largest cantilever bridge in the world, bearing traffic; cost over $17,000,000; has 4 elevated railroad tracks, 2 promenades, 4 trolley tracks. Opened, 1909.
Rockville	Pennsylvania	.....	At Harrisburg. Stone.
Schuylkill	Pennsylvania	408 (span)	Suspension. At Philadelphia. Foot bridge having wire cables. Built in 1816.
St. Charles	Missouri	6,536	Iron.
Susquehanna	Pennsylvania	3,500	Stone; semicircular arch.
Trenton	New Jersey	960	Over Delaware River. Constructed of timber; frame truss.
Washington	New York	2,375	Steel highway, across Harlem River. Built, 1886-1889. Cost, $2,850,000. Two metal and seven masonry arches; hinges at abutments.
Williamsburg	New York	7,200 (length between terminals)	Steel suspension, over East River between Brooklyn and New York. Towers of masonry, framework of steel. Built 1897-1903. Length of main span, 1,600 feet. Cost, $14,000,000.

PRINCIPAL FOREIGN BRIDGES.

Place or Name.	Country.	Length (feet).	Details.
Adabazar	Asia Minor	1,400	Built in 561 by Justinian. Eight arches of 75 feet span.
Alcantara	Spain	670 Spanish feet	Granite. Over the Tagus. Built about 100 A. D. in honor of Trajan. Has six arches.
Alexander III	France	352.6 (longest span)	Across Seine at Paris. Steel arch bridge, completed in 1899.
Allahabad	India	.....	East Indian Railway bridge.
Avignon	France	3,000	Over the Rhone. Eighteen stone arches. Built in 1188 by Bénézet.
Babylon	Turkey in Asia	.....	Over the Euphrates. Believed to have been built by Nitocris about 600 B. C. Built on stone piers with removable timber superstructure.
Berne	Switzerland	376¼ (main span)	Over the Aar.
Blackfriars	England	.....	Across the Thames at London. Nine elliptical stone arches. Built in 1760; removed in 1864, and later rebuilt.
Blois	France	.....	Over the Loire. Begun in 1720. Eleven elliptical arches.
Bonn	Germany	840	Highway across the Rhine. Steel arch. Completed in 1898. Designed by Krohn & Schill. Has one span 614 feet long.
Boyne	Ireland	550	Lattice; railway bridge. Cost, $680,400.
Bridge of Sighs	Italy	.....	A picturesque bridge consisting of an elliptical arch. At Venice. Built in 1597 by Antonio Contini.
Britannia	Wales	1,511	Across Menai Strait at Bangor. Built, 1845-1850. Tubular suspension. Cost, $2,925,063.
Burton	England	1,534	Over the Trent. Thirty-four arches.
Carpentras Aqueduct	France	1,687	Semicircular arch; stone.
Chaumont Viaduct	France	1,968	Semicircular arch.
Chester	England	200 (span)	Grosvenor bridge; built, 1832-1833.
Clifton	England	702 (span)	Near Bristol; crosses the Avon; opened in 1864.
Coalbrookdale	England	102 (span)	Over the Severn. Cast-iron arch. Built, 1776-1779.
Coblenz	Germany	about 950	Iron arch. Completed in 1864. Three spans.
Congleton Viaduct	England	2,870	Arch; segment; stone.
Conway	Wales	400 (span)	Built, 1846-1848. First tubular bridge actually completed.
Croyland	England	.....	Of triangular shape, at the confluence of three rivers. Has three pointed stone arches. Original structure erected about 943; present bridge built in fourteenth century.
Crumlin Viaduct	England	1,800	Girder iron railway bridge over the Ebbw. Built, 1853-1857. Has ten spans. Cost, $189,540.
Danube	Austria-Hungary	1,262	Near Budapest. Completed in 1845. Suspension. Has a central span of 666 feet.
Dee Viaduct	Scotland	1,388	Stone; semicircular arch.
Dizful	Persia	.....	Oldest example of bridge building. Wide, pointed arches.
Douro	Portugal	1,150	Arched iron structure near Oporto. Built, 1875-1877. The longest span is 520 feet in length.
Düsseldorf	Germany	594½ (longest span)	Steel; built, 1896-1898.
Ellesmere Aqueduct	Wales	710	Carries Ellesmere canal over Ceiriog River; completed, 1801.
Elsterthal Viaduct	Germany	550 (lower story) 918 (upper story)	Two-story masonry. Lower story has two double piers, two arches, two walls; upper story has two double piers and six arches.
Forth	Scotland	8,098	Steel cantilever railway bridge over Firth of Forth. Begun in 1883; opened in 1890. Cost, $15,795,000. Designed by Fowler & Baker.
Franzdorf Viaduct	Germany	1,916	Semicircular arch; stone.
Freiburg	Switzerland	870 (span)	Built, 1833-1834, by Chaley. First suspension bridge in which iron wires were used to support the structure.
Galicia	Austria-Hungary	213¼ (length of arch)	Cost only $40,000; sandstone.
Ganges Aqueduct	Hindustan	920	Carries Ganges canal over Solani River.
Garabit	France	1,849	Designed by M. Eiffel; completed in 1884. Wrought iron.
Godavery Irrigation Aqueduct	India	2,356	Arch, segment; stone.

Principal Foreign Bridges—*Continued.*

Place or Name.	Country.	Length (feet).	Details.
Goeltzschthal Viaduct.	Holland	1,900	Stone; elliptical arch.
Grünenthal	Germany	513 (longest span)	Wrought iron; built in 1892; highway and railway bridge.
Hawkesbury	New South Wales	.....	Over the Hawkesbury River; opened for traffic in 1889.
Indre Viaduct	France	2,463	Stone; semicircular arch.
Julius Cæsar	Across the Rhine	.....	Built 55 B. C. Wooden trestle bridge.
Kuilenburg	Holland	492 (span)	Across the Leck; completed 1868; Van Diesen, architect.
Levensau	Germany	536 (longest span)	Highway and railway bridge; built, 1894, of malleable iron.
Lisbon Aqueduct	Portugal	3,805	Ogival; stone.
Loa Viaduct	Bolivia	.....	Lattice girder. Constructed in 1889.
London Bridge	England	.....	Across Thames. Date of first bridge given as 978, but uncertain. Others were built later—1014, 1176, 1831, and 1842.
Luxemburg	Germany	277 (span)	Completed in 1903. Cost, $275,000. Largest single arch stone bridge in the world.
Maintenon Aqueduct	France	16,367	Semicircular arch; stone.
Moerdyk Bridge	Holland	4,592	Across the Hollandsch Diep; completed in 1880.
Müngsten	Germany	557 (longest span)	Steel railway bridge; built, 1896-1897.
New Brunswick	Canada	813	Built in 1895. Called St. John River cantilever bridge.
Newcastle	England	281	Newcastle swing bridge; over the Tyne; completed in 1876.
Nogent sur Marne Viaduct	France	2,722	Stone; semicircular arch.
Pavia	Italy	620	Ogival; stone.
Pimlico, London	England	.....	Over the Thames; completed in 1860.
Pons Sublicius	Italy	.....	First bridge at Rome. Timber. Built by Ancus Martius in 621 B. C.
Ponte della Trinità	Italy	.....	Over the Arno at Florence. Three-arch stone. Completed in 1566.
Ponte di Nona	Italy	285	Near Gabii. Viaduct of seven arches. Built, 124-121 B. C.
Quebec	Canada	.....	Across the St. Lawrence. Begun in 1900. Main cantilever span, 1,800 feet.
Rialto	Italy	98½ (span)	Across Grand Canal at Venice. Masonry arch bridge. Built in 1588 by Antonio del Ponte.
Roquefavour Aqueduct	France	1,289	Cost, $750,000; completed in 1847.
Saltash lenticular girder	England	2,240	Wrought iron; built by I. K. Brunel; across the Tamar.
Southwark, London	England	240 (longest span)	Highway bridge of cast iron; built in 1819.
Sukkur	India	790 (span)	Sukkur cantilever bridge; crosses Rohri branch of the Indus at Sukkur.
Tay	Scotland	10,612	Over the Tay at Dundee; has continuous supports; cost, $2,000,000.
Tower, London	England	740	Opened in 1894. Steel and masonry drawbridge across the Thames. Cost, $48,610,000.
Trajan	Across the Danube	3,900	Built, 102-104 A. D., by Apollodorus. Stone foundation, wooden superstructure.
Verrugas Viaduct	Andes Mts., Peru	575	Completed in 1873. Highest bridge in the world. Constructed of iron.
Viaur Viaduct	France	721 (span)	Second longest steel arch span in the world; built, 1898-1899.
Victoria	Canada	9,144	Across the St. Lawrence at Montreal. Begun in 1854; opened in 1860. Tubular railway bridge. Cost, $8,262,000. Twenty-five spans. Replaced, 1898-1899, by a pin-connected truss bridge of 25 spans; and in 1906 by a new steel bridge.
Victoria Falls	Africa	650	Completed in 1904. Steel arch railway bridge.
Westminster, London	England	870	Built, 1738-1750. Has 15 arches.
Nerxes	Asia Minor	2,421	Pontoon. Built across the Hellespont in 480 B. C.

THE TELEGRAPH IN THE UNITED STATES.

Year.	Miles of line.	Miles of wire.	Number of offices.	Number of messages sent.	Year.	Miles of line.	Miles of wire.	Number of offices.	Number of messages sent.
1867	46,270	85,291	2,565	5,879,282	1888	178,477	657,059	17,931	56,447,407
1868	50,183	97,594	3,219	6,404,595	1889	187,308	698,713	19,278	60.186,687
1869	52,099	104,584	3,607	7,934,933	1890	195,059	746,748	20,432	63,258,762
1870	54,109	112,191	3,972	9,157,646	1891	200,720	791,956	21,285	67,420.111
1871	56,032	121,151	4,606	10,646,077	1892	202,939	827,751	22.112	71,822,589
1872	62,033	137,190	5,237	12,444,499	1893	206,137	871,008	22,683	76,543,653
1873	65,757	154,472	5,740	14,456,832	1894	208,018	899,487	22,925	69,897,746
1874	71,585	175,735	6,188	16,329,256	1895	209,191	919,995	23,427	70,701,207
1875	72,833	179,496	6,565	17,153,710	1896	210,083	991,942	30,799	72,221,896
1876	73,532	183,832	7,072	18,729,567	1897	211,712	1,019,440	31,644	71,779,748
1877	76,955	194,323	7,500	21,158,941	1898	214,394	1,066,254	33,308	77,580,767
1878	81,002	206,202	8,014	23,918,894	1899	215,416	1,114,006	34,948	77,356,508
1879	82,987	211,566	8,534	25,070,106	1900	218,747	1,159,618	36,000	79,696,227
1880	85,645	233,534	9,077	29,215,509	1901	219,938	1,216,188	38,115	83,555,122
1881	110,340	327,171	10,737	32,500,000	1902	222,591	1,296,106	39,815	89,461,813
1882	131,060	374,368	12,068	38,842,247	1903	223,999	1,365,457	43,097	91,391,443
1883	144,294	432,726	12,917	41,181,177	1904	227,143	1,457,665	44,529	90,429,501
1884	145,037	450,571	13,761	42,076,226	1905	228,160	1,490,744	46,880	91,403,282
1885	150,311	485,870	14,444	43,525,273	1906	231,096	1,582,962	49,637	96,987,146
1886	156,223	526,567	15,553	46,345,729	1907	233,735	1,649,395	50,267	98,480,097
1887	162,467	563,053	16,226	51,594,115					

RAILROAD TRAFFIC OF THE WORLD.

COUNTRIES.	Miles of railroad.	Cost of roads and equipments.	Passengers carried.	Tons of freight carried.	Receipts.	Expenditures.
Europe	175,000	$20,100,000,000	2,700,000,000	1,145,000,000	$1,800,000,000	$1,040,000,000
America	250,000	15,800,000,000	700,000,000	1,250,000,000	1,800,000,000	1,300,000,000
Africa	12,500	760,000,000	36,000,000	11,000,000	65,000,000	34,000,000
Asia	37,500	1,500,000,000	248,000,000	42,000,000	120,000,000	60,500,000
Australia	15,000	760,000,000	62,000,000	13,500,000	55,000,000	33,000,000
Total	490,000	$38,920,000,000	3,746,000,000	2,461,500,000	$3,840,000,000	$2,467,500,000

These estimates are for 1900. Cost of roads and equipments in 1906 was estimated at $43,000,000,000 or an average of $76,000 per mile.

RAILROAD MILEAGE OF THE WORLD. Following statistics are of date January 1, 1906: Total mileage, 562,780, made up as follows: 285,957 miles in America, 192,521 miles in Europe, 50,593 miles in Asia, 16,538 miles in Africa, and 17,441 miles in Australasia. Of the mileage of European railroads, Germany stands first (34,669), followed in their order by Russia (32,743), France (28,430), Austria-Hungary (24,261), the United Kingdom (22,847), Italy (10,070, Spain (9,190), Sweden (7,677), and Norway (2,931).

STREET AND ELEVATED RAILWAYS, 1906.

[From the Street Railway Journal.]

STATE.	Number of roads.	Electric railways. Track mileage.	All other railways. Track mileage.	Number of cars.	Capital stock. Dollars.	Funded debt. Dollars.
Alabama	10	263	11	495	11,330,900	13,336,000
Arizona	4	32	6	29	600,000	100,000
Arkansas	9	120	.....	220	5,330,400	4,702,500
California	50	1,829	203	3,444	108,513,500	89,819,000
Colorado	13	350	73	706	19,369,100	20,737,000
Connecticut	20	774	.....	1,975	29,107,500	48,251,593
Delaware	6	111	.....	210	4,924,040	6,474,050
District of Columbia	7	326	.....	1,403	33,205,000	27,208,439
Florida	12	168	13	191	4,271,000	2,304,000
Georgia	13	364	7	576	20,904,894	18,903,500
Idaho	4	166	21	117	598,400	670,000
Illinois	62	2,806	24	7,913	181,960,200	126,095,000
Indiana	52	2,008	2	2,045	70,107,590	59,100,250
Iowa	29	752	50	1,098	31,700,000	15,951,000
Kansas	18	268	13	260	7,200,000	5,915,000
Kentucky	12	337	2	881	20,128,050	13,142,000
Louisiana	9	243	4	721	32,805,000	28,508,000
Maine	19	474	3	779	8,612,981	9,051,500
Maryland	12	538	10	2,109	19,991,400	59,270,000
Massachusetts	78	2,810	8	10,270	107,638,100	61,374,000
Michigan	41	1,682	.....	2,336	43,191,000	46,735,500
Minnesota	7	538	.....	1,215	29,955,000	21,071,000
Mississippi	9	79	.....	129	3,486,400	3,119,000
Missouri	23	1,129	3	2,886	85,462,000	97,632,000
Montana	6	75	.....	133	2,725,613	1,645,000
Nebraska	9	271	11	496	10,832,500	8,425,000
Nevada	1	5	.....	5	100,000	300,000
New Hampshire	18	296	.....	436	7,207,006	6,637,000
New Jersey	37	1,198	15	2,426	105,348,880	94,714,088
New Mexico	2	14	.....	17	350,000	350,000
New York	142	3,385	163	16,762	384,114,356	355,906,083
North Carolina	11	107	8	193	2,593 500	3,138,000
North Dakota	2	16	.....	40	350,000	300,000
Ohio	103	4,495	8	5,751	208,550,875	120,093,000
Oklahoma	9	209	.....	117	3,000,000	1,800,000
Oregon	11	299	4	513	21,830,000	20,156,000
Pennsylvania	145	3,626	10	9,176	237,734,120	175,694,797
Rhode Island	13	458	3	1,123	21,813,000	20,894,700
South Carolina	8	133	5	168	3,893,000	5,493,000
South Dakota	1	4	.....	5	50,000	.....
Tennessee	11	337	.....	735	18,085,500	19,681,500
Texas	24	532	10	772	22,507,500	15,892,000
Utah	4	160	8	203	7,712,500	8,840,000
Vermont	10	122	.....	145	3,721,510	3,293,000
Virginia	25	497	.....	823	32,407,850	33,078,500
Washington	17	715	21	1,349	28,674,310	16,473,000
West Virginia	15	310	.....	395	10,775,200	8,232,000
Wisconsin	21	776	.....	941	25,176,200	24,860,000
Total, 1906	1,164	36,212	719	84,732	2,039,948,875	1,725,369,000
Total, 1896	916	12,133	2,337	48,182	784,813,781	590,596,391
1897	953	13,765	1,953	51,532	846,131,691	633,079,178
1898	954	15,942	1,607	56,772	904,169,236	698,830,423
1899	871	17,665	1,277	58,569	991,012,762	782,963,471
1900	905	19,314	1,128	62,918	1,066,196,460	866,868,673
1901	1,062	22,217	967	65,900	1,360,712,238	1,055,451,817
1902	1,110	25,592	700	70,006	1,522,068,760	1,272,269,491
1903	1,187	27,754	702	74,298	1,692,788,298	1,389,464,349
1904	993	29,548	639	75,804	1,761,571,812	1,455,520,159
1905	1,081	32,517	633	79,751	1,844,565,136	1,524,371,926
1906	1,164	36,212	719	84,732	2,039,948,875	1,725,369,000

Mileage of Railroads in Operation in United States by States.

States.	1860.	1870.	1880.	1890.	1900.	1904.	1905.	1906.
Alabama	743	1,157	1,843	3,422.20	4,197.22	4,590.89	4,758.57	4,805.58
Arizona	.....	.....	349	1,094.81	1,515.94	1,786.81	1,830.97	1,881.66
Arkansas	38	256	859	2,203.44	3,108.56	3,946.54	4,165.72	4,383.21
California	23	925	2,195	4,349.73	5,588.56	6,203.37	6,271.60	6,385.46
Colorado	.....	157	1,570	4,291.11	4,649.68	4,989.85	5,093.20	5,238.67
Connecticut	601	742	923	1,006.64	1,025.40	1,020.12	1,020.12	1,020.12
Delaware	127	197	275	314.95	348.62	334.86	333.60	333.61
District of Columbia	(a)386	(a)671	(a)1,040	20.66	24.88	24.70	24.70	24.70
Florida	402	446	518	2,489.52	3,255.71	3,585.83	3,635.38	3,788.18
Georgia	1,420	1,845	2,459	4,600.80	5,729.91	6,298.97	6,516.61	6,704.45
Idaho	.....	.....	206	946.11	1,319.41	1,425.42	1,493.20	1,680.95
Illinois	2,970	4,823	7,851	10,165.67	11,048.40	11,742.10	11,959.09	12,085.83
Indiana	2,163	3,177	4,373	6,109.19	6,573.19	6,863.03	7,046.90	7,131.23
Iowa	655	2,683	5,400	8,416.13	9,370.35	9,835.73	9,853.10	9,843.91
Kansas	.....	1,501	3,400	8,892.11	8,714.06	8,841.09	8,874.58	8,919.12
Kentucky	534	1,017	1,530	2,942.38	3,093.75	3,261.56	3,355.07	3,423.26
Louisiana	335	450	652	1,739.85	2,801.27	3,592.68	3,764.17	4,139.96
Maine	472	786	1,005	1,377.47	1,916.94	2,029.89	2,091.12	2,136.38
Maryland	(a)386	(a)671	(a)1,040	1,270.04	1,339.34	1,364.45	1,406.81	1,384.83
Massachusetts	1,264	1,480	1,915	2,096.69	2,111.42	2,110.81	2,104.87	2,107.77
Michigan	779	1,638	3,938	7,108.48	8,092.46	8,467.76	8,521.46	8,595.93
Minnesota	.....	1,092	3,151	5,545.35	6,996.89	7,841.62	7,947.10	8,102.84
Mississippi	862	990	1,127	2,470.85	2,934.27	3,367.23	3,541.04	3,705.71
Missouri	817	2,000	3,965	6,142.02	6,887.44	7,797.18	7,859.57	7,869.39
Montana	.....	.....	106	2,195.58	3,029.22	3,327.78	3,328.42	3,310.42
Nebraska	.....	705	1,953	5,407.47	5,695.26	5,777.59	5,831.35	5,961.43
Nevada	.....	593	739	923.18	920.37	1,186.82	1,282.22	1,546.14
New Hampshire	661	736	1,015	1,142.25	1,193.15	1,191.77	1,191.77	1,167.14
New Jersey	560	1,125	1,684	2,109.06	2,242.93	2,266.64	2,269.61	2,274.36
New Mexico	.....	.....	758	1,388.77	1,770.77	2,441.93	2,596.64	2,778.74
New York	2,682	3,928	5,957	7,684.41	8,095.00	8,167.21	8,212.12	8,315.22
North Carolina	937	1,178	1,486	3,128.17	3,737.53	3,913.86	4,015.58	4,096.60
North Dakota	.....	(b)65	(b)1,225	2,116.49	2,810.62	3,211.81	3,734.69	3,875.10
Ohio	2,946	3,538	5,792	7,980.49	8,885.46	9,163.97	9,243.26	9,214.23
Oklahoma	.....	.....	289	1,260.65	2,407.47	5,221.33	5,522.66	5,638.70
Oregon	.....	159	509	1,439.97	1,670.90	1,750.43	1,881.67	1,931.02
Pennsylvania	2,598	4,656	6,191	8,638.99	10,334.08	10,991.97	11,161.45	11,226.51
Rhode Island	108	136	210	217.43	209.29	209.84	209.84	209.84
South Carolina	973	1,139	1,427	2,289.15	2,919.31	3,146.24	3,184.19	3,239.39
South Dakota	.....	(b)65	(b)1,225	2,610.41	2,961.86	3,068.58	3,182.04	3,490.57
Tennessee	1,253	1,492	1,843	2,767.38	3,184.91	3,484.92	3,606.88	3,660.85
Texas	307	711	3,244	8,709.85	9,991.62	11,614.13	11,949.02	12,609.13
Utah	.....	257	842	1,265.49	1,581.92	1,742.49	1,807.84	1,918.12
Vermont	554	614	914	991.42	1,045 28	1,056.96	1,063.20	1,088.20
Virginia	1,379	1,486	1,893	3,359.65	3,789.58	3,823.67	3,862.11	3,970.83
Washington	.....	.....	293	2,012.05	2,888.44	3,232.48	3,301.05	3,399.69
West Virginia	352	387	691	1,433 30	2,473.34	2,820.82	2,966.05	3,097.58
Wisconsin	905	1,525	3,155	5,612.62	6,538.87	7,014.78	7,188.18	7,400.08
Wyoming	.....	459	512	1,002.93	1,241.38	1,243.63	1,280.63	1,512.64
U. S. Grand Total	30,626	52,922	93,267	166,703.36	194,262.23	212,394.14	217,341.02	222,635.18

(a) Includes Maryland and District of Columbia. (b) Includes North and South Dakota.

The twentieth century will be remarkable for an increased application of the principles of chemistry to the industrial and the useful arts; this being known as "chemical technology." To this branch of science is due the artificial production, and therefore the increased supply, of many organic compounds hitherto limited to natural sources. From the four chemical elements, carbon, hydrogen, nitrogen, and oxygen, there is now prepared unlimited series of flavoring extracts, dyes, medicines, perfumes, explosives, disinfectants, etc., and so universal is the recognition of expert chemical knowledge in commercial manufacturing circles that few large enterprises are conducted without trained chemical specialists. Other branches of science are dealing with widespread questions of economy in manufacture; of utilization of waste; of the production of the maximum from the minimum raw material; and the conservation and preservation of all natural resources. There is scarcely an industry that is not progressing by leaps and bounds; improving in process and in product.

AGRICULTURE. The science and art of producing all plant and animal life that is useful to man. It dates from the earliest periods, when man first evinced a preference for certain plant or flesh food. He cared for the plants, and confined the animals. Pointed and forked sticks were used to till the soil, the union of the two being the primitive plow; Egyptian records go back to at least 3000 B.C. According to the Bible we learn the Israelites remained in one spot until they exhausted the soil, destroyed the "tilth" or depth of soil to which roots penetrate, rendering it infertile, and then the camp moved to another spot. The Babylonians converted their once fertile land into a desert along similar lines, and in all probability only the annual overflowing of the Nile has preserved Egypt. Then the tide turned. Agriculture became a more honorable occupation than trading, or the mechanical arts; breeding animals by selection was introduced; irrigation took the place of rainfall in arid districts, sometimes by ditches, sometimes by mere handsweeps, such as are in use on the Nile to-day, but all fulfilling their limited purpose. Granaries were built for storage, the grain was dried before being deposited; bees were kept to produce honey; and little by little the Saracen, and the religious houses, laid the seed of the present wonderful growth of scientific agriculture. The Saracens introduced rice, cotton, sugar, and vines, to Spain; the religious houses were given large tracts of valueless land, and made them blossom as the rose; so that by the Middle Ages western Europe was as famed for its agriculture as for its commerce and manufactures. Green crops were plowed in; Belgium was famed for dairy work; the Flemings were regarded as

the best farmers; northern Italy was in the van of progress, but in England agriculture stood still until 1389. Then when the English armies came back from the continent of Europe they brought many ideas; harvests were doubled, meats became a common diet, serfdom disappeared, and laws against extravagance in diet were passed. Gardening, not only of flowers but of fruit, claimed a place in agriculture, and again Flanders was the tutor of Europe. The discovery of America taught little from the effectual and careful tillage of the Peruvians, but it introduced many new seeds, plants, fruits, and grasses, such as timothy and orchard grass. In 1760 Lord Townsend introduced the Norfolk system of rotatory crops, wheat, turnips,

PRIMITIVE IRRIGATION.

barley, clover, or grass. Each farm had to carry cattle and sheep according to its acreage, and the farmer was not permitted to sell his manure; neither could he use more than a specified percentage of artificial fertilizer. Under this system farms produced fivefold, and many fortunes were made. In breeding, Bakewell made a similar revolution (1750), producing a sheep for the market in two years instead of three to four years. Jethro Tull introduced drilling seed in rows, with cultivation in between (1731), inventing a drill and a horse-hoe. In the nineteenth century science was applied to agriculture; transportation methods were revolutionized; vast areas of land were opened in the United States, Canada, South America, Australia, New Zealand, and Africa, for settlement and farming; labor saving machinery appeared; government agencies spread information, etc.; and the associations of farmers disseminated knowledge and experience. Scientific fertilizing reaches wide limits, even to those of grinding the rocks and giving them back to the soil, where analysis shows such a course is warranted. Science indicates the fertilizer lacking in the soil, and science gives what is demanded. The marvelous success of scientific effort, largely under government patronage, is shown in dairying, and in sugar beet growing. To-day successful farming is done by system, whether it be grain, fruit, or stock. Machinery has given the reapers, threshers, steam plows, etc., and with the opening field of discovery in the germicidal processes of nature, comes what appears like an agricultural millennium, if the culmination equal the prospect. Along this path comes the tremendously important "intensive culture" applied to vegetable and fruit farming, by which a given surface of land, under scientific handling, more labor (well directed), and the use of more capital, may be made to produce double and treble what has been regarded as the normal crop. In this, possibly, lies the secret of supplying large cities at reasonable cost.

ANILIN. A coal tar product based upon amidobenzol discovered by Unverdorben (1826), who made it by the distillation of indigo, and named it "crystallin." Perkins, an English chemist, patented (1856) a process of making a mauve or lilac dye from this substance, and the commercial importance of these products began. The anilin of commerce is obtained from benzol, a coal tar product. Benzol and nitric acid yield nitrobenzol; and nitrobenzol when acted upon by nascent hydrogen gives anilin, which is colorless when pure; acted upon by arsenic acid, potassium bichromate, chlorid of tin, etc., the beautiful anilin colors are formed. The color industry was first introduced in England and France, but has reached its modern sensational development in Germany, which country's capitalists also control large plants in Russia, France, and other countries. A peculiar feature of the industry is the artificial drugs produced, such as antipyrin, antifebrin, acetanilid, etc.

ANTISEPTIC SURGERY. A method of combating disease germs in surgery, introduced by Sir Joseph Lister, an English surgeon (1865). Carbolic acid, mercury bichlorid, and formalin are the most effective agents employed. "Listerine" is named after Dr. Lister.

ARTIFICIAL ICE. The can system and the plate or wall system are the chief methods used in manufacturing artificial ice. In the former cans or molds filled with the water to be frozen are placed in a box or tank, and brine (or air, in a cold-air machine) circulated around them. In the latter the water to be frozen is placed in a tank through whose hollow or circular walls a continuous circulation of brine is maintained, the ice being formed on both sides of the walls, and melted off for removal by withdrawing the cold brine and circulating in its stead warm or tepid brine. In the stationary cell system, similar to the foregoing, cross walls are also provided, the ice being formed into rectangular blocks. Clear ice can most successfully be made by the de-aëration of the water to be frozen and its agitation during the freezing process.

AUTOMOBILE. A self-propelling vehicle used on highways in place of the horse-drawn carriage. First was made by Cugnot, a French surgeon (1769); fashioned from a gun carriage and a coffee boiler. Murdock, an assistant of James Watt, ran a road wagon by high-pressure, non-condensing steam (1784); Symington and Trevithick improved, until Evans, the American, drove his mud scow overland to the Delaware, taking it thence by water to the Philadelphia docks (1803). From 1820 to 1833 many steam coaches were made by W. James, J. Anderson, Walter Hancock, and Goldsworthy Gurney, all using steam, which gave way to the period of modern development about 1894. *Electric* cars have a storage battery to supply the current, a motor to convert the current into power, and a controller to regulate speed. The objection, to date, is the weight of the outfit, and the extremely small distance covered without recharging. *Gasoline* cars are the more general type, using gasoline (or petroleum spirit). Vaporized oil exploded in the cylinder gives driving power to the piston. There is a carburetor for vaporizing, and for feeding the oil to the cylinder, and a cooler which circulates water round the cylinder. Cold air is also used. The power is transmitted to a crank shaft and led off by a chain drive, or gearing, to the driving shaft, motion being communicated to the wheels by clutches and gearing. It is possible to inject the fluid directly into the cylinder without passing through the carburetor, but, being imperfectly mixed with air, it gives a slower and less complete combustion; the carburetor is the vessel in which the gasoline is vaporized and mixed with air. Engines using gasoline differ slightly from gas engines, but those using kerosene frequently vary. Great as the improvements in the gasoline engine have been, the steadily rising price of gasoline (from 2 cents a gallon by the barrel in 1895, to 13 cents to-day) indicates the next important advance will be probably to make the use of kerosene as practical and desirable as gasoline; this idea is indorsed by the fact that 3 per cent. gasoline and 60 per cent. kerosene is the production per gallon of crude oil. Kerosene has 17 per cent. more heat units than gasoline, is less variable in quality, is safer to handle, and the supply exceeds the demand by millions of barrels annually. *Steam* cars are used for passengers and for freight service. The standard American boiler is a cylindrical upright shell with vertical fire tubes of copper or steel. Gasoline or mineral oil is used for fuel; water is supplied by automatic feed pumps; an automatic device cuts off the fuel supply when a certain pressure is reached. The steam is superheated, and used in double cylinder or four cylinder engines driving to the differentials on the driving axle; the trucking wagons are very heavy, up to five tons' capacity, fitted with fire tube boilers, using either coke or coal as fuel; the horizontal compound engine drives the car through gearing arranged to give two speeds. The future changes in automobiles will be mainly towards a reduction of price, without depreciating quality and class of work. The new battery of Mr. Edison, while valuable to surface car transportation, will scarcely benefit automobiles in its present form. The explosive engine, however, is open to many radical and economical innovations.

BELLS. Their connection with Oriental religion dates from antiquity. The most common, early form was four sided, of thin hammered, iron plates, riveted, and brazed or bronzed. The largest casting is the great bell of Moscow, 21 feet high, 21 feet in diameter, weighing 432,000 pounds, which was made in 1733. Bell metal is an admixture of copper and tin, with lead, zinc, steel, and of silver or gold for decorative purposes. The old idea that silver improved tone is absolutely erroneous. Bell making is "found-

ing." A brick core is covered with clay, and, by a "template," is formed to the exact shape of the interior of the bell. On this is laid a model of earth, etc., of the bell. Outside this is built a third and heavy shell, which is raised, the model taken out, the shell lowered, the space between it and the inner core being the exact shape of the bell. The molten bell metal is run in and allowed to cool. The smaller hanging bells used in dwelling houses, offices, etc., have given way to electric gongs. *Tubular bells*, 4 to 14 feet, hung on a frame and struck by hammers, have superseded carillon bells and chimes. The *electric gong* has a clapper to which is affixed a piece of soft iron. An electromagnet is attached to the main wire so that the current attracts the piece of soft iron to the magnet, forcing the clapper to strike the bell or gong. The main wire is connected with some form of galvanic battery. Pressing a button completes the circuit, and rings the bell.

BICYCLE. A light man-power motor vehicle of two wheels, one behind the other, connected by a frame of hollow metallic tubes and posts; fitted with a saddle. It is a development of the "Hobby Horse" of the preceding century, upon which a man sat astride and pushed at the road with his feet. Little by little the front wheel was equipped with pedals for the feet to rotate it; the wheels changed to light buggy wheels, tired with metal; wire spokes appeared; the height of the front wheel increased and the rear wheel decreased, the object being to cover greater space at each revolution of foot and wheel. Then came the sprocket gear and chain, one revolution of the foot producing several of the wheel; then the bevel gear; the high wheel vanishing, retaining the wire spokes, etc., but coming back to the original "safety" type of wheels manifested in the old "Hobby Horse," so far as size and arrangement is concerned. Those involved in its development were Baron von Draise and Dennis Johnson (1816); McMillan (1840); Galvin Dalzell; Michaux (1857); Pierre Lallement (1863); Edward Gilman (1866); and the "bicycle" of James K. Starley of England (1873). The latest innovation is the *motor* bicycle, built a trifle lower than ordinary, carrying a supply of gasoline, and having a motor placed between the wheels. A lamp heats a platinum tube to redness, producing an explosion of mixed gasoline and air, which drives a piston. A threaded nut in the handle bar controls the speed.

BOOKBINDING. The printed pages are gathered in order; the "end papers" and the "fly papers" added, and the sheets or pages sewed together. If the book is illustrated the plates are arranged prior to the sewing. Certain sections are secured by sewing to cords, tapes, or strips of vellum, the projecting ends of which are used to secure the mass of pages to the cover. After the sewing, and the arrangement of cords, etc., the head bands (which give strength to the back) are affixed, and the actual covering of the book is done by gluing or pasting the material upon the boards at the side and back. The final operation is decoration by "tooling" or "stamping," In casing, two stiff sides and a flexible back are made; the sheets are sewed and glued into the case by canvas glued fast to the back, with projecting strips for attaching to the covers. Decorations consist of ornamental textile material, or impressed patterns without color, or in one or more colors, in infinite variety.

BREWING. A process of manufacturing beer, ale, and other fermented liquors that are not distilled. It involves malting and brewing. The barley is moistened, swollen, and sprouted; then heated in a kiln to a dry, brittle condition termed "malt"; the technical terms being steeping, couching, flooring, and kiln-drying. The brewing commences with grinding or bruising the malt into "grist," to which is added water, in the malt tubs under slow heat. The infusion or "wort" is boiled with hops in the proportion of two to four bushels of malt, and two to five pounds of hops, to the barrel of beer. The cooled wort passes into vats, one part of liquid yeast to the one hundred parts of wort is added, and it is fermented six to eight days according to temperature. Carbonic gas forms freely. The liquor is run into "cleansing vats" to cool, where a second fermentation throws off the yeast remnants as scum. The liquor is drawn into casks and "matured," under varying conditions of time and temperature. *Ale* is made from pale malt and contains more alcohol through checking the fermentation. *Pale Ale* is produced from sun-dried malt at a temperature of less than 70 degrees. *Porter* is a dark, slightly bitter liquor, made from pale, dark, and black malt, mixed. *Black Beer* is a dense brewing used as medicine. *Swanky* is an obsolete, very light, almost non-intoxicating ale once widely used in England. *Lager* (stored) beer is kept cool and matured slowly for months. *Bock* is a stronger lager, made in the spring. *Mum* is an obsolete beer made from wheat, oats, malt, and, sometimes, added bran meal. Pure water is an important factor, and should contain much common salt, carbonate of lime, and sulphate of lime; organic traces being deleterious. Beer contains water, alcohol, dextrin, glycerine, glucose, several acids, oil, resin, albumen, and mineral salts.

BRICKMAKING. The clay obtained is cleared of vegetable soil, is tempered or mixed perfectly by hand, in the "pug mill," or the ring pit. Pressed bricks are tempered by hand; the clay is spaded into a pile with water thrown over it, and the next day it is worked over with a spade, cut through with a "slasher," and spaded again. The pug mill is an arrangement of knives to slice the clay, and a "pusher" to drive it again and again through certain orifices, by steam or horse power. The ring pit has a wheel moving from the outer circumference to the center, thoroughly "working" the clay. When well worked, the clay is molded, dried, and burned in a kiln for five days. Hot air and combinations or air and gas are also used. There are two brick machines,—one forcing the clay into molds; and one that sends the clay from the pug mill in a continuous oblong which is automatically cut into bricks, carried to the drying rooms, and later to the kilns. The color depends on the amount of iron in the clay; the Milwaukee brick made from clay with a small percentage of iron is of a light cream color. Buff-colored bricks are obtained by mixing ground chalk with the ferruginous clay. Ornamental bricks are colored by the use of metallic oxids, red, yellow, buff, blue, green, white, black, or brown. It is predicted that within ten years houses built of glass bricks will be plentiful in the United States.

BRUSH. An instrument, also termed broom, for sweeping or rubbing surfaces to remove dirt, or to apply paint, blacking, etc. A bunch of fibrous matter attached to a handle. Of very ancient origin and of universal use. Materials used are bristles, feathers, whalebone, rubber, hair of camel, Russian squirrel, badger, bear, goat, rattan, and also split cane, broom corn, and coir, the husk of the cocoanut, which is largely superseding hog's bristles for coarser brushes. The crude form is the paint brush with bristles bound together with twine, and a coating of glue; artist's brushes are made from Russian squirrel and camel hair, forced into a wet quill that contracts on drying and holds them fast. The cheaper scrubbing brushes simply have the bristles or fiber pushed through a hole in a piece of wood, and cemented with glue. The Woodbury process (American) trepans the back, the bristles not going quite through, rendering an extra or false back unnecessary. The well-known long-handled broom and the whisk broom are essentially American developments made from broom corn, a staple product of the Middle West. The long-handled broom of Europe was made from finely split cane, and was considered very expensive, used mainly on carpets. The American broom is within reach of all. The broom corn is run through machines which grade the fibers according to length; it is tied into bundles to bleach, or be dyed, and is secured to the handle by grouping and winding with wire by hand. Revolving brooms for street use were used in 1835, and the modern carpet sweeper is an evolution in miniature.

BUILDING. There has been a revolution in handling building material during the past few years. Labor-saving and time-saving devices have been introduced; bricks, mortar, etc., are raised by elevators instead of by hod, with derricks and hoists for the heavier bodies. About 1890 steel construction attracted attention in New York, and since then "sky-scrapers" have run riot. What is termed "mild structural steel," rolled to size specified in the form of I-beams, L's, Z's, etc., are riveted together to form a skeleton by the contractor, the cranes and hoists bringing everything to position as desired. As the building progresses the "erecting plant" goes up story by story. For the foundations and floors concrete is generally used, composed of one part cement, three parts sand, and five parts broken stone; it is used for filling in spaces between girders and pillars, and for protecting the steel construction; for which terra cotta, brick, and stone are also used. The problem of these buildings lies in the possibility of incessant vibration cutting off the rivet heads, and in the difficulty of finding by inspection the dangerous oxidation of iron when it occurs. The "Edison method" claims to build a concrete house, foundations to roof complete, in 24 hours, but practical builders believe the walls would buckle under the too rapidly imposed weight. With the decrease

in lumber and its increased cost, some substitute must be found before long, and the scientific world is looking towards bricks of glass.

BUTTON MAKING. Buttons are of three varieties; those with shanks, those with holes, and those covered with canvas and cloth, silk, etc. Introduced in the thirteenth century to replace the tags, etc., when flowing garments began to be replaced by modern types. Buttons and loops were long in use before the buttonhole appeared. Metal buttons for uniforms and trousers are of iron, brass, steel, etc., and large quantities are made in Waterbury, Conn. A fly press (a vertical iron screw having a horizontal arm with the end bent downward for a handle), or a self-acting, self-feeding machine, is used that cuts from sheet metal the disks called "blanks"; these are annealed and stamped convex; a machine cuts and bends wire for the shanks, and these are soldered. After being shaped on a lathe they are decorated and finished. Hoofs of cattle are used for horn buttons. "Composition" is made from fossil and vegetable gums mixed with feldspar, mica, carbonate of lime, and other minerals; it is run off in sheets, cooled, and then softened for cutting and stamping. Celluloid is the base of most campaign buttons. Pearl buttons have been booming for some years owing to the discovery of large quantities of suitable fresh water mollusks in the Mississippi river. Glass buttons are made by putting a colored glass rod into a mold holding a shank; pincers attached to the mold cutting the rod when desired. Vegetable ivory produces the "ivory" buttons, and is obtained from the corosso nut from a South American palm. It resembles ivory, and works well. The dyeing processes are complicated, and the secrets jealously guarded.

CARPETS. Woven carpets were known in the Orient while Western nations had rushes, straw, etc., to cover the floor. The first carpets of the Western nations were used as tablecloths. A carpet factory was established in France (1607), and fugitive French Protestants conveyed the industry to England (1685). In the United States carpet making began with the old rag carpet; every village had its weaver; even in 1890 there were 854 rag weavers' shops. Axminster looms were established in Philadelphia (1791); Erastus Bigelow of Boston introduced the power loom (1844) for weaving ingrain carpets, and secured a patent for a power loom with a Jacquard attachment for weaving Wilton and Brussels carpets (1850). Since 1855 Smyrna rugs and carpets have been manufactured on the power loom. Two types are produced, these being pile carpets having a surface of raised loops, cut or uncut, such as Turkish, Axminster, Wilton, moquette, tapestry-velvet, body Brussels, and tapestry Brussels; and the woven ply carpets, of which the three-ply is but little used, and the two-ply or ingrain is in general use. Indian and Persian carpets closely resemble the Turkish type. A linen or cotton chain, a linen filling, and a colored worsted yarn warp are used in making Wilton and Brussels carpets. Tapestry Brussels has a cotton chain, a linen or jute filling, a jute yarn backing, and a worsted warp of a single yarn, on which is printed the pattern in colors. Carpets are also woven in a solid color, and the pattern is printed on it afterwards. Velvet carpets contain more wool than tapestry and the face loops are cut. In moquette the back is of heavy jute and cotton with short pieces of woolen yarn continually cut and fastened to the warp thread to increase the "pile." Axminster is an imitation of Turkish and is made with a linen or hempen warp and a chenille filling. Four warp threads of wool, or three on a soft filling thread, are woven together producing the fluffy appearance. Ingrain or Kidderminster has a flat surface woven of a cotton or worsted warp and a wool filling; the pattern is the same on each side, but with colors reversed. Philadelphia has the largest ingrain factory in the world; Massachusetts and New Jersey are also important carpet centers.

CARRIAGES. It is curious to note that the history of the first wheel is absolutely lost in antiquity. At some time the rudimentary wheel appeared between the trailing poles, and has been slowly developed to its present ball bearing excellence of lightness and strength. The general use of carriages dates from the eighteenth century, but their greatest development occurred in England during the nineteenth century, when the Telford and Macadam process improved roads and made universal vehicular travel possible. Obadiah Elliott (1804) invented a vehicle swung on elliptic springs, and was awarded a gold medal by the Society of Arts; the old "C" spring was its evolution, and for absolute ease has not yet been surpassed. From that time carriages multiplied in style, the American "buggy" finding great favor in England, while the sulky is another American type of less foreign favor. In light road wagons, buckboards, surreys, and runabouts, the United States is probably superior in all vehicles except the English dog-cart and gig. In broughams and victorias the finish given to American types is admitted to be superior to any in Europe. This was proved when an Englishman, buying a carriage of Studebaker, sent to New York for varnish when his vehicle needed it. He later complained the varnish was not good; the fact being it was imported English varnish, but the English makers in London had not the hot room appliances, etc., for producing the best possible effects with their own varnish. The woods used are mainly ash, hickory, elm, poplar, cherry, Spanish cedar, and mahogany; the hubs being of elm, the spokes of hickory or white oak, with outside rims of oak or ash. The surrey is a two-seated buggy; the victoria is an open-hooded vehicle with two seats; the landau is for four passengers and may be transformed from an open to a closed carriage; the coupé is a closed vehicle for two, with a separate seat for the driver, differing from the brougham in having a round glass front instead of a flat front. The cab, omnibus, and stage coach are well-known types.

CELLULOID. Made from gun cotton, camphor, and other substances, heated and molded to shape under pressure. First made by a Mr. Parkes, of Birmingham, England, under the name of "Parksine" (1856). Independently, and without foreknowledge, invented later by J. W. Hyatt, of Newark, N. J. It has largely replaced ivory in many manufactures and is made also in imitation of tortoise shell, coral, amber, etc. It is used for making combs, piano keys, collars, handles for knives, forks, and umbrellas, and a great variety of articles. It is highly inflammable, so must not be brought in contact with great heat.

CHEESE. A milk food product made by eliminating the curd, or casein, fat, etc., from the whey, pressing, shaping, and maturing the product. Cheese is mentioned as early as 1400 B.C., and most early historians treat of it, and its manufacture, describing Roman varieties similar to Limburger and our Sage cheese varieties. There are about 150 cheeses made to-day. The *hard* cheeses are Cheddar, Cheshire, Gloucester, Wiltshire, Stilton, Dorset, Wensleydale, and Cotherston, or types made on these old time lines. The foreign hard cheeses are Gouda, Parmesan, Edam, Gorgonzola, with Roquefort a semi-soft type, the true soft cheeses being Brie, Camembert, Limburger, Neuchatel, and the cream cheeses. In the United States popular cheeses are made by grinding certain cheeses with butter, cream, etc., and selling them in jars as varied "club" cheese. There are about 3,000 cheese factories in the United States, mostly making Cheddar, and Canada has a large and growing industry, and export trade for cheese. After being made it is allowed to "ripen" in curing rooms, or in some cases in artificial caves, the "greening" of certain European cheeses being said to be due to the accident of a shepherd forgetting his piece of cheese after sheltering from a storm, and returning long after to find it much improved. Chemical action is stated to be now induced by copper wires, in the lower grades, but the pure, high class cheese is one of the most healthful products, amounting in the United States to over 300,000,000 pounds annually, mainly from New York and Wisconsin. These two states and Canada have passed laws guaranteeing the quality of cheese produced.

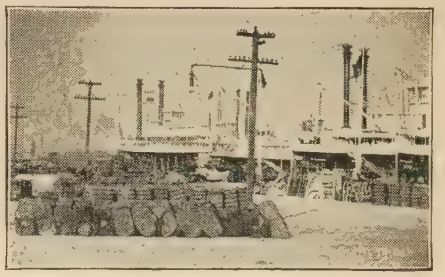
CLOCKS. Dating from the sundial, and the clepsydra, of the ancients, the latter being a small vase with water dropping through the lower end, somewhat as sand ran through an hourglass. In the fourteenth century Henry de Vick built the first clock recorded, for Charles V. of France; working by weights and wheels. The pendulum appeared in the seventeenth century. Clocks are run by the automatic falling of a weight, or by the uncoiling of a spring, regulated by the oscillations of a pendulum. The works consist of a "train" of wheels, each moving after the other. The axle of a wheel bears cogs on its edge. Where a weight is used, the largest wheel has the string of the weight wound around the axle, and its speed is adjusted to each of the others, the final one being connected with an escapement wheel transmitting to the pendulum the power to swing. The escapement wheel with its 30 teeth revolves once a minute; another wheel revolves once an hour and moves the minute hand; the third revolving once in twelve hours moves the hour hand. A weight governs the striking of most clocks. The minute wheel releases a catch, and the weight on the cylinder runs down a little, forcing a hammer to strike a bell. Two pieces of mechanism, a "snail" and a "rack," determine the number of strokes.

Electric clocks are impelled or governed by the current. In the first the clocks are automatically wound by an electro-magnetic attachment; in the second a primary clock is connected with a circuit of other clocks, and regulates or runs them. *Pneumatic* clocks are run by compressed air, the movement of the central clock compressing the air in tubes connected with the system, moving the hands by forcing a bellows at each dial to expand. *Astronomical* clocks are carefully and simply constructed, great care being taken to preserve them at an unvarying temperature, and to protect them from outside disturbances.

COAL. A brown or black rock, soft, brittle, or hard in variety, consisting of carbon, hydrogen, oxygen, and nitrogen. Originally vegetable matter subjected to chemical and structural changes, and great pressure; the oxygen, hydrogen, and nitrogen being gradually expelled until the carbon in increased volume remains, this making the material differences in coal, and its combustion and initial heat, according to the type of fireplace and the draught employed. Coals also contain sulphur in various forms, silica, alumina, and magnesia, the three latter tending to make it incombustible, forming the ash and the "clinkers." When it contains 90 per cent. carbon it is termed *anthracite;* when less it is termed *bituminous* or soft coal. Coals contain gases, principally carbon-dioxid, methane, and nitrogen, frequently causing great danger in the "workings." "Choke-damp" is carbon-dioxid, and "fire-damp" is methane, this being inflammable. Coal is classified into three divisions, *Lignite, Bituminous, and Anthracite. Lignite* is dark brown or black, fibrous or laminated, showing the woody tissue structure, burning poorly, with heavy smoke; *Bituminous* coal is a free burner by reason of the gases and volatile principles contained; it is black, soft, brittle, and opaque, and is used for steam raising, and household purposes, throughout the civilized world. The varieties of bituminous coal vary widely in hardness, texture, and adaptability, the extremes in most instances meeting; thus Lackawanna can be hard as Lehigh, or Lehigh can be as soft as Lackawanna, in certain divisions of either; the utility depending largely upon the type of fireplace, furnace, or grate employed, and the regulation, power, and direction of the draft. When heated it gives off the *"gas"* of commerce, and the non-volatile residue is *coke.* In good coal there is about 10 per cent. ash, and 75 to 88 per cent. carbon. The scientific subdivision of bituminous coal is widely taken as *caking* or *non-caking* varieties; the *caking* coal softens with heat, swells with the gases liberated and expanded, becoming a sticky, tarry mass, and eventually a hard coke. *Non-caking* coal burns freely without caking, air passing between the particles; an essential in stoking, or in the furnace fires, which *caking* coal clogs unless mixed with *non-caking* coal to insure perfect and speedy combustion. *Cannel* coal or *parrot* coal (from the noise it makes in burning) is compact, hard, and does not soil. It is a gas coal. *Steam* coal bridges between the true bituminous and anthracite, and in the South Wales mines is frequently found lying adjacent to the other two varieties, the same bed in one place being anthracite, in another bituminous, and in another steam coal; showing the gradual conversion into anthracite. In the United States the types are more widely separated. *Anthracite* coal contains the maximum carbon and the minimum volatile qualities. It is hard, does not soil, gives out little smoke, little flame, but great heat; North Wales and eastern Pennsylvania are the principal areas of production. The coal fields of the United States are of enormous extent, although many of them are exceedingly young geologically, and to-day the United States stands at the head of the coal producing countries, with from 350,000,000 to 400,000,000 short tons, anthracite being represented by about 75,000,000 short tons, coming from Pennsylvania. Great Britain stands second, with about 27 per cent. less product. The United States is the only country regarding its future coal supply with any confidence. It is estimated that 100 years will nearly run out the European coal fields; then will come industrial changes and also changes of population, trending to water power sites, and other sources of energy at present neglected. The coal fields of China are enormous, and will some day be a potent world factor. Coal gives off *coal tar,* which gives under fractional distillation light oil, middle oil, heavy oil, anthracene oil, and the liquid residue of the still known as *pitch.* From these distillates are made naphthalene, phenol (carbolic acid), creosote, benzine, naphtha, and a number of dyes and drugs. It is claimed that a locomotive loses 80 per cent. of the full power in coal, utilizing only 20 per cent.; that a locomotive obtains one horse power per hour from every four pounds of coal burned. Herein lies the field for improvement in utilization of combustion.

COLD STORAGE. The application of artificial ice methods to the preservation of meats, fruits, vegetables, and other perishable goods. By its use the merchant, farmer, or grower is able to hold his goods for more favorable markets, and by refrigerating cars the problem of transportation has been solved. Steamers equipped with cold storage are able to carry fresh meats and other provisions from the United States and Australia to England.

COMBS. Were originally used for adjusting the hair, and Greek and Roman types were made of boxwood; ivory came into use among the Egyptians and spread to Rome. Precious metals were used, and combs are generally found in early Anglo-Saxon graves; ritualistic directions for combing the abbot's hair had



COTTON DOCK. New Orleans.

a place in the church service, and combs are found in the tombs of the martyrs. Modern combs are made of tortoise shell, ivory, horn, wood, bone, metal, india rubber, and celluloid. The material is made into plates of a desired thickness, and then the teeth are cut. By this process the intervening substance was wasted, but, by a modern method of "parting," this wasted matter becomes teeth in another comb. Rubber combs are made by pressing the rubber into the required shape, and then vulcanizing it with sulphur. Combs with tubular teeth are also used to apply chemicals direct to the roots of the hair.

COTTON. An important vegetable fiber differing from all other fibers in a peculiar twist rendering it valuable for spinning. Its most profitable area of cultivation is between the twentieth and the thirty-fifth parallels north of the equator, or in the United States, northern Mexico, Egypt, northern Africa and Asia, southern India, and the Malay Peninsula; south of the equator it is grown satisfactorily in Brazil. It is grown mainly for the fiber surrounding its seeds, but its modern by-products of cottonseed cake for feeding cattle, cottonseed oil for commercial uses and for cooking purposes, and the fiber of the stalks, are almost as valuable, under the magic touch of modern science. The United States produces about 75 per cent. of the total world's production (as against 84 per cent. in 1898-1899); India producing nearly 13 per cent., and Egypt 10 per cent. Of the United States cotton, England takes about 50 per cent.; Germany 22 per cent.; France 11 per cent.; Italy 5 per cent., etc. The raw cotton is first cleansed from foreign substances and seeds by means of the cotton gin, which is an arrangement of saw teeth tearing the seed from the lint and carrying it away; or by the use of a roller-gin with two rollers working in different directions and not tearing the staple. It is then baled for shipment, under hydraulic pressure. At the factory the cottons are mixed to produce uniformity of yarn; the fibers are opened and picked, passing through several operations reducing it from a web, or sheet, into cotton yarn. Each step has its object: (1) to remove impurity; (2) the attenuation and strengthening of the thread; (3) correcting the errors of preceding process. The final thread is singed by passing through a gas flame to remove loose ends, and is polished by starch, beeswax, or other materials, to give a finish and to increase strength. The process of weaving into cloth does not differ from any other form of weaving.

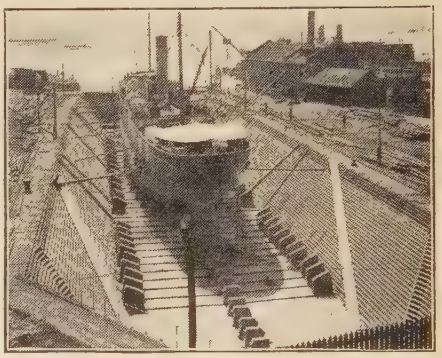
DAMS. A dam is a barrier built across a depression to raise the level of water, or to conserve or retain water, for irrigation, hydraulic or manufacturing power, or for utility in cities, towns, etc. Dams are built of earth, stone, steel, and steel reinforced by masonry; the principle involved is that of passive strength against the maximum pressure of augmented

or diminishing force. This strength is directly proportioned to the height of the water behind the dam, and an important feature is the provision for passing waste or flood water, which acts in time of danger as a safety valve. This is done by flood gates, by a crest to the dam which can be dropped when desired, or by artificial waste channels leading to the spillway connected with the natural stream below. *Earth* dams generally have a heart wall, or core of clay and sand, of concrete, or of stone masonry with cement; the upper face of the dam being paved with stone, concrete, or brick, to prevent erosive action by water. *Masonry* dams are modern engineering miracles of maximum strength with minimum material and cost. The sixteenth century had the first principles, but only modern times have seen that principle brought measurably to perfection. These dams are monolithic structures, the blocks of stone not laid in regular courses, as the pressure works horizontally and also vertically towards a rupture. Portland cement binds the stones into a mass, intervening spaces being filled with concrete. *Arched* or *Curved* dams utilize the arch principle to resist a part of the thrust of water on a dam, instead of relying wholly on gravity or a section capable of resisting overturning or sliding. All other dams are simply variations of the main principle of controlling water in the most effectual, economic, and satisfactory manner, by means of *Concrete Masonry* dams; *Rock-fill* dams; *Steel; Timber; Drum;* or *Movable* dams, with variations of *needle, wicket, shutter,* or *bear-trap.*

DECORATIVE ART. The beautifying of objects primarily useful, by elements of harmony in form, surface, color, rhythm, or balance. Contrast the house interior of 50 years ago with the interior of a modern house of the corresponding type, and the lesson is learned. A chair is not less useful because it is beautiful; nor a room less habitable because it is in harmony. The era when it was a sin to be comfortable, or to smile, has passed, and the era of decorative art has dawned. To the spread of decorative art belongs the great improvement in wall papers, not only in hues but in designs; also the vastly improved woodwork, the lintels, mantels, scrolls, friezes, etc., in which effects are produced to-day by machinery at a merely nominal cost, which a hundred years ago would have been almost priceless, done by hand. Furniture has been affected in the same way; unknown woods have been introduced; old artistic styles revived; and new, common sense designs evolved. The old workers of the past were possibly crude in some things, but their coloring and their outlines have remained the standard of the world. To-day our grotesque and conventional figures blend with the one old idea of harmonizing the play of light and shade with utility, along circumstantial surroundings. It is beyond limits to even outline the tremendous scheme of color and ornament; attention can only be drawn to metal work, woodwork, ceramic art, glass work, textiles, and murals, which must cover pictures and statuary as well as merely the wall decoration. It is one of the widest fields of change and improvement the past century witnessed, and it is no exaggeration to say that only the first beam of light has yet fallen.

DENTISTRY. The science of diseases and lesions of the teeth, and the making of appliances to correct loss, deformity, injury, etc., to those organs. The first principles date back to the early Roman era, as proved by skulls recently exhumed; the first real strides being taken by Fauchard (1728) suggesting porcelain teeth, which were manufactured in France in 1774. Dr. Gardette of Philadelphia introduced the gold base (1787); gutta percha was used by Edwin Trueman, in England (1851); Goodyear discovered vulcanite and obtained a patent in England (1855) for a dental plate in which the teeth were fixed before vulcanizing. Rose pearl, a preparation of collodion, and celluloid, both fell into disuse. Porcelain, and porcelain and platinum, are used as bases for artificial dentures. A base is swaged to fit the mouth, the teeth are affixed, porcelain is molded to simulate gums, etc., and the entire piece is subjected to heat; this being the best process so far as appearance, sanitation, and durability are concerned. *Crown* or *Bridge* work is an elaboration of the prehistoric method of attaching artificial teeth by bands, springs, or artificial crowns, to the existing teeth, or their remains. Gold shell crowns for covering teeth too far gone to fill, were introduced by M. Mouton of Paris (1746). Filling with lead foil was superseded by gold, applied by the mallet process (1853). Silver alone is not used, as it is liable to oxidize, platinum is too hard, and tin in the form of foil has been used since 1783. Hence came the plastic fillings of the present day, mainly ethereal solutions of gum resins, and also the amalgams consisting of combining two or three metals with mercury as a base. Gold fillings are no longer malleted into the orifice; a cast is made, the tiny gold ingot formed, and accurately placed in the tooth, with little jarring or discomfort. Drills, burrs, scrapers worked by electricity, the use of rubber dams to exclude moisture from cavities, or to locate diseased nerves by varying degrees of heat in insulated moisture, have not only given speed to dental operations, but have increased the efficiency, and robbed the dentist's chair of half its terrors.

DIES AND DIE SINKING. The art of making and using dies to stamp coins is very ancient, coins existing at least 800 B.C. Die cutting and sinking reached its development only in the closing years of the last century. The punch and the press was the crude method; presses to shape and cut metal were invented by T. Griffiths of England (1841), and used in France to produce kitchen utensils. To-day dies are used in shoe factories, and in all industries where leather, paper, cloth, or metal is used. The wonderful cheapness of sheet metal products is due to dies, a single stroke accomplishing what formerly called for long and tedious detail work, and striking examples are sewing machines, bicycles, etc., whose parts are largely produced by the power press. Kitchen utensils, jewelry, boxes, pens, buttons, a thousand and one familiar things, are struck between two dies of suitable form. Dies are male and female, the male being a punch fitting accurately into the other part; the punch is a power hammer driven against a molded or a flat surface. The varying work covers: (1) cutting, in which are included punching and shearing; (2) forming, including bending, embossing, and curing; (3) drawing and redrawing, which are more than forming, the surface being tightly held while discs are changed, etc.; (4) coining and drop forging. *Blanking* dies cut flat blanks, a shear edge being given to the punch, or the die, as desired. *Compound cutting* dies are used for accurate work, as in watches, dynamos, and motors. *Needle* dies punch eyes in needles, the needle being supported while the eye is first stamped, and then slowly punched. *Bending* dies are used in armatures, switchboards, etc., where is needed metal bent at a single angle, or where a loop is desired. *Drawing* dies shape metal for thimbles, bells, metal box covers, etc. *Die Sinking* is a branch of engraving. A piece of steel forms the matrix on which a design is made in intaglio, and this is impressed on a piece of softer steel called the punch; this is hardened, and impresses the design on a third piece of steel, which is an exact reproduction of the matrix, and forms the die from which coins are stamped. The expense of engraving is heavy, the life of a die short, and so a succession of dies are made from the original, expensive matrix.



DRY DOCK.

DRY DOCKS. Of two varieties, stationary and floating. A basin connected with a harbor having somewhat the shape of a ship's hull, originally made of timber, but the more modern ones are of masonry and concrete, giving greater durability, strength, and therefore safety. The ship is floated into the dock at the natural level of the high tide water, which also assists in closing the gates to the basin. In many docks the gates are controlled by hydraulic pressure. The gates being closed, the water is pumped out, leaving the hull dry, adequately supported in an upright position, and capable of being repaired, inspected,

cleansed, or painted. A floating dock is a vast structure like a box, of sectional divisions, practically consisting of a number of pontoons placed side by side. It is open at one end, and is sunk partly beneath the water to admit a floating ship, the depression being produced by the admission of water into compartments varying the center of gravity. When the ship has entered, the compartment water is pumped out by steam pumps, or the later electric motors. A floating dock with a lifting capacity of 15,000 tons consists of five pontoons or water-tight boxes; three along the bottom, and two at the side walls; the whole divided into 40 water-tight compartments, each with an inlet for water, and an outlet controlled by a steam pump. The pumping also preserves the center of gravity during the entrance of a ship, which is shored up by blocks, etc., in an upright position, so that work can be done as though on dry land. Recent dry docks are lighted, and all machinery controlled and operated, by electricity. The great dry dock "Dewey," that was towed 10,500 miles to Manila by a cable one and one half mile long, is a steel box, 500 feet long, on square tanks 18 feet deep, with side walls 64 feet high, costing $1,250,000. It was designed to give the United States equal docking facilities in Pacific waters, as possessed by Japan, Great Britain, and other nations.

ELEVATOR. A mechanical appliance to transport passengers or freight to different levels. Usually a car, designed to run at six to eight hundred feet a second, or at any less speed desired. Safety from accident is provided for by clutches thrown into operation when the car exceeds a certain speed, and which stop the car by gripping guides at the sides of the elevator shaft; also by air cushion devices which break the shock of falling. The air cushion device works by making the lower portion of the shaft tight fitting, so that a falling car acts as a piston in a cylinder, and is brought to a slow stop by the compressed air. A car dropping 287 feet did not break eggs, or fracture the electric light bulbs, on stopping. Another device has the air cushion at the top of the shaft; the car carries two grips whose jaws loosely encircle two steel cables studded at intervals with buttons. These cables connect with a yoke carried on a piston-rod and piston working in a steel cylinder. When the car falls it closes the grips on the studded cables and liberates the piston, which, sliding down the cylinder, compresses the air and stops the car. High speed elevators are hydraulic or electric. In the former the car is operated by cables running from its top, over sheaves at the top of the shaft, and down to the machinery in the basement where the cables run round alternately fixed and revolving sheaves, the latter being attached to the piston-rod of the hydraulic cylinder. To raise the car, pressure in the cylinder forces out the piston-rod and the traveling sheaves are moved away from the fixed sheaves. The electric elevator is practically the same, substituting a motor for the engine. Modern passenger elevators range up to 26 stories. Elevators for freight simply vary in the carrying construction.

EXPLOSIVES. Gunpowder was probably the first, and its invention is credited to the Chinese; later to Roger Bacon (1249). Formed by a mechanical mixing of about 75 parts of saltpeter (potassium nitrate), 15 of charcoal, and 10 of sulphur. When exposed it absorbs the oxygen necessary for its combustion; when confined, from the saltpeter. Schwartz, a German monk, is said to have originated the use of large grains, increasing explosive force. Percussion caps, invented by Alex John Forsyth, a Scotch clergyman (1807), were followed by brass and copper shells of succeeding periods, Joshua Shaw being the first to patent them in the United States (1842); solid headed shells patented by Hotchkiss (1869). *Gun cotton* was discovered by Schonbein (1846); *nitroglycerin* by Sobero (1847); the former is made by dipping cotton in mixed nitric and sulphuric acids, the latter by treating glycerin with nitric and sulphuric acids. *Dynamite*, patented by Noble (1868), is nitroglycerin absorbed by inert, infusorial earth, making it safer to handle and use. *Wood* or *white* gunpowder, invented by Schultz (1863), is granular wood treated with nitric and sulphuric acids, the grains produced being soaked in a solution of saltpeter. *Tonite* (1874-1876) is made from gun cotton and nitrate of barium. *Rackarock* (1881) is prepared from potassium chlorate and nitrobenzene. *Bellite* (1885 and 1891) is ammonium nitrate and nitrobenzene. *Melinite* (1885) is picric acid and gun cotton. *Lyddite* is believed to be substantially the same as melinite. *Cordite* (1889) is made from nitroglycerin, gun cotton, and mineral oil or jelly. *Indurite* (1893) is prepared gun cotton and nitrobenzene. *Smokeless powder* consists usually of gun cotton (nitrocellulose), or nitroglycerin, or both, made adherent by a paste or gluey compound and forced through a plate provided with small holes forming it in piths which are subdivided into grains.

FELT. Advantage is taken of the natural tendency of the fibers of hair and wool to interlace with each other, and thus felt is produced without weaving. Its introduction dates long before the Christian era. The mechanical interlacing is due to the fibers being notched or barred along the sides, all pointing from the root to the tips. The first mechanical process for its manufacture was invented by J. R. Williams, an American (1820). The wool is carded and placed in layers until the desired thickness is obtained, the outside layers being the finer in texture. The mass is placed between rollers, partly immersed in water (some rollers have steam driven through them) and is beaten, pressed, and given an oscillating movement at the same time. Dyeing and finishing complete the process. Felt hats are made from raccoon, rabbit, or beaver fur, combined with wool. Cloaks, capes, padding, carriage linings, table covers, piano hammers, etc., are made from felt; it is also used in upholstery and for floor coverings. Felted sheathing for boiler pipes is made from woolen refuse. Asphalted roofing is a coarse felt treated with pitch, coal tar, or asphalt, and a better quality is rendered inodorous for lining walls and floors. The secret of manufacturing is closely guarded, and there appear to be no hand or text books on the industry.

FILE. A steel instrument with sharp ridges or teeth, used for abrading or cutting down other bodies. One of the earliest tools. It is of hardened steel, tapering to an end inserted in a wooden handle, the rest of its length covered with teeth. A *rasp* is a file with coarse single teeth made by a punch, instead of long file teeth cut across by blows of a chisel. Files are flat, round, square, three sided, and vary from an inch to a yard long. A *taper* file has a point reduced in width; a *blunt* file keeps its sectional shape throughout. The teeth of a file are single cut, double cut, and rasp cut, and are graded as rough, coarse, bastard, second cut, smooth, and dead cut. Formerly all files were handmade from a steel bar forged to shape, ground smooth, and cut by hand tools; the teeth being cut one by one with a chisel struck by a hammer, each tooth a burr or ridge of metal, raised only on one side of the cut, the same distance apart and of uniform depth. They were tempered by heating, plunging in cold water, scoured in sand, washed with limewater, dried, oiled, and tested. Machine made files have the steel bars forged by hand, or machines, and are then ground smooth, run through the cutting machines, which are a moving table carrying the blanks progressively under the trip hammer arrangement of cutting chisels. They are then tempered and oiled.

FIRE EXTINGUISHERS. A device to smother flame, which can be placed in buildings or on ships, and moved as desired, to liberate automatically, or otherwise, water or steam charged with gases. Introduced in England (1816). Of varied types, generally a receptacle of water with two compartments, one containing some carbonate, and the other some acid. When used, the two ingredients are mixed in the water by inverting, fracturing a section, or otherwise, and carbon dioxid is formed, which smothers flame. Chemical engines have large cylinders on wheels; on ships pipes are run to desired sections; chemicals forming dioxid have steam passed over or through them in action, and the gas is carried by the steam to the flame. Automatic extinguishers released by heat are used on ceilings; hand bombs are filled with chemicals, or carbonic acid gas under great pressure, to be used at the outbreak of fire.

FIREPROOFING. A scientific attempt to obtain a building non-inflammable and not seriously affected by fire. The first fireproof buildings were of a public character, where the architect was hampered neither by cash nor space. Thick walls, vaulted floor construction, and stone stairways demanded much area and minimum height. With the introduction of iron into buildings came the first real demand for fireproofing. The floor was the first essential in 1801, when Phillips & Lee, of England, erected a cotton mill with cast-iron beams and brick arches sprung between them. With the introduction of the rolled I-beam into America (1853) it was possible to spring a single brick arch, bringing the floor weight down to 75 pounds per square foot; then came solid masonry walls inclosing a frame work of cast-iron columns carrying rolled iron floor beams, with brick arches sprung between them. The columns were left bare (1870) now regarded as poor construction. Then came the hollow tile arch used in the

New York post office (1872), and for ten years nothing advanced. A nine-inch flat tile arch, where each tile had one horizontal and one vertical web, and a special flat tile used instead of plaster filling to protect the lower flanges of the I-beams, appeared in 1883. Then the "sky-scraper" era dawned in Chicago, to spread through the United States, and to prove one of the strongest factors in developing fireproofing. The total height is supported by steel work, the outer walls being self-supporting. It is structurally independent of floors, etc. It is incombustible, but not fireproof, as a hot fire will buckle, expand, and twist the iron. Therefore the steel frame must be protected. Fireproof floors, partitions, roof, ceilings, etc., provide for the interior, and arches of hollow tile, concrete, or other material are used, these covering the steel, and also calculated to support the floor loads. The columns are also protected against destructive heat. Fireproof doors and shutters protect against the admission of fire from outside, and the final step is the essential, always at command, equipment to fight any fire occurring. Recent fires in fireproof buildings may be said to have indorsed the construction, but have also shown many weak points. In hotels where the question of safety to the individual is paramount, the danger is much more from smoke than from actual fire.

FLOUR. When the grain is not specifically named, all "flour" is the ground and bolted substance of wheat. This grain is the more valuable for making bread because in the crude gluten of the kernel is gliadin, a highly tenacious substance enabling the flour to hold carbonic acid gas, introduced in the form of yeast or baking powder, thus making the bread "light." The first successful steam flour mill was in London (1784). Where millstones are used they have sharp-edged grooves, the cleansed grain being fed, by funnel-shaped boxes termed "hoppers," through a hole in the upper millstone, gradually falling between them to be ground. Air currents keep the stones from overheating and also carry away the flour. It passes to the dressing machine, a cylinder held at 45 degrees, of extremely fine silk mesh at the upper end, gradually becoming coarser, thus separating the flour into different qualities, ready for packing. In the more modern mills iron or porcelain rollers are used instead of stones, the grain being winnowed between rollings, and the rollers must be kept cool or the flour will be dark and have a musty odor. A wheat kernel has a central core of starchy cells, surrounded by gluten cells called middlings, covered by the fibrous and indigestible husk, the middlings being the valuable bread factor. There are two machines for purifying the middlings, the "gravity," which passes it through a current of air blowing the bran away, and the "sieve," which is oscillated in an air current, also removing the bran. *Self-raising* flour is flour mixed with some leavening agent, such as baking powder. A new method of preserving flour has been successfully adopted in England. By hydraulic pressure it is squeezed into bricks, all forms of larval life destroyed, the flour preserved from the ravages of insects, and from mold. 300 pounds of compressed flour occupy the space of 100 pounds in the ordinary state.

FORESTRY. The conservation of forest products; *arboriculture* being the care of the individual tree. The uses of a forest are to supply timber, fuel, etc.; to offer protection against winds; to conserve moisture, checking its loss by seepage and evaporation. In a treeless country great swamps and deep, spongy soil act as reservoirs, delivering the water slowly, but in the thinner soiled and the mountain regions forests are absolutely necessary, if the streams and rivers are not to be mere trickles in the summer and raging, destructive torrents in the spring. The growing scarcity of forests was felt in England in the sixteenth century, and scientific cutting and re-planting began. In France, Germany, Belgium, and other parts of Europe old forests have been cared for, new ones laid out, denuded areas reforested, and government schools maintained to educate skilled foresters as an important national industry. For a long time in the United States the forest wealth appeared so vast that repressive and protective measures seemed unnecessary, until forced by the wasteful lumbering methods, and the destructive forest fires due to carelessness. Some idea of the lumber demands of the United States may be formed from the fact that, annually, the sawed lumber is estimated at 35,000,000,000 feet, not including 12,000,000,000 feet of shingles, 23,000,000 railway ties, or 1,000,000 telegraph and telephone poles, or the wood to produce 7,000,000 bushels of charcoal and 500,000 cords of hemlock bark for tanning purposes. Extensive reservations have been made about the watersheds and sources of great rivers, and in 1899 there were 36 reservations embracing more than 46,000,000 acres of forest lands. There are also a number of State reserves preventing the too rapid escape of water in floods, and avoiding the succeeding scanty water supply for irrigation and other uses. Forests are of two kinds, pure and mixed; the pure species run to pines, spruce, silver fir, Douglas fir, beech and maple, and the mixed woods do best with larch, birch, poplar, ash, oak, chestnut, and walnut. Reforestation is achieved by young trees obtained by seeding in nurseries, and raising them large enough to set out, and by hand-seeding the desired area. It has been shown that where land is not too valuable forests can be made to pay four per cent. and over, and many large owners have secured the aid of government experts to plan their management. Forestry, properly applied, is the study of the forest as a living organism, the life of the individual tree as a unit of the vast assemblage, and the best means of caring for and preserving the whole. *Arboriculture* is a term applied to the scientific cultivation and care of trees, now developing into a profession. Numbers of young men have taken up the study under the Forestry Department at Washington, D. C., along the lines already founded in Europe. Trees are inspected, diagnosed for ailments as though human individuals and treated accordingly. Elm trees suffer from a beetle burrowing under the outer bark, and by shaving off this bark during the fall, the third bark automatically replaces the second bark, forces itself to the front, and the tree is saved. Where wind or strain of branches has produced fissures into which wet has seeped, the decayed parts are cut away, the sound wood dressed with grafting oil, a shield of soft plaster imposed, and an outer shield of tin. Properly trimmed the bark will soon grow over the casing. In one case a tree was being "strangled," it was not doing well, and examination revealed an old wire circling it, buried two inches deep; when removed the tree revived. Old hammock hooks, nails, axe heads, etc., are all swallowed by the spreading bark, and all affect the trees. The modern student of arboriculture unhesitatingly makes his diagnosis, and gives treatment, saving countless thousands of handsome, valuable trees.

FUR. The principal fur-bearing animals are the sable, seal, ermine, marten, silver and red fox, sea otter, beaver, wolf, bear, mink, lynx, badger, raccoon, rabbit, squirrel, opossum, hare, muskrat, and cat, all found in North America, the sable principally in Russia and Siberia. Chinchilla and coypu (furnishing nutria fur) come from South America, monkey from Africa, and lamb from Persia. The chief source is the Hudson Bay country, which was opened in 1670 by the Hudson Bay Company for fur trading. Commercially furs are known as felted or dressed; felted furs are used for hats, fabrics, etc., for which the soft short hair next to the skin is used; the longer outer hair being cut or pulled out; a special machine being used for removing the soft fur of the beaver; dressed furs are those made into muffs, boas, hats, capes, trimmings, and carriage robes, by the furrier. The pelt is salted and dried by the hunter, and the furrier steeps it in a mixture of bran, salt, and alum, to remove grease from pelt. To prevent oiliness of the fur it is given a bath of soda and soap; the alum producing a tanned quality like kid leather. The Chinese used furs as clothing 2,500 years ago. At one time beaver skins were used in New Amsterdam in place of currency.

GAS. Murdoch of Redruth, Cornwall, England, developed gas for illuminating purposes, erecting a plant and using it in his house and factory (1792). The first gas company was the National Light and Heat Company of London (1804); the first street lighted was Pall Mall (1807); other places rapidly following. David Melville, of Newport, R. I., used gas (1805-1806); Philadelphia lighted its streets (1815); Boston (1822), and New York (1825). Coal is heated in retorts; the heavy gas driven off passes, by a pipe termed an hydraulic main, through curved pipes or condensers, in which process coal tar and ammoniacal liquor condense and fall into a well. The gas passes to purifiers, over slaked lime, which takes up sulphureted hydrogen and carbonic acid; it is then headed downward to the gas holder, a large tank whose base rests in water, and from which the gas is distributed to the consumers. The by-products, to-day, are stated to be much more valuable than the gas obtained, and include coke, ammonia, anilin, phenol, or carbolic acid, naphthalene dyes, various artificial drugs, and basic perfumes. *Acetylene* gas is a compound of two atoms of carbon and two of hydrogen; discovered by Edmond Davy (1836). Its modern method of preparation from calcium carbid was discovered by Thomas L. Willson, a Canadian, in 1893. Calcium carbid is formed by exposing a mixture of lime and carbon to the action of an

electric arc. Calcium carbid treated with water gives off acetylene gas, which burns with a dazzling white light; used in isolated places remote from electric or gas lights. *Water* gas is made by decomposing water as steam; its hydrogen is mixed with a heavier carbon gas derived from oil, and the mixture made stable by subjecting it to a high temperature. Its cheapness of production is its chief recommendation; apparently now offset by its lack of by-products. Ibbetson acted on Fontana's discovery (1824) and developed it; first United States experiment tried at Girard House, Philadelphia (1858); process revolutionized by Lowe (1875), who received the Franklin gold medal of honor (1886). *Welsbach burner* improves the quality of gas light and saves combustion. Invented by Carl Auer von Welsbach (1885); being an application of the *Drummond light;* a mantle of fabric is dipped in refractory earth salts; the flame from mixed gas and air heats the mantle, which glows with brilliant incandescence of pure white quality. *Drummond light* or *Lime light* is a piece of quicklime subjected to the heat from an oxyhydrogen blowpipe, emitting an intensely brilliant light. Discovered by Lieutenant Drummond of England (1826). *Pintsch* gas is made from oil and stored in a highly compressed state in cylinders for ease of transportation. Its chief use is for lighting railway cars. It has recently been demonstrated that the modern gas engine achieves a thermal efficiency of 30 in a possible 35, and is therefore an almost perfect machine; experiments are now directed to radical changes in method of operation rather than to improving the machine.

GLASS. A combination of silica (sand), soda ash, and lime; or silica, pearl ash, and lead, fused. In a molten condition it can be formed into any shape by casting, rolling, blowing, pressing, drawing, spinning, or welding; the principal methods being casting, blowing, and pressing. Soda, lime, and sand combine for window glass, and soda, lime, and potash for plate glass; the potash hardening and the lime toughening the product. There has been little change in the furnace, consisting of eight to twelve crucibles capable of sustaining a heat of 20,000 degrees Fahrenheit. Some few factories have installed the continuous tank, gas-heated furnace. Window and plate glass, bottles, and jars are the principal branches of product. In making window glass the molten mass flows into the refining compartment under a higher temperature until the liquid is clear; in the gathering compartment it is thickened by a lower temperature for the gatherer, who is aided by small blast furnaces known as "glory holes," each with several openings into the flames, to finish his piece of work. Protected by a mask held in his teeth he dips the long iron blower pipe again and again into the liquid until he has attached a lump weighing 20 to 40 pounds. It is revolved in the pot to even it, and in an iron mold to make it pear-shaped. The gatherer then passes it to the blower, who makes a great glass bubble, which he keeps constantly swinging and rotating, and being blown into, until a five-foot long cylinder is evolved. Much of this work is now done by machinery. The lower end is broken in the furnace and the hole enlarged. The cylinder is detached by a thread of hot glass to which is applied a cold iron, and a diamond or red hot iron is used to split it lengthwise. The flattener warms the tube in an oven, regulated heat causing it to open automatically; it is slowly cooled and then cut. Colored glass is made by adding dyes, usually metal oxids, to the fluid glass. *Watch crystals* are circles cut from the blown glass spheres, the edges being curved. *Crown* glass is almost obsolete and was made by flattening the sphere. *Flint* glass should contain lead, but the term is applied to numberless forms exclusive of windowpanes and dark bottles. *Plate* glass is molten glass poured on a casting table and rolled to a uniform thickness. *Ground* glass is when the surface is slightly roughened. *Cathedral, opalescent, art, ribbed, and wire* glass are largely manufactured in the United States, the latter giving protection against storm, stone, and fire risks. *Cut* glass is blown and then ground into brilliant faces or facets; grindstones moistened by wet sand cut the rough outline to be finished by emery wheels and putty powder. *Optical* glass is cut, ground, and polished from a solid lump, mostly made in France and Germany; the Alvan Clark factory at Cambridge, Mass., being world famous for fine lenses polished in this country. *Bottles* and *fruit jars* are machine-made, except the narrow necked bottles. *Pressed* glassware is often molten glass poured into a mold, the object being shaped by a lever. *Glass bricks* are being introduced in France as hygienic and easy to make; they are used in walls, pavements, floorings of bath rooms and hospitals, laboratories, etc., as they are free from chemical taint, moisture, or dust. They are attractive.

GLUCOSE. The commercial use of this term is restricted to the sugar syrup resulting from treating starch with sulphuric acid. Water acidulated with one per cent. of sulphuric acid is boiled; a hot mixture of starch and water is allowed to flow into it and is boiled for about 30 minutes. Chalk is then added to neutralize the acid and settles as sulphate of lime. The clear liquid is drawn off and is used as syrup, or evaporated to grape sugar. As such it is only one half as sweet as cane sugar. Glucose syrup is used as table syrup, in brewing, in the manufacture of cheap candy, and for bee food.

GYROSCOPE. A term whose meaning has wonderfully expanded within two years. Originally it was an instrument exhibiting various properties of rotation, first described by Bohnenberger (1817); the inventor is not known. Its principle is that if a mass be set in rotation about its principal axis of inertia of greatest or least moment, it will continue revolving about it, and, unless force is applied, the direction of the axis will be unchanged. This has been applied to railroading and seems likely to revolutionize that important industry. It is claimed to render possible the monorail, which has so long puzzled inventors, the spinning gyroscope within the car preserving the equilibrium when running straight or automatically when rounding curves; a simple definition being that a spinning top placed at an angle of 45 degrees to the floor will rise upright on the point of equal friction. As the car nears a curve its centrifugal action tends to throw it outward, but by a simple application of the top idea, the spinning gyroscope forces the car back to its level. There have already been used cars 40 feet long, 10 wide, 13 deep, carrying 15 tons in freight or passenger, and weighing 22 tons. The two gyroscopes were three feet six inches in diameter, weighed one and a third tons, and made 3,000 revolutions a minute.

HEAT and VENTILATION. Twin necessities in sanitation and engineering in buildings. Artificial heat brings a demand for ventilation. Where natural heat exists ventilation is effected by loosely constructed buildings specially designed to admit air, reinforced by the more open life led by the average individual. In colder latitudes heating becomes necessary, but without corresponding ventilation proves an unmixed evil. Heating is to produce an even, moderate temperature; ventilation is to secure a constant supply of fresh air to displace the air swiftly polluted by man, machinery, fabrics, etc. The English standard of moderate heat is 60 Fahrenheit, in the United States 70 Fahrenheit, the difference being due to the more humid and more uniform climate of England. Fuel is generally used for heating; coal and wood, some little gas and oil, with heated air, steam or hot water circulated from main centers in which fuel has generated the initial heat. Heat is communicated by direct or indirect radiation. Direct when obtained from stoves, fireplaces, furnaces, or when hot water, air, or steam is conveyed to radiators by pipes. Indirect when air is heated, passed over some centrally heated surface, and then forced into the rooms, etc., of the buildings. Direct radiation simply heats the air already in the room; indirect radiation brings in new air, previously heated,—thus being a means of ventilation as well as a medium of heating. Fireplaces heat by the direct method, the heat passing from the center of combustion in straight lines until deflected; thus an open fire may warm one side of a man while the other is still cold, until the entire air in the room has been warmed. Much heat passes up the chimney. With stoves standing out in rooms much indirect heating also obtains by air passing over the heated surfaces. Up to 30 years ago most of the heating of the United States houses was by heated air from a furnace; fuel produced the heat, fresh air was automatically supplied from out of doors, passed into the furnace, and so through the flues to the "registers," or gratings, in the floor or walls. Then heating by hot water was introduced, and practically supplanted the old furnace in factories, apartments, and large dwellings, churches, etc. The hot water heating system was introduced into England in 1816 by the Marquis de Chabonne, and was in use in Canada long before the United States fell into line. Benjamin Franklin invented a cast-iron open heater projecting into the chamber, radiating heat from back, sides, and top, as well as the front (1744); the cast-iron box stove appeared (1752); the first base-burner (1830) marked the beginning of the steady advance to the present perfection. Franklin (1744) probably introduced the hot-air furnace to supply pure heated air to rooms, and early in the following century this was

developed, the first furnace in New England being at Worcester, Mass. (1835). The method of heating by hot water was known to the Romans, but with the fall of Rome became a lost art. The open fireplaces are attractive, cozy, and cheerful, but only produce 10 to 25 per cent. of heat from a given combustion; they induce dangerous draughts by drawing air from windows, doors, etc., to the chimney; the stove radiates heat but exhausts moisture in the atmosphere, and does not change the local air; furnaces bring fresh air but it is necessarily dry, and with the shutting off the heat in a sufficiently warm room, ceases also the supplying of fresh air. Water and steam radiate heat, bringing no change of air, no moisture. Gas heating must be closely watched because of the minute unconsumed particles of gas which escape into the atmosphere to join with the escaped gases deleterious to human health. Heating by gas is less expensive than by electricity, but gas, at $1.00 per 1,000 feet, makes it cost 5 to 12 times as much as heating by coal. *Ventilation* considered apart from heat is a matter greatly misunderstood. To open a window only at the bottom, and on one side of the room is simply to pack the lighter, heated, impure air up to the ceiling by the influx of heavier, purer, colder air; windows should be opened top and bottom, and where possible on opposite sides of the room. The drawback to relying on window ventilation is that in cold weather it is frequently ineffectively done. It also has no effect on the quality of air introduced, giving no purer air than the surrounding atmosphere. Therefore ventilation should be made a vital force in modern buildings. Normal air contains 20.9 oxygen, 79 hydrogen and argon, and 0.1 per cent. of other substances including carbonic acid; after passing through the lungs there is 16 oxygen, 79.5 hydrogen, and 4.4 carbonic acid. Diminished oxygen lowers the vital principle in the air supply rendering serious disturbances possible, and the burning of gas, oil, and many other illuminants also decreases the oxygen. Each person in a room should receive at least 30 cubic feet of fresh air per minute.

CASTING PIG IRON.

For the removal of foul air there are used exhaust fans, blowers, propellers, and pumps placed in air-ducts, either forcing or creating vacuums. In several up-to-date factories the air is now automatically changed every three minutes.

INK. Any colored fluid used in writing or printing. Of great antiquity, generally of ivory black, lampblack, or sulphate of iron mixed with gall products. The liquid of the cuttlefish is reported by Pliny and Cicero, and the inks of the ancients were of red, purple, green, gold, and silver. Up to twenty years ago writing ink was made from sulphate of iron, gum, and water; to-day it is more largely an anilin product. A fountain pen ink is made from nigrosin, an anilin product. Red and other colored inks are obtained by dissolving the dye in alcohol, adding distilled water, and heating until the alcohol passes off, adding a small amount of dissolved gum arabic to give body. *Copying* ink has dextrin, or gum arabic, in quantity added to ordinary ink; and *indelible* inks contain India ink. Many fluids form *colorless* or *secret* inks which become legible under heat, or chemicals. *Ink powders* are dry ink. *Printing* ink is a pigment of lampblack mixed with linseed oil or turpentine; other pigments being used for other colors. Ink should distribute freely, dry quickly, and be proof against time or chemical reagents.

IRON. The most common ore of iron is the oxid known as hematite. The iron is reduced to a metallic state by the addition of carbon, and exposure to great heat, which drives off the oxygen in the form of carbon dioxid; the metallic iron melting, and being drawn off into troughs forming it into masses of pig iron. At first charcoal was used for carbon, and the first great advance was the use of the forced draught invented by Lord Dudley (1621). Coke was used by Darby (1750) in place of coal; puddling and rolling, which changes cast iron to wrought iron, was introduced by Henry Cort of England (1783-1784) and also the reverberatory furnace with concave bottom to receive the iron from the smelter during the process. Neilson of Glasgow devised the hot air blast (1828), reducing the cost of smelting. Pig iron cannot be rolled or hammered until it has been remelted and the impurities of carbon, silica, etc., removed; the wrought-iron res-

STEEL MILL. Pennsylvania.

idue obtained can be rolled or hammered. *Galvanized* iron has undergone no change in process since Crawfurd (1837) demonstrated how to melt zinc, previously coated with dry sal ammoniac, and then plunge the iron into the bath, guiding it by submerged rollers. *Bessemer Steel* is iron and carbon, standing midway between cast iron, which contains more carbon, and wrought iron, containing no carbon. Steel is made by abstracting only a part of the carbon from cast iron, but abstracting all impurities. The discoveries of Henry Bessemer of England (1855) rank as the most important in metallurgy. The converter is bottle shaped, 15 feet high, 9 feet in diameter, made of iron lined with protecting material; it has a slanting neck with an opening at one side, and holds 8 to 10 tons of melted metal; it is emptied by turning upon trunnions by gear wheels. Through openings at the bottom and nozzles, or air pipes, streams of air are injected into the red metal to burn out the carbon and silicon, then ferromanganese or spiegeleisen is added to remove the sulphur and iron oxid, and the fluid mass is ready for casting. The Bessemer process cheapens the cost of all manufactures of steel. *Open Hearth Steel* takes several hours to make; Bessemer only fifteen minutes, but the Open Hearth process produces a finer, more uniform quality, and is recognized as the best steel made. Cast iron is melted with wrought iron, iron sponge, iron oxid, or scrap steel, in a reverberatory furnace heated with gases, ferromanganese or spiegeleisen being added at the close of the process. The best known process is the Siemens-Martin. *Armor Plate* is made by three processes: (1) enormous rolls formed direct from huge ingots; (2) by hammering steel into plate form by steam hammers weighing 125 tons; or (3) by hydraulic press forges squeezing the iron into shape under 14,000 tons' pressure. The latter process makes the Harveyized steel armor plate for United States ships. In shaping, there are used planers and rotary saws to trim metal weighing 125 tons. Cementation and hardening by the "Harvey" process (1888-1891) consists of imbedding the face of the plate in carbon; protecting the back and sides with sand, heating nearly to the melting point of cast iron, thus hardening the surface. One of the most recent valuable additions to handling iron is the clearing away of tangled iron wreckage, and of cutting and brazing all commercial work by the *oxyhydric* process. It is based on the chemical attraction between iron and oxygen which makes iron burn freely in an oxygen atmosphere. Two nozzles, terminating in a single nozzle, deliver mixed oxygen and hydrogen to preheat the metal to any desired temperature, generally 1,300 to 1,500 degrees Fahrenheit; this being attained, without movement or delay, a stream of pure oxygen is directed, acting as a cutting tool oxidizing without melting, the oxids formed being blown away by the force of the blast. Four feet of solid metal can be cut in four per cent. of the time hitherto employed. A

circular outline was made on 9-inch chrome nickel steel, and the linear foot speed of the cut was two and a quarter seconds. The apparatus consists of two steel bottles containing oxygen and hydrogen, the pressure gauges, mixing chamber, nozzles, and armored tubing to carry the gas. Bottle pressure is 1,500 to 2,000 pounds per square inch. With all tremendous modern improvements it remains a fact that the historic Damascus steel, in the sword blades of that period, has not yet been equaled as an artistic product.

LACE. An ornamental fabric of linen, cotton, or silk threads, made by hand or machinery, with a vast distinction between the two products. The earliest mention of lace is in the fifteenth century, a gradual evolution from the much older art of embroidery. Handmade lace is of two kinds, point lace, which is made with a needle, and pillow lace, made with bobbins on a pillow. The machine lace gives a more or less close imitation of each variety. In point lace a thread is stitched along the outline of a pattern on paper, parchment, or cloth, and the intervening space is covered or connected with intervening stitches, the operation being a species of team work; the design is also pricked out on paper from a drawing. Pillow lace has the paper pattern attached to the pillow, pins are stuck at regular intervals, and the threads of the bobbins are plaited around them, forming the network arrangement always seen in pillow lace. Many patterns are made in strips, and so deftly united that detection is almost impossible. One reason advanced for the sustained high price of old laces is that they were made by "hereditary fingers," the result of several generations of exclusive lace workers; the French Revolution and several wars decimated the lace workers, diverted them from their craft to coarser work, and this, with the loss of most of the old established "patterns," makes the lace of the old régime unique, always distinguishable from the best of the modern product, and priced accordingly. The lace machine is complicated, and while adequately reproducing the patterns it curiously lacks the individuality and personality found in the older handmade lace. Irish lace has for some time had a vogue, but is too coarse in pattern and texture to be rated with Honiton, Duchess, Valenciennes, etc.

LEATHER. The skins of animals of which the texture has been made permanent. Skins are of two parts,—the outer, on which the hair grows, and the inner true skin, or corium, of gelatinous fibers, which under treatment, is the basis of leather. In tanning the gelatin is combined with tannic acid, and by a later process with chromium salts; in "tawing" it is united with mineral salts; and in "shamoying" it is combined with fatty substances. At the tanneries the condition of the hides causes the preliminary process to differ slightly, but skins are soaked and the flesh scraped from them; hung in heated rooms to loosen the hair for detaching, in making sole leather, but for dressed leather the roots are dressed with milk of lime. After the hair is removed the skins are placed in a decoction of pigeon or dog dung and water, called "bating," which makes them soft and pliant, and are then tanned by placing them in a pit between layers of oak bark, or other materials, and plenty of water. This process is hastened in various ways, many other ingredients are now used, the chrome process saving millions of trees annually; it was invented commercially by Augustus Schultz (1884), and only takes a few hours to cure a skin. Tawing is the use of antiseptic dressing to prevent decay, and shamoying is cleansing skins with lime, dressing with bran to remove the lime, and, while wet, they are oiled with fish, seal, or whale oil, to make them pliable. The most costly is piano leather, made principally from the skin of the American gray deer found near the Great Lakes, a German family holding the secret of its process. It is used exclusively for the piano hammers of the highest grade instruments. Leather made by the North American Indians has frequently been declared equal to the best modern production, and the Kaffirs of South Africa excel in curing skins so that water does not make them hard, but leaves even horsehide as soft as chamois leather. They clear the skin of flesh and fat by bundles of mimosa thorns arranged like toothpicks, and then work in a little grease and punk from the guarri-wood tree. Relays of six men keep the skin constantly kneaded over their knees and elbows for twenty-four hours; the skin is then stretched to cool, is again worked for six hours, cooled, and is ready for use. Chinese leathers 4,000 years old are soft and pliable as new. Varieties of leather are: Morocco, made from goatskins with sheepskins used as imitations, dyed on the outside grain and having a rough granulated surface given by contact with engraved boxwood balls; Russia, with its pleasant smell of the birch bark used in tanning; Japanese varieties in patent or enamel leather, prepared by coating the flesh side of skins with lampblack and linseed oil, then varnished with linseed oil, Prussian blue, and turpentine; the leather is scraped with pumice stone and dried in a moderate heat for three days, the process being completed by ten hours' exposure to the sun. Better patent leather is now made from the chrome process. Skins used in leather are those of the cow, ox, calf, buffalo, horse, sheep, lamb, goat, kid, deer, dog, seal, hog, walrus, kangaroo, and alligator. Walrus hides are used for buffing wheels; hogskin for saddles, etc.; dogskin for gloves, and cowhide

ELECTRIC LOCOMOTIVE. N. Y., N. H. & H. R. R.

for boots and shoes. Scraps are treated with fluids to form a paste that is pressed into molds for combs, buttons, etc.

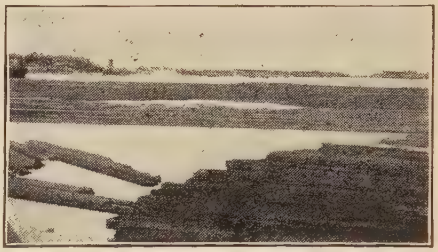
LITHOGRAPHY. The art of surface printing from stone or metal. A greasy ink is used to make a reverse drawing on what is known as a "lithographic stone," a variety of porous calcium carbonate. When the design is finished the stone is transferred to the flat bed-press, and a water roller goes over the entire stone before ink rollers are applied. Otherwise it is the usual form of printing. The water is rejected by the ink, but imparts a desirable finish to the stone where there is no design. The moist surface repels the ink while the greasy design takes it readily. Smooth stones are used for patches of solid color, but if varied tones are needed, it is roughened; light and dark tints being controlled by the use of a grease pencil on the tiny, roughened points. Zinc and aluminium have been successful substitutes for the lithographic stone, which is heavy and expensive, zinc being limited to the coarser type of work. An aluminium rotary press, printing one side of the paper from a sheet of metal bent round the cylinder, is rapidly superseding the flat bed-press. *Chromolithography*, or color printing, is done by transferring to the stone a tracing of the artist's picture, giving the outline and form of all shadows and distinct patches of color. From this many proofs are pulled on a coated transfer paper; as many proofs as there are colors required are grained, and each color is drawn on a separate proof, great care being taken to represent exactly the amount of each color in the original, so that all the printings together shall reproduce the original. *Photolithography* is printing pictures from stones on which line or stipple drawings have been produced by photography.

LOCOMOTIVE. An engine and boiler mounted on wheels, capable of self-propulsion along a track, specifically a railway engine. The first one was for use on roads, the prepared iron way coming later. The gradual steps progressing to the modern engine are fairly well grasped, or may be found in detail in scientific handbooks. The developments between 1890 and 1900 were stupendous, the weight on the drivers increasing from a maximum of 65,000 pounds to 105,000 pounds in passenger engines, and as high as 135,000 pounds in the ten wheel type. The heating surface has increased from 2,200 to 3,000 square feet, and the grate area from 30 to 36 square feet. The result has been greatly increased speed, attaining 105.75 miles an hour for a space of seven miles, and the Empire State Express drew six cars, weighing 261 tons, seven miles at 103.35 miles per hour, in a total run of 80 miles averaging 67.60 miles per hour. This is, possibly, the highest horse power developed in the passenger service In general the move has been to larger locomotives. Then electricity appeared as a power factor. The New York Central Railway followed the lead of the Baltimore & Ohio Railway, and installed electricity as a

power from High Bridge to the metropolitan terminus, to obviate smoke, etc., in the unavoidable tunnels and it has proved so satisfactory that many regard it as the beginning of the end of steam power on railways. This year a large 175-ton freight locomotive has been completed for the New York, New Haven & Hartford Railroad, to run by electricity and test thoroughly the advantages of electrically handled freight, and also heavy passenger traffic. The motors are placed above the axles, raising the center of gravity and reducing shock to roadbed and strains to track. It is mounted on two trucks, one pivoted on a center pin, the other having a lateral movement as well as a pivotal movement, permitting it to negotiate all curves. Four 350 horse power single phase motors are used, operated either by the 11,000 volt alternating current, or the 600 volt direct current. Flexible connection between the power and the wheels is established by gearing the motor to a quill on the axle, which is provided with driving arms projecting between spokes of the wheel; these arms being connected with coil springs which absorb shocks and strains of transmission, and equalize the gears. It has a guaranteed hauling capacity of 2,000 tons and a guaranteed speed of 45 miles an hour with a full load, which means from 75 to 100 loaded freight cars. The supremacy of the old style steam engine is seriously threatened by the low pressure turbine as demonstrated at the New York subway power station, where an increase of 30 per cent. of total horse power has been effected, at the same time gaining an increased economy of 25 to 35 per cent. The old high pressure exhaust was extremely wasteful, and the invention of the compound engine logical. Then followed triple and quadruple engines, the limit of expansion being reached when the low pressure cylinder became too big for practical purposes. There the turbine comes in. The reciprocating engine working on the higher ranges of pressure, and the turbine working on the lower ranges, are the complements, the one of the other, and when acting in combination form an ideally economic arrangement. The range of application is very wide, and there will be saved an enormous amount of heat and power now lost in reversing rolling engines, winding engines, and in power houses of industrial establishments, where it will be possible to run an addition to the works on the power recovered between cylinder and condenser. The largest steamships in the world, now under construction, will embody the same combination in their engine rooms.

MOUNTAIN LOGGING.

LUMBERING. Trees are felled by sawing part through, and then chopping in the direction the tree is desired to fall; it is trimmed of branches and the trunk cut into lengths by crosscut saws. Trees remote from waterways are cut into logs and drawn to the mills; rail or water, and in some remote sections flumes, are employed. These are wide wooden ditches, or troughs, through which water is directed, either a mountain stream or by pumping; the water rushing down to find its own level, carries the logs also. One California flume is 53 miles long, with 18 branches, needing only two men to transport 400,000 feet of lumber a day. In the South small locomotives are used, and in Michigan roads of smooth ice are made, and the lumber easily dragged by horses. On the waters enormous cigar-shaped rafts are built to float with the current or be drawn by steamboats to the sawmills, or the markets. One of the oldest sawmills in the United States is at Lewiston, Me. (1770); several times destroyed by fire, but now a magnificent plant. Logs are sawed into lumber by circular or rotary saws, or by a number of up and down saws known as a "gang"; the mills are run by steam or water power. There are many portable sawmills which can be located where desired; heaps of sawdust locate their visit. When cut the lumber is planed, the rough edges taken off, and the boards matched, tongued, or grooved by machinery. There are machines for window sashes, wood molding, tenoning, mortising, boring, band and swing saws, sandpapering, and carving, there being little handwork in modern finished lumber. This has revolutionized interior decoration, placing artistic carving and scroll work within reach of almost every one. Lumber is also seasoned artificially, thus avoiding its lying idle for long periods at compound interest, and



TIMBER FOR EXPORT.

this still further reduces the cost of decorative work. The principal lumber trees in the United States are the white pine (now very scarce) from New England, New York, and along the Great Lakes to Minnesota; spruce from New England, New York, and the Rocky Mountains; hemlock from white pine districts; cypress from the Gulf Coast and the South Atlantic States, only recently discovered to be of any vital commercial value; southern yellow pine from the Gulf of Mexico; western yellow pine from the Rocky Mountains and the Pacific Coast; red fir from western Oregon and Washington; redwood from California; and the hard woods of oak, poplar, maple, elm, and ash, from interior states. The world's supply of pine (white especially) seems doomed to extinction. Improvements in sawmill machinery are the direct steam-feed, the log turning device, endless chains, mechanical carriers for lumber and refuse, the shingle, lath, and slab saws, and the planing, molding, matching, and flooring machines.

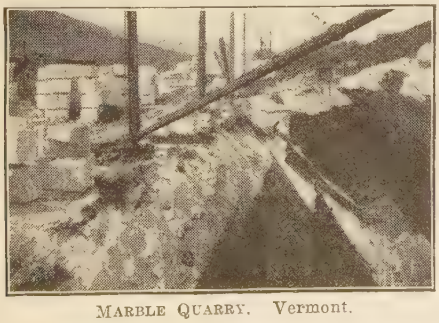
MATCHES. Splinters of wood, dipped in fused sulphur, and ignited by the flint, steel, and tinder process. The *Lucifer* match (1827) had the sulphur tip crowned by dipping it in a mixture of sulphuret of antimony, chlorate of potash, powdered gum, and water; this ignites when rubbed against rough surfaces. The *Phosphorus* friction match appeared in Austria and England (1833), and was made in Springfield, Mass., by Alonzo Phillips (1836). The *Safety* match (1855) simply transferred the phosphorus from the tip of the striking match to the side of the box, mixing it with sand and glue; thus the match would not strike except on a phosphorus laden surface. The wood employed is seasoned pine, 17,000,000 matches being cut and dipped daily by machinery, as against a possible 8,000 by hand. The cutting machine rotates the bark-stripped lumber, cutting even slices as one peels an apple; these are later subdivided into match sticks; twenty-four are cut, and set for dipping at each revolution; passed to a paraffin dip (or sulphur, as the case may be), and to the dip for the striking head. The *Parlor* match strikes anywhere, and has a head composed of glue, phosphorus, chlorate of potash, powdered glass, vermilion, or other dye; its sale is prohibited by law in New York City, by reason of the many fires caused by its head flying ablaze into curtains, etc., when being struck. The old *sulphur* matches, made in the form of a comb, are still in use in New England. *Wax* matches are made by plunging threads of cotton into melted wax until any desired thickness is acquired, then cut into lengths and headed.

MINING. The delving of metals from the earth, existing from the earliest times. *Prospecting* is the searching for deposits of ore by examination of the surface and surroundings; samples obtained are assayed, and the probable value of the "find" estimated. *Staking claims* is a legal step to secure protection; consisting of marking out a patch of ground, varying in area according to the individual State provisions; averaging 1,500 feet along the vein, and 300 feet along either side, in most western states, and in the east a square 1,500 feet. *Working* a claim is developing it either by surface clearing, or by digging down into the

ground forming a *shaft* and its corollary of passages, or tunnels, which follow the "lead" or direction of the vein; these passages are properly "timbered" to replace the natural support of the earth, ore, or water taken away; there must also be adequate ventilation. As the passages extend small trucks bring the produce to the cage or elevator which carries it to the surface. In *placer* mining the loose gold is washed from the gravel, sand, or mud, containing it, and in the *quartz* mining the rock is *crushed* and *stamped*, and treated

GOLD DREDGING.

by the cyanid or by the chlorin process. The cyanid process consists in the use of a weak solution of cyanid of potassium when oxygen is present, while the chlorin gas is used after the ore has been pulverized, roasted, and moistened in tanks. A great amount of electrical machinery is now used in mining operations, and has practically revolutionized the industry within a limited period. *Silver* occurs in quartz, mixed with lead in granite, in galena, or mixed with iron; the general features of silver mining resemble those of gold. The United States yields the greatest amount of silver and has the richest silver mine discovered in the world, the Comstock. *Copper* ore is smelted in a converter lined with crushed quartz mixed with clay into which air has been forced; this unites with the sulphur, and the oxygen carries it off as a gas; iron unites with the quartz, leaving pure copper. *Coal* is mined according to the level of the coal bed veins. Coal is *anthracite*, or *bituminous*, or *lignite*, of many varieties, varying in the amount of carbon contained, this governing the speed of combustion and the initial heat obtained. The anthracite coal is blasted loose and then quarried; taken to the "breaker," where slate and other impurities are removed, and the lumps graded according to size; small boys pick out the impurities, and there are machines so delicately adjusted they distinguish between the coal and slate by weight. *Bituminous* mines are entered by "drifts," or entryways parallel to each other, divided by a wall of coal, which is broken down and sent to the surface. *Quarrying* is mining for marble or stone. The first marble quarry in the United States is said to have been at Dorset, Vt., in 1785; Marbledale, Conn., opened in 1800; Stockbridge, Mass., in 1802. The largest are at Rutland, Vt. Marble produced annually in the United States exceeds $4,000,000 in value. *Marble* is a crystalline rock of lime, or lime and magnesia carbonates. There are many gradations and varieties in



MARBLE QUARRY. Vermont.

texture, capacity to "take polish," and color. The best American deposits are in Vermont at West Rutland, Proctor, Brandon, etc.; at Lee and Pittsfield, Mass.; the marble for structural work coming from St. Lawrence and Westchester counties, New York, Maryland, and Georgia; black marble was once quarried at Glens Falls. Nearly 80 per cent. of monumental marble comes from Vermont; the marble for furniture tops, and interior decoration, is largely from Knoxville, Tenn.; white and gray marble from California; the verde marbles from Pennsylvania, and the wonderful onyx from Arizona, Colorado, and California, not true onyx but travertine, found in caves, or formed by the action of calcareous springs. Ornamental marbles are largely imported; the Black and Gold from Italy, the yellow and red clouded Brocatelle from the Pyrenees, the white Carrara from Italy, the Giallo antico, a yellow type, and Griotte, a bright red, from the Pyrenees, although some of this is found in Vermont. Structural marble sells at $1.50 to $4.00 per cubic foot, statuary marble from $12.00 to $15.00. The fossil trees much used in decoration have the wood cells replaced by silica of various colors, preserving the wood to a remarkable degree, and giving beautifully colored surfaces capable of taking a high polish. This silication was probably accomplished by hot alkaline waters carrying dissolved silica; there are usually evidences of volcanic activity in the region. The fossils are found in Maryland, south of Baltimore, along the bay front; in the Bad Lands of the Little Missouri; in the valley of the Yellowstone; in California, and in Great Britain, Prussia, Egypt, and Antigua in the West Indies. There are many forsaken granite quarries in the United States and many of these are being re-utilized by crushing the granite into meal and shaping it into cement bricks, urns, bowls, and for general building purposes. This granite is the "split blocks" which had been rejected as useless.

NAILS. Until the close of the eighteenth century all nails were handmade. France has used wire nails for

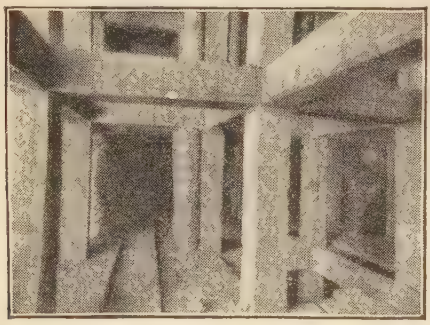
PETRIFIED FOREST.

over a century, but until 1850 they were made by hand. The metal was placed in a vise with a piece projecting, and this was hammered to form the head, a counter sunk in the vise regulating its size and shape. The metal was nail rods, obtained by rolling malleable iron into small bars, or by cutting plate iron into strips with rolling shears. In colonial days nail making was a household industry among farmers. The United States made the first nails by machinery, the only early device patented being one by Ezekiel Reed of Bridgewater, Mass. (1786), the herald of many inventions, the products of which were received with enthusiasm in England and Europe. In 1833 cut nails were first made of steel. Wire nails came into use in the United States through William Hersel of New York (1852); Father Goebel came from Germany to Covington, Ky., introduced wire nail making, and established the American Wire & Screw Nail Co. (1875). At the Centennial Exhibition the American product was placed ahead of the French and German nails, and attention was attracted to the industry. In ten years 23 firms were in business, and it has steadily increased. American wire nails are now exported to all parts of the world. The mechanism is simple. The wire is stretched tight by gripping dies, it is cut, automatically pointed, and headed, by means of spring bolt mechanism operated by a cam of the main shaft and remaining inoperative until a sufficient length of wire has been fed for the next nail. The cutting and pointing are one operation, and the head is produced by steady pressure instead of intermittent striking.

NEEDLES. Were evidently used during or before the Stone Age, but the Chinese first used metal needles, which were brought into Europe by the Moors. There was a well established industry at Nuremberg in 1370. Subsequent developments produced the needle with the "eye," and the machines for their manufacture. The first drill-eyed needles were made in 1826. Fine steel wire is cut into "blanks," as long as two needles and

slightly curved from the winding on a coil; they are bundled, heated, and pressed straight; ground sharp at each end on two small grindstones, and a flattened space made in the middle by a stamping machine, alternated with the die cutting the eye. The series of two needles are then separated, polished, tempered, and the heads ground into shape. Machine needles have special modern machinery which varies somewhat in detail, but the result is the same, the variations producing the sewing machine needle with the eye in the point, the curved surgical, and huge sailmaking needles, the multiplicity used in machine shoemaking, leather work, upholstery, and the delicate needles used in stocking work, in which the latch is held in a rivet about one hundreth of an inch in diameter, between walls that are no thicker. Hand needles are chiefly made in England and Germany, while machine needles are manufactured in the United States.

NETS. An open fabric of cotton, linen, hemp, silk, or other material, whose threads cross at right angles,



MINE TIMBERING.

forming square holes or "meshes" of stated size. True nets have the threads knotted at the point of intersection, but others are crossed as in weaving or knitting. Net making is one of the oldest arts, and barbarians knowing nothing of weaving, understand netting for the capture of fish, and animals. Nets are made by hand and by machinery. Fishing nets most used are the trawl and the seine. The latter is a long, narrow net, one side weighted with lead, and the other buoyed by corks, the net thus hanging vertically in the water, and used to inclose a school of fish. The trawl is a drag net used for fish swimming near the bottom; its opening is stretched along a boom, or spar, and the net narrows to a fine meshed "purse" at the end. Nets are used to catch birds, and also quadrupeds; also by gardeners to protect fruit, etc., or to protect blossoms on trees from frost. Hammocks are spread nets having a center pocket.

OILCLOTH. A coarse canvas coated on both sides, and half saturated with thick oil paint. The base is jute or burlap, sized by glue, rye flour, etc.; rollers squeeze out the surplus sizing, the cloth is dried, and rubbed smooth by pumice stone applied by hand or rollers. The paint and pattern are applied, and the surface again smoothed, the number of paintings and smoothings being determined by the quality of the fabric. The color is applied by a pattern carved on wood blocks, a separate block for each color. The cloth passed over a table, and under the blocks, which have a rising and falling motion given by machinery, the paint is dried by artificial heat, and the cloth varnished, trimmed, and rolled.

OILS. A great variety of liquids which are not soluble in water; derived from animal, vegetable, or mineral foundations, and cannot be strictly classified, but must be dealt with collectively as chemical substances. Their range of utility in Useful Arts is colossal. The *liquid* fats are the animal and vegetable products which saponify, containing stearin, palmitin, and olein and are such as cottonseed, olive, corn, linseed, and hard oils. Castor oil differs in being freely soluble in alcohol, and in glacial acetic acid, by reason of its large proportion of hydroxy-fatty acids; it is non-volatile and non-drying. The *lard* oils are animal oleins, also non-volatile and non-drying; *palm* oil and *cocoanut* oils are solid at normal temperatures. *Sperm* oil is a liquid wax. *Vegetable* oils are obtained by pressure, either under cold or moderate heat; the "*blown*" oils of the rape group have air forced through them, exchanging their sulphur for oxygen, thickening slightly, and becoming more valuable lubricants. The *animal* oils are principally lard, butter, tallow, and neat's-foot. Tallow from oxen and sheep, lard from the hog, and neat's-foot from the feet of cattle. *Essential* or *volatile* oils are liquids giving odor to plants ranging from attar of roses to turpentine; these are obtained by various processes, and are also synthetically produced from chemicals. *Hydrocarbon* oils are largely used as fuel, lubricants, and illuminants, and are obtained from petroleum, shale, and coal, with many subdivisional products of petroleum, ether, gasoline, naphtha, benzine, etc. Oils are used as food, in preparations of food, in soap, to produce motive power, heating and illuminating, in painting, perfumery, lubricating, as preservatives from weather, water, rust, etc., as flavoring agents, medicines, and in an ever widening circle of utility. Some idea of the wide scope of oil production may be formed from the following erratic animal and vegetable bases: , apricot, badger, belladonna, brazil nut, candle nut, chamois, chicken, cress, cucumber, dog, duck, goose, hare, hemp seed, horse chestnut, laurel, nutmeg, palm, poppy, reindeer, roebuck, Scotch fir, spruce, sunflower, sea kale, thistle, rabbit, wintergreen, the multitude of flowers and better known sources.

OLEOMARGARINE. Is an artificial substitute for butter, made from "oleo oil," tallow, and other fatty substances, mixed with coloring matter. First made by Hippolyte Mege of France (1869). The fat of animals is washed in warm water, then chilled and hardened in ice water. It is finely cut by machinery, melted in steam-jacketed caldrons, adding salt to "settle" it. The clear oil is syphoned to other caldrons, re-heated, and re-settled, and then cooled to crystallize the stearin. Under great pressure the oleo oil is separated from the stearin. The quality depends on the grade of the animal, and the parts of the body, employed. These fats are melted separately, mixed in certain proportions, piped to a churn, and melted butter, cream, or milk, and the coloring matter is added. After churning, the liquid oleomargarine is chilled and hardened by ice water, before it can crystallize, and is worked in a machine butter-worker, salted, and made up into rolls or tubs. The cheaper grades consist of low grade oils, stearin, cottonseed oils, churned with skim milk or buttermilk, and sometimes glycerin, to improve the appearance. The highest grades are made from pure oleo oil and neutral lard, obtained from the leaf and the back fat of the hog, with no cottonseed oil. Good oleomargarine is a clean, wholesome, nutritious food.

OSTEOPATHY. The treatment of disease by scientific manipulation, totally distinct from what is usually understood as massage. The theory held is that all diseases are caused by the displacement of some bone which causes obstruction of the flow of one of the human body fluids, or by the atrophy of some muscle producing pressure, with a corresponding result. Osteopathy revitalizes the part affected, by syphoning back the lacking blood, rendering the muscle flexible, and replacing any bone erring from its natural alignment.

PACKING. A term including the operations of slaughtering and marketing animals for food. Aided by the refrigeration process, the packing business has developed enormously, "fresh" meat being shipped to all parts of the world, instead of being limited to the old-fashioned, smoked, salted, and dried commodities. The "waste products" have been made exceedingly valuable; fatty portions become lard or commercial grease; bones and sinews become gelatin, glue, and fertilizer, and from the hoof and the hide to the horns, nothing is without value. The embryonic industry was founded in New England in the very earliest days; established in Cincinnati (1818); and spread to its present headquarters in Chicago. Economy of labor is the keynote. A hog is killed, passed on an endless chain through scalding vats and a scraper removing the hair; it is hoisted head downwards, disemboweled, beheaded, washed, trimmed, and sent to the "cooler." It produces four fifths meat, only a small proportion being sold as fresh pork. A profitable section is sausage, made from trimmings from all departments, said to be mixed with potato flour, water, and spices, and placed in casings made from the intestines, etc., all done by machinery. Two grades of lard appear, leaf lard taken from the fat surrounding the kidneys, and steam lard made from scraps taken from all parts. Individual killing of cattle, sheep, and hogs has almost ceased.

PAINTS. Consist of a body and a pigment, or coloring matter, mixed with an oil vehicle, and generally a drier, this being a compound of lead and manganese that takes up oxygen from the air and gives it to the

oil, causing it to harden. Pigments are made from minerals, vegetables, and animals; the principal oil used is linseed, made from flaxseed, the crude oil being settled for two or three months, and then filtered; when spread in a thin film it absorbs and combines with the oxygen in the air, forming a leathery, elastic substance termed linoxyn. Turpentine is the best solvent for oil paints, slow to evaporate, and oxidizing into a durable, elastic, resinous substance. Fireproof paints contain a pound of boric acid to the gallon, or an easily fusible glass in powder. White lead forms the basis of nearly all oil paints for buildings, etc., and gives them body or covering power. *Marine* paints either protect metal or wood, and any good anti-corrosive paint applies, or they are intended to prevent fouling. In the latter case oxid of copper, or a precipitation of a solution of common soap with some salt of copper, or an arsenical or mercurial compound suspended in tar, are all used, the object being to poison the organisms attaching themselves to the ship. *Water colors* are pigments mixed with water and a little gum or glue. *Kalsomine* is a mixture of ground chalk with water and glue and colors, and this is the base of the multitude of special compounds advocated for use in place of oil paints, or wall paper, in interior decorations. To obtain specific shades: mixing dark green and purple makes bottle green; white and medium yellow makes buff; red, black, and blue makes dark brown; bronze, blue, lemon yellow, and black makes dark green; white, medium yellow, and black makes drab; white, lake, and lemon yellow makes flesh tint; lemon yellow and bronze makes grass green; white and black makes gray; white and purple makes lavender; red, black, and medium yellow makes maroon; lake and purple makes magenta; medium yellow and purple makes olive green; medium yellow and red makes orange; white, ultramarine blue, and black makes pearl; white and lake makes pink; ultramarine blue and lake makes purple; orange, lake, and purple makes russet; medium yellow, red, and white makes sienna; white and ultramarine blue makes sky blue; blue, black, and white makes slate; vermilion and black makes turkey red; and white, yellow, red, and black makes umber.

PAPER. Its early manufacture is generally conceded to the Egyptians with the papyrus made from a reed, and Mexicans and others have used duplicates of that process, using other plants to produce a substance taking ink and color acceptably. The Chinese are credited with first making from fiber the web constituting modern paper. The Arabs learned it from the Chinese, and the Moors carried it into Spain; thence it spread to France, and much later to England, the first patent being taken out by Charles Hulyerd in 1665. It advanced rapidly after the Edict of Nantes sent many skilled French paper makers to England and America. William Rittenhouse of Roxborough, near Philadelphia, opened the first paper mill in the United States (1690); and a company was granted the sole privilege of making paper in the Province of Massachusetts in 1728. Up to the beginning of the nineteenth century, while machinery was used to reduce the rags to pulp, the formation of the sheet paper was entirely by hand, sheet by sheet. Louis Robert, a Frenchman, invented a machine to make paper in an endless web, but it was not used until developed in England by Henry and Sealy Fourdrinier, who sunk a fortune in perfecting the machine, and are justly recorded as the founders of modern paper making. Paper is made from cotton and linen rags, waste paper, straw, esparto grass, wood, cane, jute, and manila. The utility of paper pulp is infinite. It is waterproofed and pressed into rails; it is used in car and locomotive wheels in the form of calendered rye-straw board, the sheets of which are pasted, stacked, and hydraulically pressed to 500 tons or more; after other processes the final block contains 120 to 160 sheets, and paste, compressed to less than five inches; all resemblance to paper is lost, and in looks, grain, weight, density, and solidity it approximates fine grained metal. It is used because it withstands the shocks and violent vibrations to which wheels are subjected. It is made into matches, brush backs, frames, and is widely substituted for cheap leather goods. A few years ago an enterprising individual produced some very attractive leaf "tobacco" which was paper pressed into "leaves" and heavily impregnated with tobacco infusion. He wished to sell it to meet the demand for "light" leaves. *Papier-maché* is paper pulp mixed with glue, paste, oil, etc., then pressing the mass into molds; a higher grade being made by pasting sheets of paper together and subjecting to pressure in a mold. The beautiful casket, and other productions of China, Japan, and India, show its wide range of utility. *Paper hangings* or *wall paper* were used by the Chinese at a very early period, but do not appear to have been used in England prior to the eighteenth century, when they began to supersede tapestry and other mural hangings. At first the papers were imitations of the tapestries, etc., but independent designs were introduced, in which feature the United States has been very prominent. Bouler & Charden introduced the art (1790), but there were only four firms in the United States in 1844, when the Howell factory at Philadelphia opened. About that time the endless roll machine appeared, and the business prospered and developed. In Europe the most costly papers are still those that most successfully copy some other fabric. The Japanese are now introducing some wonderful lacquers, and grass-cloth papers, at reasonable prices. It is probable that the supply of paper pulp will come from bamboo in the future, and not from the northern forests. One firm in Formosa is now producing 600 tons of paper a month from bamboo fiber, and the supply of bamboo is enormous.

PEARLS. A gem produced by a grain of sand entering the shell of the pearl oyster, and irritating the mollusk until it coats the foreign substance with the secretion of pearly matter obtained by irritation. Advantage has been taken of this fact to open shells and insert substances to be transformed into pearls. The most important fisheries are those of Ceylon, Coromandel in the Indian Sea, and northern Australia. The oysters live at a depth of 50 to 130 feet, and the divers descend from small vessels of 12 to 15 tons, attended by a larger boat as a store ship. The best divers are Japanese, Filipinos, and Malays. Pearls are found along the coasts of Java, Sumatra, Japan, South America, and in the Mississippi, but the product has not the value of the Oriental pearl.

PENCILS. The colored earth or chalk of earlier days placed in a wood or metal sheathing to protect and give it stability. Later metallic lead was introduced, the present pencils being of graphite, called black lead, but which is nearly pure carbon. The best comes from Ticonderoga, and is 99.9 fine. Graphite is mixed with water and clay, the latter grading the hardness of the pencil; the mixture is ground, hydraulic pressed, and "formed" into a long coil; cut into sticks, baked, and placed in grooved strips of pine or cedar; the second strip is glued on and the pencils dried, trimmed, shaped, varnished, and stamped. Paper is used in place of wood casing, each individual band being consecutively removed in place of sharpening. The metallic cased pencil, for pushing up the graphite, was invented by Hawkins & Mordan (1822). Colored pencils are of tallow, wax, and coloring material.

PENS. The first pens were made from reeds, improving on the stylus. After paper came into use pens were made from the quills of the goose, swan, turkey, and ostrich; generally by the writer, although there were unsatisfactory machines. The first steel pens were barrel-shaped, a piece of steel bent into a tube and filed into shape, the two edges forming the slit. Later discoveries were made as to the best steel, machinery appeared, and the present type was evolved. The steel is annealed, polished, and rolled into sheets of varying thickness. The blanks are stamped or pressed into shape, and the hole at the slit punched; annealed again, and the blanks curved, plunged into boiling oil to temper, cleaned and polished in revolving barrels of sand or sawdust, ground at an emery wheel, and tempered in a revolving iron cylinder over a charcoal fire. The slit is made by special cutters and the pens are burnished and packed for market. *Gold* pens are made along similar lines, the native alloy of iridium and osmium being used to strengthen the points. *Fountain* pens usually consist of four pieces of hard rubber and a gold pen. The barrel contains the ink, and air is admitted as the ink is used, a feed bar taking the ink to the pen proper. *Stylographic* pens have no actual pen, but a tubular needle point in which is a graduated needle, holding the ink from flowing when not in use, but, by the pressure of writing, liberating ink as it is needed.

PETROLEUM REFINING. A natural rock oil of hydrocarbons found on the surface, but generally by deep wells. Tall derricks are the prominent features, otherwise the well is of orthodox type. The hole is about a foot wide at the surface, decreasing with depth; made by heavy steam worked drills. The crude oil flows into tanks, and by powerful pumps is forced through pipes to shipping points and to refineries The hydrocarbons are separated by fractional distillation. The crude oil is subjected to increasing temperature in cylindrical iron stills with domed tops

connected by vapor pipes; the oils pass off as volatilized but the separation is not absolute. The vapor rises to the condenser, and the distillates pass to separate tanks. After the volatile products are evolved the residue is subjected to a still greater heat, to separate the illuminating and lubricating oils. The distillates are purified by further distillation, and by treatment with caustic soda and sulphuric acid. Refined oils are tested for color, gravity, flash, burning point, etc.; too large a proportion of lighter oils renders them unsafe for illuminating, and too great a percentage of heavier oils interferes with free burning. Flash and burning points are regulated by law to minimize explosions. The cold test is used with lubricants to learn the thickening point. The many valuable preparations under *vaselin* are from petroleum.

PHONOGRAPH. A machine for recording and reproducing speech, or other sounds. Leon Scott invented an ellipsoidal barrel (1855), the sound receiver having one end open and the other closed, from which projected a small tube, across which was a membrane which supported a bristle forming a stylus, and vibrating with the membrane. A hollow cylinder covered with paper and lampblack was in position to be lightly touched by the vibrations of the bristle, and the sound vibrations entering the ellipsoid caused the agitation of the membrane and the stylus, which, as the cylinder slowly turned, registered a line on the lampblack. Thomas Edison (1877) substituted a receiving funnel for the ellipsoid, a metal stylus for the bristle, and a tin foil cylinder for the lampblack, later replacing it with a wax cylinder. The records were indented instead of traced, and could be reproduced by the passing of a blunt stylus over the indentations. In reproducing a record another diaphragm is used made of mica. The recording stylus is a sapphire with a cup-shaped front ground to a fine edge, but the reproducing stylus has a ball-shaped point. This stylus follows the track cut by the recorder, causing the diaphragm to vibrate and produce sound, which is intensified by a funnel. A record can be used several thousand times. The machine is run by a small electric motor, or a spring, at any speed, thus giving any desired pitch. The graphophone is on the same principles, but differs in mechanical details, using a wax-coated cylinder of pasteboard instead of an all-wax cylinder. It was invented by Charles S. Tainter and Chichester A. Bell. A possibly valuable innovation is the discovery of Poulsen, a Danish engineer, who uses the current in a telephone circuit to magnetize a strip of steel tape drawn continuously between the poles of an electromagnet, which is energized by the telephone current. The record of anything spoken into the telephone is stored in the tape magnetization, and when the tape is again drawn between the poles of the electro-magnet, the telephone in the circuit will repeat, owing to currents induced by the steel tape, whatever was originally spoken to it. Thus a business man, not answering the phone, could have a message left for him to be delivered when he returned; the fact that such a message awaited him being announced by a tiny semaphore, or other suitable device.

PHOTOGRAPHY. Permanent pictures produced by focused light thrown on a sensitized film or plate. The success is dependent on the sensitiveness of certain silver salts to actinic action, and on the correct optical principles involved in the construction of the camera. The coat of sensitive salt emulsion on the film or plate receives the focused image, and is "developed" by the use of pyrogallic or other reducing agents, and then "fixed" by dissolving and taking away surplus silver salts by the use of sodium hyposulphite. From this "negative," positive prints (photographs) are made on sensitized paper and other substances. There are many varieties of photography. *Carbon* printing is an addition of lampblack, etc., to obviate fading, the process being discovered by Mungo Pouton (1838); improved by Becquerel and Poitevin of France (1855), and by Fargier, Swan, and Johnson. *Celestial* photography deals with astronomy; Prof J. W. Draper photographed the moon (1840); Prof. Bond (1851); the spectra of the stars (Draper, in 1872); the nebulae of Orion (1880-1881); the photographing of the entire heavens by the Photographic Congress of the Astronomers of the World beginning 1887. The camera shows many stars, etc., not visible by telescopes or refractors. The development of the present rapid process dates from the *Dry Collodion* process of Scott Archer (1851), outlined by M. LeGroz of Paris; collodion was sensitized and poured over glass plates to form a film; pyrogallic acid or protosulphate of iron "developed," and cyanid of potassium or hyposulphite of soda "fixed" the negative. *Dry Plate* photography was invented by Dr. J. M. Taupenot of France (1855); the alkaline developer (1862); improved by Russell, Sayce, Abney, Rev. Canon Beechey, Prof. J. W. Draper, and the Eastman-Walker Company of Rochester, N. Y. Its development made extensive amateur photography possible. Other passing phases were the *Daguerreotype*, named after the French chemist discovering the process, who (1839) sensitized a polished silver plate with silver iodid, developing the image by mercurial vapor, to be "fixed" by the discovery of Sir John Herschel (1839), of the action of hyposulphite of soda. Hunt introduced iron protosulphate for "fixing" (1844). *Ambrotype* displaced the *Daguerreotype* and was a thin negative by the collodion process, backed by black velvet or varnish. *Calotype* or *Talbotype*, devised by Talbot (1841), was sensitized paper obtained by dipping in solutions of common salt, of silver nitrate, and later washed in iodid of potassium, in silver nitrate, and in mixed silver nitrate and gallic acid. Talbot began using his papers as negatives for printing, but Sir John Herschel introduced the glass plate, and (1842) invented the blue print. The most modern development is *Color* photography in which great strides are being made. Briefly it is the taking of one photograph seen, separately, on three plates of (primarily) blue, red, and green; the intensities of these being scientifically adjusted to produce any desired color effect. The correct intensity of the silver deposit is the great stumbling block to date, and the process becomes very expensive, mainly through the spoiling of many plates, rather than by the mechanism, etc., employed. *Half Tone Engraving* consists in copying a photograph, the image of which passes through a fine screen of wire, to the lens of the camera, and to a sensitized metal plate, producing a "stipple" effect that breaks the high lights. The screen mesh runs from 80 to 250 to the square inch, about 150 being the average used. The plate is etched by acid, which acts only on the raised spots shielded by the threads of the mesh. The quality of paper on which the half tone is to be used determines the mesh. The term "half tone" comes from the fact that half the tones are left in, and half taken out by the acid. *Photo-engraving* is making plates (from photographs) from which ink impressions for newspapers, etc., can be made. Gelatin, being insoluble when exposed to light in the presence of bichromate of potassium, is the base of the process. A picture is produced on a metal plate, and the blank spaces etched out by an acid. When the *dark* spaces are etched in *intaglio*, and become filled with ink in the printing, a *photogravure* results. The vast utility of photography is being daily demonstrated, especially in *phototopography* or the survey of regions from prominent points or from balloons in the construction of topographic maps, saving great time and much expense over the old method. The "speed" of the photographic shutter has so increased that an exposure of 1-42000 second caught flying insects for the moving pictures, and produced 400 successive phases of pistol firing, occupying one tenth second.

PIANOLA, or **PIANO-PLAYER.** An automatic machine sounding certain notes on a piano through the medium of compressed air, or other force; the notes being registered by perforations on what are termed *music rolls*. In the manufacture of these a "master roll," consisting of a sheet of strong, flexible cardboard about 14 inches in width and of a suitable length, is laid out in "bars," and is then placed in a recording piano at which an expert pianist plays in the ordinary manner, giving full expression, and technique. His performance is recorded by dots and dashes on the "master" roll. These "notes" on the "master" roll are punched out, making the stencil, and the roll is taken to a perforating machine where an exact copy is made, and the copy tried on an automatic piano for irregularities and inaccuracies, being double tested by a second musician holding the score of the original piece to catch dropped notes, or errors in time, etc., accidentally made by the first player making the "master" roll record. When found correct it is taken to the cutting room, where 24 duplicates are cut at a time. Each of these is tested for infinitesimal errors in the size of the perforation, and in the spaces between them, which might vary the tone or the duration of a note. This is done by placing copy and proof roll in a suitable box with a glass lid, lighted by electric lights, which, shining through, show if the perforations perfectly agree. The marks are then made indicating how the piece is to be played, the time, the loud or soft tone, and, being completed, the copy is put upon a spool by an exceedingly ingenious piece of machinery specially designed for the purpose.

PINS. First introduced into France and Germany in the fifteenth century, made by hand. John I. Howe

of New York (1831) invented a machine making pins with a solid head, instead of the twisted wire head, or the antimony and lead head. By hand seven men made a pin. By machine the wire is drawn taut, two cheeks seize it, a cutter cuts it, and a hammer shapes the head. As the cheeks go forward for another, they open, the pin drops, and goes head upwards to a point grinder, and from there to the cleanser to be boiled in sour beer, cream of tartar solution, and cooled in clean water. The "yellowed" pins are placed in layers on a copper pan and covered with grain tin; water is admitted, slowly boiled for half an hour, dried, and shaken in a leather bag with bran, to polish them. An ingenious machine papers the pins. *Safety* pins go through the same process, but must be bent, and the point sheath added. Glass and enamel heads are added separately. In *black* pins the wire ic coated with varnish, or is heated in a muffle until colored.

POTTERY. Its history is lost in antiquity. All varieties have been made from clay mixed with sand, flint, feldspar, chalk, alum, soda, and bone ash. The clay is ground with other ingredients in a mill. Open pieces, such as plates, are pressed; hollow pieces, such as pitchers, cups, and vases, are cast in plaster of Paris molds from the clay paste; dried and packed in great earthenware vessels called "saggars," which are piled in a kiln and baked; thus protecting from smoke and insuring an even heat. It is now "biscuit ware," without gloss and very porous, and is covered with glaze by dipping; lead glaze is most frequently used, being transparent and easily fusible. Decorations are put on either before or after glazing. Babylonian specimens show a glaze needing a heat of 3,000 degrees, but how they obtained that heat is a problem. In the finer pottery the details of manufacture become more delicate and complex, and the secrets are jealously guarded.

ROADS. Public highways between places, in the construction of which we have yet much to learn. The early roads developed with war and commerce, the Babylonians, Carthaginians, and especially the Romans, being the great road makers of the early days. The Appian Way (312 B.C.) is probably one of the earliest specimens of permanent road work. Where the Romans went they made roads. In Great Britain many of the best highways of the present were of Roman make, and the height and level is still ruled by the gauging stones of the Romans. For long years after the Romans, the later roads deteriorated, not being made of the same great depth (frequently three feet of concrete, stone, etc.), and the real permanent road making may be said to commence with the discovery of the McAdam, or macadam process, which was really responsible for the wide use of carriages in travel. Prior to 1800 there were very few United States roads which could even be termed "improved" from natural conditions, the one good turnpike being between Lancaster and Philadelphia, 68 miles long, made of bowlders rolled in, and the interstices filled with gravel and earth. Much later it was macadamized. Another toll road of that date was from the Shenandoah Valley to Kentucky, owned by the Wilderness Turnpike Company up to nearly the close of the last century. The advent of railroads dulled the call for good roads in the United States. Their care became almost local, farmers "working out taxes" by work on the road, instead of paying road tax and having the money applied by experienced road builders. Only the greatly increased population stimulated the care of roads. Then came the era of the bicycle and then the automobile. To-day, the call all over the country is for better and still better roads. The distinct feature of the macadam process was the substitution of small angular stones for the large round bowlders thereby avoiding the making of holes and "ruts" by the smaller stones and earth slipping away, the small angular stones being more given to piecing themselves together, and fitting in a stout, firm, but more or less elastic bed. State after state has taken up the question in the United States, and, although progress is slow, it is only a question of time when it will have the greatest area of good roads in the world. In Europe roads appeared along lines of march, or commerce; in the United States and Canada they were more frequently the development of Indian trails or wagon routes, having little regard for distances or grade; the modern requirements being primarily proper location, easy grade, and a smooth, durable surface. The only materials recognized in modern roads between cities, or places, is gravel, or what is termed macadam, which is broken stone; in England mainly a granite type, the pieces being about two inches in diameter. The road is built of these upon a hard, rolled surface of earth, the Telford process differing in covering the earth with large stones before applying the cut stone. The depth varies from four inches on a good state road at Bridgeport, Conn., to twelve or sixteen inches on state roads in Massachusetts. Other rock used is trap, limestone, sandstone, field stone and shale, ranging along that line of quality, iron bearing clay being esteemed as a binder to hold the layers together after the successive rolling. *Drainage* is an important factor and in building the road bed the road is slightly domed to enable surface water to run off. On the best kept roads men are constantly employed and are held responsible for individual stretches of territory; these men look all the time for depressions caused by wear, or a weak spot where water has accumulated; they "pick" the place loose with a small pickaxe, and carefully lay in new cut stone (or gravel according to the road) making it a trifle higher than the road so that traffic may work it in. After rain the water is at once let out of any standing pool by a pronged instrument scratching a leak; the "ruts" are constantly raked into the depressions and unceasing care is the price, and the only price negotiable, in obtaining good roads. This is a lesson which has yet to be learned in the United States; the engineers can build good roads, but there is rarely the money provided for their constant maintenance; rather are they permitted to slide from bad to worse, until a spasm of regeneration strikes in and then considerably more money is spent on the road than would have been called for to keep it in constant repair. Under the modern system crude oil is applied with great success, both as a road binder, and as a dust eliminator, the road gradually becoming hard and fairly impervious to water. It requires greater care in patching and repairing. *Gravel* roads are the intermediate between macadam and dirt, and the gravel should be screened from earth, a trench dug, layers of gravel inserted, four or five inches deep, well watered to "set," and then rolled; the upper surface being crowned, or domed, about 1 in 30. *Dirt* roads are most common in the United States and in new sections, and consist of removing vegetation, and rolling and raising the center to insure drainage into ditches provided at either side, this being more important in dirt roads than others. In certain districts of Florida the leaves, or spines, of the long-leaved pine are raked into the sandy road beds each October with marked improvement on roads that otherwise would be almost impassable during the wet season; salt hay is used for a similar purpose but decays more quickly. *Planked* roads were once common in the United States lumber districts, and were made of three-inch lumber resting on stringers. *Corduroy* roads were logs laid in ridges, like the ribs on corduroy cloth fabric, and were generally used in swamps, earth being laid on the top to reduce concussion. A necessary innovation in the United States is broad tires for all farm and heavy freight wagons; in England the farm wagon tires are four inches wide. Great advances have been made in road machinery. In cities *Asphalt* pavement is greatly used in place of the old Belgian blocks, macadam, or wood. The best known deposit of asphalt is on the island of Trinidad, but it is also found in California and Venezuela. Ordinary street pavement contains about 16 to 18 per cent. of asphalt, the balance being sharp sand, with a small percentage of limestone dust added to harden it. A paucity of asphalt, having sand too hot in making the mixture, and not giving the spread mixture the requisite compression before it cools, are the general causes of poor pavements. In Europe there is used a bituminous limestone rock in powder, spread over a foundation, and "tamped" back to original condition; an expensive but satisfactory process.

ROPES. Cordage more than an inch in diameter is rope. Hemp, flax, cotton, jute, and other vegetable fibers are used,—manila hemp for strength and flexibility, Russian, Italian, and American hemp for various varieties, and jute for the commoner grades. Until 1820 rope was made by hand. Then came a machine that twisted the handspun yarn into strands, and in 1834 it spun threads from the raw material. A steel toothed comb was first drawn through the hemp fibers to straighten them; the workman, with a girdle of hemp about him, fastened one end to one of a series of hooks on a looper, drawing out the fibers with one hand, compressing them with the other, slowly backing down the thousand feet walk, while his assistant was doing the spinning with a wheel or looper. Later the yarns were spun and twisted into strands, which were twisted into rope by horse power. At present most of the rope is made by machine; the hemp fiber is softened and made smooth by oil sprinkling; the fibers are straightened or "scutched" by steel-toothed, revolving cylinders; the breakers or large frames of endless chain having projecting steel pins draw the fibers into a continuous ribbon; passing through the spreaders and the

drawing frames completes the straightening, and it is ready for the spinning which twists the fiber into yarn. Machines called "formers" twist it into strands, and "layers" lay the strands into rope. The "former" is an iron disc having at its center a shaft ending in a die. According to the number of yarns in the final strand, bobbins of yarn are arranged round the disc. The free ends of the yarn go to the die, and are twisted together by its revolving and are wound upon a spool. In the "layer," spools of twisted strands take the place of bobbins of yarn. In a former and layer combined, a number of small discs each have a die to twist a strand; all the strands being carried to a large disc and twisted into the finished rope.

RUBBER. First known as India rubber (or caoutchouc), much used in the arts, showing tremendous growth in its relation to commerce and manufactures of recent years. It is the hardened juice of several trees growing in Mexico, South America, Africa, and the East Indies. Incisions are made in the tree, the milky juice flows, and is caught in small cups, to be transferred to larger vessels. The water is evaporated over a slow fire, and the rubber cakes are ready for shipment. At first its only use was to obliterate pencil marks; its general utility commencing about 1820, when rubber waterproofed cloth was introduced by Charles Macintosh, a Scotch chemist, who suspended rubber in naphtha, and spread it between pieces of cloth. In that condition it cracked with cold, and became sticky with heat, until Nathaniel Hayward of Massachusetts mixed sulphur with the rubber, selling his patent to Charles Goodyear, and accidentally discovering the vulcanizing process (1839). This process is mixing rubber and sulphur, and heating them for several hours, the rubber becoming impervious to change under ordinary conditions. Silicate of magnesium, carbonate of lead, asphalt, and tar are also used. Commercial rubber is freely soluble in ether, chloroform, naphtha, petroleum, benzol, and various oils, and in the liquid state is mixed with slaked lime to form a cement; heated with tar and shellac to produce a tenacious glue, and gives body and luster to varnishes and mineral oils. Pure rubber has a few uses. The crude rubber lies in steam heated water for a day; is cut up and impurities removed; is thoroughly washed between rollers with a stream of water; is dried and stored in a dark, dry room. To vulcanize, the purified gum is mixed with the sulphur; then cut and shaped; powdered soapstone preventing adherence during the heating in a cylindrical cast-iron oven. The quantity of sulphur used, and the degree of heat, determines if the product be hard or soft rubber, or ebonite. Vulcanized rubber goods include footwear, waterproof clothing, hose, belting, tires, electrical and scientific apparatus, hard rubber goods, and liquid varnishes. Many manufactures are very interesting. For vulcanite pipe stems a suitable tube is formed, filled with water, sealed at each end, and placed in the mold. The addition of heat increases the bulk of the water, and its pressure forces the rubber to perfectly fill the mold.

SAFES. A safe or safe deposit vault is a modern convenience for keeping money and valuables intact, and safe from burglars or fire. The first fireproof safe was constructed in France (1820) along the lines of to-day, which consist of a metal box or chamber with double walls, filled between with non-conducting composition, such as clay, concrete, or plaster of Paris, with alum or other salt containing water (or vessels containing water), so that when exposed to heat steam will be given off. So long as the inner chest is surrounded by steam its contents cannot be injured by fire. Laminated construction is the protection against burglars, the walls being of alternate soft and tough steel or iron, and of hardened iron plates. Recent vaults have been constructed of armor plate similar to that used on war vessels. Round corners are used, avoiding joints as much as possible. Chilled iron is used in vaults, the metal being a peculiar grade, naturally soft and easily worked, but made very hard at the surface by sudden cooling; this is frequently used in blocks weighing several tons and is secured by an elaborate system of bolting on the inside. Doors are single castings, sliding on anti-friction rollers into deep recesses in vault walls

SALT. A mineral known as halite, chemically known as chlorid of sodium. Obtained from beds of rock salt, bodies of salt water, and subterranean brines. In the United States deposits are in New York, Pennsylvania, Virginia, West Virginia, Ohio, Michigan, Illinois, Louisiana, and Texas; it is also procured from the Great Salt Lake of Utah, and San Francisco Bay in California. In Europe the great deposits are in England, Germany, Austria-Hungary, Russia, and Spain; France and Italy abstract considerable from sea water, and Japan, India, and the West Indies are large producers. In the coarser grades the water is evaporated by the sun's rays, as was done 2,000 years ago in England, the Roman salt pans still being in evidence. Subterranean brines are obtained by driving wells, and pumping. In the finer grades the salt water is evaporated by artificial heat applied to tanks about 20 feet wide, 100 feet long, and 12 inches deep, and the heat is applied to one end only, the brine passing slowly over, as heated, to crystallize at the other end. Careful attention is given to preserving the correct fluid-

SALT EVAPORATING TANKS. Syracuse, N. Y.

ity of the great bulk. The world's product is estimated at something over 12,000,000 short tons, of which the United States stands at the head with 2,921,708 tons.

SAWS. Tools for cutting wood and metal, usually of steel. It is a sheet of highly tempered steel, with teeth made by a punch, these being slightly bent, so as to be somewhat wider than the blade, thus preventing it being choked with sawdust. The *crosscut* or *whip* saw has a handle at either end; the *rip* saw is generally used to cut lumber in the direction of the fiber. The *circular* saw is mainly used in mills, revolving in a slit in the bench, leaving only a portion of the saw projecting, which revolves at a high rate of speed. The *band* saw is a long band of steel, with finely cut teeth, the two ends join and are passed over two revolving drums, one above and one below the bench, the saw working through two slits in the bench. The *cylinder* or *crown* saw cuts staves for barrels, button blanks, and other forms. The *toothless cold metal* saw has no teeth, and is a steel or iron disc cutting its way through a steel rim by friction. Although the *circular* and *band* saws were invented in England, the American saw is acknowledged the finest in the world to-day.

SEWING MACHINE. The device that revolutionized garment making, etc. The first machine appears to have been invented by Thomas Saint, an Englishman (1790), and had the general form of the modern machine, with a notch for the needle eye, and a hole was punched by an awl for the needle to pass through and make a single chain stitch. Archbold and Newton (1841) claimed the shortest patent in history, "a needle with an eye in the point," producing a chain stitch. Elias Howe (1846) patented a number of improvements, producing the lockstitch, and from then, Bachelder (1848), Wilson (1852), Singer, McKay, and others perfected the present machine for sewing linen, etc. Then followed the heavier machines for carpets, cloth, shoes, leather, etc., and to-day America leads the world in manufacturing sewing machines of all types.

SHOES. A century ago shoes were made by hand, it taking a day to make a shoe. By machinery a pair of shoes can be made in 20 minutes, 60 operators and 15 machines combining the 26 pieces of leather, 14 pieces of cloth, 24 buttons and buttonholes, 2 box toes, 2 steel shanks, 80 tacks, 20 nails, and 20 yards of thread. Shoe pegs were invented in 1811; the rolling, splitting, and racing machine, which cuts the leather into strips, appeared 1850-1860; pegging machines were invented, and shops began to use steam power; the McKay sewing machine with a capacity of 100 soles a day revolutionized the business (1870); and the McKay and Bigelow heeling machine appeared the same year, making the solid heel. Then came the lasting machine; the Goodyear welt machine turning out shoes

similar to hand-sewed; the Davy pegging machine that cuts off the tips of the pegs as they are driven, and many others; reducing cost of production, and admitting many women and children to what was exclusively men's work. Shoemaking is largely team work,—uppers, liners, facing and tongues, backstays, top pieces, and the vampers attaching the top to the vamp. Then the "lasting machine" mechanically attaches the insole and last, and it goes to the stitching machine. The welter stitches the insole and upper to the welt; the bottom of the shoe is covered with cement; the outer sole is pressed and the edges cut to the shape of the shoe in the trimming machine, which also cuts a groove so that the stitching may be hidden, and another sewing machine with curved needles stitches the soles to the welt. The new "double clinch" machine drives a wire

STEAMSHIP "LUSITANIA."

through the inner and outer soles, clinches it, making and closing the stitch channel. This process gives great flexibility. Machinery levels the sole, the heeling machine feeds leather, and just so many nails, and a single blow drives them into place. Minor finishing and smoothing complete the shoe.

SOAP. Few commodities have shown the phenomenal improvement found in soap during the past quarter of a century. To-day five cents buys a finer soap than did a dollar; the fancy soaps of that period have practically disappeared; also the oppressive perfume that covered a multitude of manufacturing sins. The latest developments are *fluid* soap, and *shaved* soap, each distributed from a washstand device into the wetted hands of the user. All soap is a suspension of animal or vegetable oil with alkali,—tallow, grease, cocoanut oil, cottonseed oil, and oil from ground or pressed seeds. Toilet, laundry, and kitchen soaps are termed "hard," and are made with soda, including the "rosin," perfumed, and silicated soaps. Into large rectangular kettles are poured melted tallow, oil, or grease, and then soda lye at 20 degrees Baumé. Emulsification is followed by saponification, lye being added systematically. When "clear" it cools, spent lye is withdrawn, and new lye and rosin added; this operation is repeated several times until the soap is finally "closed," or made soluble, by the addition of water. It then separates into pure soap, "nigger" soap, which is a lower grade, dark product, and "nigger" lye, which is thrown away. The best soaps are made in this manner, the rosin being omitted from toilet soaps. *Silicated* soap is made from cocoanut oil and soda, half boiled, ground quartz added, stirred, cast into molds and dried. *Salt water* soap is similarly prepared. *Castile* soap is made from pure olive oil and soda lye. *Floating* soap is white soap remelted and air stirred in by a machine resembling an egg beater. *Wool* soap, or *silk scouring* soap, is a perfectly neutral compound of olive oil and potash. *Soft* or *green* soap is a soda soap containing an excess of water.

STARCH. A valuable white powder obtained from various sources, England chiefly using rice, the United States corn, Germany and France potatoes. It is sparingly soluble in cold water, but treated by heat is converted into soluble starch, dextrin, maltose, and dextrose. It is used for an endless variety of purposes: as a food, in corn starches, infant's foods, arrowroot, etc.; for laundry purposes; for sizing (or glazing) paper or cloth; in the preparation of adhesive "gums," as on postage stamps; and in the manufacture of glucose.

STEAMSHIPS. The progress of steamships, or steam navigation, has been a veritable romance from the traditional attempt made by Blasco de Garry to propel a vessel by steam in 1543 in the harbor of Barcelona, Spain. Denis Papin invented the safety valve, and a single acting steam cylinder pump (1707), and is also credited with a steamboat, but it was propelled by man power and not by steam. From then many inventions appeared, until Rumsey's jet propeller (a stream of water driven from a steam pump) made four knots an hour (1786) in Virginia, and Fitch, Bramah, Lyttleton, Shorter, Stevens, Brunel, Taylor, Miller, Symington (who built the "Charlotte Dundas" to tow barges) patented, and invented, until Robert Fulton brought forward the "Clermont" (1797), as the first true step to mark the commercial success of steam navigation. From that period enormous strides have been made, mainly due to the improvement of the marine steam engine, and to the advances made in iron boat building. The paddle gave way to the screw propeller, and the turbine has recently revolutionized its action and operation. The demand for increased speed was incessant, calling for higher steam pressure, and greater engine speed than the economical expansion of a single cylinder could produce. This introduced the tri-compound or triple expansion engine, capable of higher pressure, lighter in weight, and more economical. The advantages of the water tube boiler were apparent, and the quadruple expansion engine was evolved, rapidly displacing the cylindrical boiler in naval construction. Trans-ocean traffic naturally attracted the greatest development. Size and speed have continually increased, especially since the White Star line "Britannic" and "Germanic" (1874), reduced the Queenstown-New York passage to eight days. Then followed an era of speed competition which has never ceased, and which has evolved a new "record breaker" almost every year, the latest being the "Mauretania" of the Cunard line, which, September 26-30, 1909, ran from Queenstown to New York in 4 days, 10 hours, and 51 minutes; eclipsing the prior record of the "Lusitania" of the same line in 4 days, 15 hours, September 16-20, 1908. The "Mauretania" is 790 feet long, 88 feet beam, has 45,000 tons displacement, and quadruple screws. Her fastest day run was in June, 1909, recording 673 knots or 26.55 knots per hour. The famed "Great Eastern" (1861) had both screw and paddles, was 692 feet long, 80 feet beam, 27,000 tons displacement, and with paddle, screw, and sail had a speed of 13 to 14 knots per hour; she was half a century before the demands of ocean traffic, and was successful mainly in laying trans-ocean cables. The innovation now promised is a steamship from England to the United States costing $7,250,000, which shall be equipped with a theater, in addition to all the gigantic growth of modern "improvements."

STENOGRAPHY. A vital nerve of modern business. Briefly it is an abbreviated report, using symbols in place of words. John Willis wrote a treatise on it in 1602, and history traces its early use to 70 B.C. The famous Gurney system appeared (1751); Byrom, Taylor, Mavor, Harding, Odel, Richardson, Roe, Cadman, etc., paved the way for the Pitman method (1844), for

BEET SUGAR FACTORY. Colorado.

which he was knighted in 1893. It was brought to the United States in 1844, by Stephen Pearl Andrews, and has been developed to its present excellence. The speed varies with surroundings; tests of public speakers show 130 to 180 words a minute to be easy, and 200 to 250 perfect transcription from the "take" has been accomplished in England and the United States. All other records are of specially arranged matter and for very limited time, and not calling for perfect transcription of ordinary matter.

SUGAR. Found mainly in sugar cane, beets, and maple sap. The cane yields 65 per cent. juice, and 18 per cent. sugar. Evaporated at a low temperature, the crystal is brown sugar, the uncrystallized residue is molasses. The brown sugar is mixed with half or one third its bulk of water containing lime, boneblack, and serum of ox blood, and is heated by passing steam through it. The albumen coagulates, rising to the surface with the boneblack and impurities, leaving a clear syrup which is filtered through powdered boneblack until colorless; then heated to crystallize in a pan raising the temperature and excluding air, patented by Howard of England (1813). A centrifugal filter devised by Joshua Bates of England (1831) separates

the crystals from the uncrystallized sugar; improved by Joseph Hurd of Massachusetts (1844-1858). In beet sugar the roots are rasped to a pulp, the juice expressed and refined as with cane sugar. The sugar beet is large, white, and sweet, and is grown extensively in the United States, France, Germany, Austria, Russia, Belgium, and Holland.

TELEPHONE. Essentially a United States product in its development to date. An instrument for the transmission of speech, or other sound, by means of electric vibrations. Page, of Salem, Mass. (1837), noticed an iron rod suddenly magnetized and demagnetized would emit certain sounds due to a rearrangement of molecules. Bourseul of France (1854) conceived the fundamental idea, but did not put it into practice. The credit for the practical development of the idea was given to Alex. Graham Bell (1876) after much and varied litigation. The story of his discovery, his work upon it, and the methods employed, reads like a romance. A soft iron magnet is held by its edges in front of an electro-magnet; a weak electric current passing through the coil of the magnet attracts the disc; a pulsating current vibrates it in consonance or harmony with the vibrations of the current. This disc is the diaphragm, and when used as a transmitter it vibrates under the influence of the voice forming what are termed sound waves. This produces currents by induction in the wire of the coil which are transmitted over the line wire, and into the coil of the receiving instrument, causing its magnet to become strongly magnetized; the diaphragm is attracted and moves in harmony with the diaphragm of the transmitter, the sound waves being reproduced almost simultaneously with their production. Long distance telephony was introduced (1885) by a line with metallic circuits of hard drawn copper from New York to Boston, and a regular line to Philadelphia followed immediately. It was so successful that, within two years, lines were established to Chicago, Milwaukee, Providence, etc.; the New York and Chicago circuit of 950 miles and 1,900 miles of wire being opened in 1892, and communication with other sections followed. In 1901 there were 1,354,202 miles of exchange service wire in the United States, with a subscribing list of 800,880.

TOBACCO. One of the leading industries of the United States. The origin of the name is in doubt, but probably came from the island of Tobago. The use of tobacco or other fumigatory herbs appears to have been known to the Boethians, Scythians, Chinese, etc., during the more remote periods, but the cultivation of the modern tobacco probably dates from the seed taken to Spain by Gonzalo Fernandez de Oviedo; it was cultivated as an ornamental plant until Nicolo Manardes extolled its medicinal virtues. In America its cultivation began with the earliest settlement of Virginia, and although no mention of the herb is found in Shakespeare it was well known in England prior to and during his era. In 1615 it was the currency of Virginia; the Dutch colonists cultivated it in 1646; but Maryland, the Carolinas, Georgia, and later, Kentucky, made it their leading crop for years after the first settlement. From 1744 to 1776 the exports averaged 40,000,000 pounds a year, and the production spread to Florida, Pennsylvania, Connecticut, Ohio, Wisconsin, Indiana, Missouri, and a number of other states in limited degree. The United States produces more tobacco than any other country in the world; exporting more than one third of the product, mainly to England, France, Germany, Italy, Austria, and Holland. The leaf of Pennsylvania is mainly "filler" which goes in the cigar, while Florida and Connecticut largely produce the "wrapper" or outer covering. Virginia and the Carolinas produce the golden leaf used in pipe tobaccos and cigarettes, while Kentucky has a strong, dark growth almost entirely exported, and Louisiana produces the curious Perique, used in pipe smoking mixtures, but now apparently dropping from favor. The tobacco crop of the United States in 1908 amounted to 718,061,380 pounds, grown on 875,425 acres, and valued at $74,130,185. The next largest tobacco producing country is Russia, with 232,767,000 pounds. The leaf tobacco export of the United States in 1908 was 287,900,946 pounds valued at $30,902,900; the manufactured products amounting to $4,701,617. In few industries have there been such radical modern changes during the past 20 years. Factory processes have been revolutionized. Cleanliness is the typical feature where dirty floors, tables, etc., and an atmosphere polluted with constantly burning tobacco were taken as the established orthodox surroundings. Scientific manipulation in curing and handling the raw material has worked modern miracles, and practical "team work" by departments eradicates loss of time and materially decreasing cost of production.

In the growing of the leaf tobacco intended for cigars the finest seed growths of the world have been brought to the United States, and in Florida have been established tobacco farms where the leaf is grown under artificial canvas shades, protecting it from too much sun, yet giving it all that modern scientific methods demand. Electric light has rendered it possible to work at night, removing grubs and worms from the growing plants before they can do much damage, and modern spraying apparatus works along the correspondingly same direction. Under these methods the value of the tobacco is doubled and sometimes trebled in value, by reason of its more marketable color and texture. The seed is planted in large beds, the small plants at about six weeks old are transplanted to the fields, when flowers appear they are "topped" or cut off except when seed is desired, and when the leaves begin to turn yellow the plant is ready for the harvest. The stalk is cut near the ground (or when intended for the better grades of cigar tobacco the individual leaves are gathered as they ripen), the plants are dried on scaffolds in the tobacco house, and then go through various processes as required for cigars, smoking tobacco, cigarettes, chewing tobacco, or snuff. The "curing" process is one of fermentation, caused by unorganized ferments inherent in the leaf, and extends from two weeks to two years, according to handling. It is quickly done in heated rooms, slowly when stored in cases or barrels in warehouses, and in Cuba it is piled into a tapering pyramid, pulled down, and repiled, as the process matures the leaf. The Cuban tobacco ranks highest in quality, and most of the highest priced cigars are made entirely of this growth. It has many varieties, from the small Vuelta Abajo leaves to the enormous Remedios, the latter being principally used in what are termed "seed and Havana" cigars in the United States, the "seed" being the native grown wrapper, or one of imported Sumatra tobacco. The marvelous individuality and quality of the Vuelta Abajo leaf are due to the soil, which was raised from a valley by the constant influx of tidal water from the sewage laden bay of Havana, until at last the ground rose higher than the water level. Then only the high tides, and finally only the highest tides produced by the strong north winds or "northers," penetrated. The soil was made from silurian mud, sea vegetation, dead fish, and small land animals, the ordure of birds, and the constant shower of needles from the pines covering three sides of the valley. There is no soil known to be like it in the world; the seed of tobacco grown there does not reproduce the native quality when planted and grown in other countries, and even in Cuba, only the famous valley known as Vuelta Abajo produces this unique growth.

TYPEWRITER. A machine for making legible characters, or printing, without the aid of detached type. It was crudely patented in England (1714); was improved in France (1833); but it remained for America to bring it to its present perfection. Its well-known square frame holds a number of compound levers worked from a keyboard; each key bears a corresponding letter or symbol at each extremity, and as the keyboard lever is depressed the opposite end of the lever is smartly struck upon an ink ribbon, carrying it against paper held around a hard rubber roller, and making an impression of the letter or symbol carried on the lever. A device moves the roller at every stroke, thus spacing the letters correctly, as in printed type. Recent improvements place the writing in full view of the operator, instead of underneath the carriage; place two colored ribbons at the command of the operator, render the reversing of the ribbon bobbins automatic, and render the turning of the paper for a new line automatic with the pushing back of the carriage. There is also a machine for use in offices which bills, ledgers, and adds automatically, making a 75 per cent. saving in work, and giving mechanical, instead of brain, accuracy. Other types of machine have ink pads instead of ribbons, and various types of keyboards, but the standard is what was introduced as the Remington in 1874, to which formative model most of the high class machines have been brought. An electric machine is mooted in which the depression of a key is transmitted to a letter, causing it to move by electricity, and not by lever or cam. Another still visionary machine is to operate with a cylinder from a phonograph, reproducing automatically on paper what has been spoken into the phonograph. Typewriters save immense time in business, the operator producing five times the work with less fatigue, the speed ranging from 40 to 100 words per minute. Up to 15 manifolds, or reproductions of copy, can be made at one time.

WASTE PRODUCTS. The commercial ideal is the utilization of all residues in industrial processes, thus making profits still larger, producing a greater area

of production, and therefore of work, and enriching the world by adding largely to the supply of its necessities and luxuries. The utilization of the waste products of gas, petroleum, coal, the packing industry, and many others, were simply the first steps to a much wider field, and to-day chemical technology is forging strongly to the front. One of the most important industries recently affected is the immense waste product in distillation, the residue from the "mash," containing salts of potash, soda, and nitrogenous compounds; in grain distillation about one pound of nitrogen is thrown away for every ten gallons of alcohol produced; in Europe alone 100,000 tons of ammonium sulphate is thus lost instead of being used as fertilizer, representing a loss of about $4,000,000. In the beet sugar industry the juice is rich in various albuminoids, hydrocarbons, and waste sugar, and it is estimated that a production of 50,000,000 tons involves a loss of $12,000,000 worth of nutritive substances, most of which are to be recovered and used. About 80 per cent. of the heat and power of a ton of coal passes away through the chimney and the exhaust, a loss estimated by Germany alone to be worth $20,000,000 yearly. Lime-silica bricks are formed of cement obtained by the calcination of the lime precipitates of the sugar refineries; the fatty matters are extracted from wool and variously used; and, apart from the values in augmented products of established types, there is being evolved new and immensely useful and valuable novelties of all kinds. In several of the industries the value of the one time waste products to-day is greater than the value of the original product.

WATCHES. The mainspring and balance are used instead of the weights and pendulum in a clock. Lathes produce the staffs, pinions, arbors, on which the wheels and moving parts work, and also the plates supporting the mechanism; perforations for screws, arbors, etc., are made in the plates by drills; all screws are made by machines; cutters or saws shape the teeth in the wheels and pinions; hammers or rollers are used with great care to obtain uniform density and compress the metal of the balance, which is then faced and recessed by lathes, tapped by drills, finished and glossed. Special machinery is necessary to draw, flatten, finish, and coil the springs. The moderate priced American watch has revolutionized the watch trade of the world. Automatic machinery produces most of the watch cases; gun metal, nickel, silver, gold, and alloys are used. Thick beveled glass is used on most open-faced watches.

WEAVING. The art of combining threads, yarns, or strips of various materials into a cloth or textile fabric. Weaving has existed from the earliest ages, straw, grass, and then yarns. For centuries hand weaving was an important factor, declining under the factory system. Woven material consists of two sets of threads or yarn traversing the web in different directions, passing over and under each other. The warp is a thread running the entire length of the web; the woof is the thread running across the cloth. In plain weaving these cross alternately, and variations produce "twill weaves" and "satin weaves." Whether by hand or by loom, weaving has three movements: shedding, picking, and beating up. The shed is formed by raising some threads and lowering others; picking consists in passing the woof through the shed; after which it is pressed towards the cloth roll, or beaten up. Another shed is then formed, and the movements repeated indefinitely.

WOODWORKING. A term applied to the utilizing of lumber. The machinery consists of planers, lathes, and abrasive machines, by which sandpapering, polishing, and finishing is done by machinery. Roughly sawed planks, boards, and beams are brought to standard sizes and smoothness, by surfacers or planers of revolving cutters operating on all four sides at once; tongues and grooves in the edge being cut at the same time; other machines cut curved surfaces such as moldings, and others do carving, scrolling, paneling, and dovetailing. The modern automatic attachments to the lathe make almost all things possible to a clever workman. Tenon joints and mortising are cut by machines with rotary cutters and reciprocating chisels, and the boring machine has been greatly improved. Abrasive machines include the endless sand belt and emery belt, with drum machines for use on flat surfaces. The great diversity in weight, strength, hardness, and quality of grain gives infinite variety in practical woodworking. A new process for seasoning wood is by electricity, under the Noden-Brettonneau process. The wood is immersed in a solution of ten per cent. borax, five per cent. of rosin, and a little carbonate of soda, and a current of electricity is passed through the bath—and the wood—removing all sap, filling the pores with rosin and borax. Two hours are claimed to season the wood satisfactorily. Experiments as to the durability of various woods by driving sticks of certain dimensions into the ground, show that in five years, oak, elm, ash, fir, soft mahogany, and nearly every variety of pine, were totally rotted; larch, hard pine, and teak were decayed on the outer surface; while acacia (locust) was practically sound. Hard mahogany and cedar of Lebanon were in good condition, but only Virginia cedar was actually as good as when put in the ground. In a dry state beams are known to be nearly 1,100 years old, and piles driven by the Romans, prior to the Christian era, are in good condition after an immersion of 2,000 years. Cedar, oak, yellow pine, and chestnut are the most durable in dry surroundings; posts can be secured against rot by seasoning, charring with fire, and immersion in hot coal tar. Hard wood stumps rot in five to six years; spruce in about the same period; hemlock in eight to nine years, and cedar eight to nine years; pine stumps never decay.

WOOL. The foundation of the textile industry. A process following closely to nature, although doubtlessly the prehistoric first worker never grasped the fact. The process depends on the fact that certain fibers combine mechanically to form a homogeneous whole. Twine a human hair with a wool fiber and they fall apart easily; two fibers of wool cling. Textile industry forms animal and vegetable fibers into threads, which are woven into various fabrics. Spinning and weaving are common to all branches, but otherwise each separate division is somewhat of a law to itself. The principal fibers are wool, cotton, silk, flax, hemp, jute, coir (cocoanut fiber), and ramie or China grass. Wool varies in quality according to the staple produced by various sheep, etc., and the staple is the basis of classification. The wool coat is naturally dependent on climate to a great extent. Lincolnshire and Leicestershire sheep produce the more lustrous wool, the staple being eight inches long, while in the softer, silkier Merinos it is two inches. The finer Merino wool felts more readily, and is used for carding and spinning, the longer stapled wools being less wavy and better suited to combing and making non-felting worsteds. Saxon wool has the best felting quality, being very short staple, and wool is divided into long, middle, and short staple, sheep also being grouped along these lines. While the spinning and weaving were known almost beyond history, it was not until comparatively late years that the great advances were made, England standing foremost, although much credit is due to France and to the United States. Wool is first sorted into lengths and grades, washed, scoured, and dried, left white or dyed, carded into threads, and spun into yarn, and so into cloth, when it is "burled," filled with soap, milled, teasled, shorn, steamed, and pressed. These are the leading features of the process, which varies in individual handling. "Burling" is abstracting loose threads, burrs, etc., and "teasling" is scratching with brushes made of teasels (the spiny head of the *Dipsacus fullonum*) which produces the "nap," or rough face, ready for the more or less close clipping of another part of the finishing. If wool only were to be used it would be a simple matter, but modern conditions require the use of many varieties of wool, and a large number of other raw materials, so that nearly every textile fiber comes into the wool industry. If a cloth is enriched, silk is used; in carpets linen forms the warp; to cheapen a fabric there is used cotton, noils (the refuse of the combing), shoddy (old worsted rags, or any old, soft cloths of wool, made over into a short, brittle, and unreliable product), mungo (inferior shoddy), and extract (the lowest form of textile fiber). The three raw materials of the wool manufacturer are animal fibers, *i. e.*, wool, hair, and silk; vegetable fibers, *i. e.*, cotton, flax, jute, and hemp, and artificial fibers, *i. e.*, noils, shoddy, mungo, and extract. The raw material produces 76.9 wool, 23.9 shoddy, with practically no waste. No animal has a wider geographical distribution than the sheep,—Iceland, India, Australia, the tropics, and Patagonia in the extreme south. In the United States the industry came in with the local fulling mills, in which cloth was cleansed, thickened, etc.; this was followed by the public carding mills where the wool was made ready for the old spinning wheels, the first being at Pittsfield, Mass. (1790); the first woolen mill appeared at Newbury, Mass., in the same year. In 1810 the amount of homespun was visibly lessening by reason of several mills, and in 1820 the mill product was $4,413,068. The last official report totaled 2,653 establishments working wool in the United States, with an annual product value of $392,473,050; the annual production of wool is 309,991,812 pounds, with importations for home consumption of 128,250,945 pounds; the world's production of wool being 2,685,105,013 pounds.

USEFUL NATIVE WOODS.

WOOD.	Weight. Pounds per Cubic Foot.	Pounds per Square Inch.		REPRESENTATIVE USES.
		Crushing Strength.	Breaking Strength.	
Alder	28-35	5,000	10,000	Manufacture of furniture.
Arbor Vitæ	20	4,400	7,300	Posts, railway ties, etc.
Ash, White	41	7,300	14,000	Wagon building, axe handles.
Ash, Hoop (Black Ash)	35	6,100	11,500	Agricultural implements, carriages, furniture, tool handles, and interior finish for houses.
Ash, Mountain	34-37	5,500	6,300	Flooring.
Ash, Oregon	36	7,500	9,500	Furniture, carriage frames, wagons, cooperage.
Ash, Prickly	31-37	6,500	10,000	
Basswood (Linden)	25-26	5,900	8,000	Cheap furniture, wooden ware, paper pulp, inner soles of shoes.
Bay, Loblolly	29	5,500	9,400	Cabinet making.
Bay, Red (Isabella Wood)	40	8,000	12,800	Cabinet making, interior finish for houses. Formerly, shipbuilding.
Bay, Rose (Great Laurel)	39	6,300	9,300	Tool handles, engraving.
Beech, American	43	7,000	16,300	Shoe lasts, plane stocks, shipbuilding, handles, and fuel.
Birch, White	36	5,000	11,900	Spools, shoe pegs, hoops for barrels, and wood pulp.
Birch, Black	47	5,600	11,500	Furniture and occasionally shipbuilding.
Birch, Yellow	41	8,900	17,700	Furniture, boxes, and hubs for wheels.
Birch, Canoe	37	7,000	14,000	Spools, shoe lasts, turnery, wood pulp, and occasionally lumber.
Box Elder	27	6,400	11,300	Cheap furniture, interior finish for houses, paper pulp, etc.
Boxwood (Flowering Dogwood)	51	7,700	12,800	Cabinet making and turnery.
Buckeye	27-28	4,500	7,000	Artificial limbs, paper pulp, and occasionally lumber.
Buttonwood (Sycamore)	35	6,500	9,000	Tobacco boxes, butchers' blocks, manufacture of cheap furniture.
Cedar, Red	31	6,000	10,500	Interior finish for houses, linings for closets and chests, and manufacture of lead pencils.
Cherry	36	7,800	11,700	Cabinet making, and interior finish for houses.
Chestnut	28	5,500	9,800	Cheap furniture, interior finish for houses, railway ties, etc.
Chinquapin	37	6,200	10,400	Agricultural implements, railway ties, fence posts, and rails.
Coffee Tree	43	5,800	10,900	Cabinet making and fence posts.
Cypress, Bald	27	6,000	9,100	Lumber for construction, railway ties, and fence posts.
Elm, White	40	6,300	12,100	Hubs of wheels, saddle trees, flooring, cooperage, and boat and ship building.
Elm, Red (Slippery Elm)	43	7,700	12,300	Fence posts, railway ties, sills for buildings, hubs for wheels, and agricultural implements.
Elm, Cork (Rock Elm)	45	8,500	15,100	Agricultural implements, frames for chairs, hubs of wheels, sills for buildings, etc.
Elm, Winged (Wahoo)	47	6,300	10,200	Hubs for wheel and handles for tools.
Eucalyptus (Blue Gum)	61-65		13,000	Rollers, paving blocks, shipbuilding, and carriage making.
Fir, White	24	5,600	7,000	Interior finish for houses, packing cases, wooden ware.
Fir, Yellow (Oregon Pine) (Red Fir)	32	7,500	12,500	All kinds of construction, railway ties, piles, and fuel.
Gum, Cotton	29	5,200	9,300	Wooden ware, broom handles, and vegetable boxes.

WOOD.	Weight. Pounds per Cubic Foot.	Pounds per Square Inch. Crushing Strength.	Pounds per Square Inch. Breaking Strength.	REPRESENTATIVE USES.
Gum, Sour	40	6,700	12,000	Hubs of wheels, rollers in glass factories, wharf piles, and ox yokes.
Gum, Sweet (Red Gum)	37	6,700	11,100	Outside finish for houses, cabinet making, paving blocks, wooden dishes, fruit boxes.
Hackberry	46	7,000	12,200	Fencing and cheap furniture.
Hemlock	26	5,500	10,200	Outside finish for houses.
Hickory (Pig Nut)	51	8,300	15,400	Similar to those of Shell Bark Hickory.
Hickory (Shell Bark)	50-52	9,000	17,000	Agricultural implements, carriages, wagons, baskets, etc.
Honey Locust	42	7,200	13,100	Fence posts and rails, hubs of wheels, and construction.
Hornbeam (Blue Beech)	45	7,200	16,300	Levers, handles for tools, etc.
Ironwood (Hop Hornbeam)	51	7,800	16,000	Fence posts, handles for tools, and other small articles.
Laurel, Cal.	40		11,400	Shipbuilding, cabinet work, crosstrees, etc.
Laurel, Madroña (Madroña)	43		12,000	Gunpowder, charcoal, and furniture.
Magnolia, Mountain (Cucumber Tree)	29	6,000	9,400	Cabinet making, cheap furniture, broom handles, pump logs, etc.
Maple, Hard (Sugar Maple)	43	8,000	13,600	Furniture, cabinet making, interior finish of houses, shipbuilding, turnery, flooring, saddle trees, etc.
Maple, Oregon (Broad-leaved)	30	5,500	9,700	Furniture, broom handles, etc.
Maple, Red	38	6,600	11,500	Chairs, cabinet making, turnery, gun stocks, etc.
Maple, Soft	32	6,900	14,500	Furniture and flooring.
Mesquite	47	8,500	6,800	Flooring, turnery, and largely for wooden pulp.
Mesquite, Screw-pod	47	9,600	12,700	Furniture, fellies of wheels, paving blocks, and charcoal.
Mulberry	37	6,000	10,900	Fencing, cooperage, shipbuilding.
Oak, Burr	46	7,000	13,900	Same as White Oak.
Oak, Live (Virginia)	59	7,800	14,400	Occasionally for shipbuilding.
Oak, Live (Western)	53	7,800	18,000	Agricultural implements, wagons, etc.; most valuable oak of Pacific coast.
Oak, Post	52	7,000	12,400	Fencing, railway ties, fuel; also for cooperage, construction, etc.
Oak, Red	41	8,600	16,900	Construction, interior finish for houses, and furniture.
Oak, White	46	7,400	12,800	Shipbuilding, construction, carriages, agricultural implements, cabinet making, cooperage, etc.
Osage Orange	48	11,600	16,000	Fence posts, railway ties, wheel stocks, and paving blocks.
Pecan	45	6,200	8,200	Fuel and occasionally for wagons and agricultural implements.
Persimmon	49		12,400	Plane stocks, shoe lasts, etc.
Pine, Red (Norway Pine)	30	6,400	11,300	Used for all purposes of construction.
Pine, White	24	4,100	7,000	Construction, cabinet making, matches, etc.
Pine, Yellow or Spruce (Eastern Short-leaved)	38	6,800	14,700	One of the most valuable timbers for lumber.
Pine, Yellow or Southern (Long-leaved)	44	9,000	13,600	Masts, bridges, railway cars, etc.
Pine, Yellow (Western)	29	5,400	10,200	Largely for lumber; one of most important lumber trees of the West.

WOOD.	Weight. Pounds per Cubic Foot.	Pounds per Square Inch. Crushing Strength.	Pounds per Square Inch. Breaking Strength.	REPRESENTATIVE USES.
Plane Tree..... (Sycamore)	35	6 50C	9,000	Furniture, interior finish for houses, tobacco boxes, ox yokes, and butchers' blocks.
Poplar..... (Cottonwood) (Big Cottonwood)	24	5,300	10,800	Interior finish for houses.
Poplar, Yellow..... (Tulip Tree) (Whitewood)	26	5,000	9,300	Construction, interior finish for houses, boatbuilding, shingles, brooms, and wooden ware.
Quaking Aspen.....	25	4,700	9,600	Flooring, turnery, and largely for wood pulp.
Redwood.....	26	6,000	8,500	Lumber, fence posts, railway ties, etc. Most valuable building material of Pacific coast.
Sassafras..... (Ague Tree)	31	5,500	8,500	Fence posts and rails, construction of light boats, ox yokes, and in cooperage.
Spruce, Black.....	28	5,800	10,600	Construction of houses, sounding boards, and paper pulp.
Spruce, White.....	25	4,900	12,900	Construction of buildings.
Tamarack..... (Larch)	39	7,900	12,800	Upper knees of small vessels, fence posts, telegraph poles, and railway ties.
Walnut, Black.....	38	8,300	12,100	Interior finish for houses, cabinet making, shipbuilding, etc.
Walnut, White..... (Butternut)	25	5,700	8,500	Interior finish for houses and furniture.
Willow.....	27-31	3,800	7,800	Fence posts and fuel.

USEFUL FOREIGN WOODS

WOOD.	Weight. Pounds per Cubic Foot.	Pounds per Sq. Inch. Breaking Strength.	REPRESENTATIVE USES.
Bamboo.....	19-25	27,400	Posts, poles, utensils, troughs, pipes, roofing, and paper.
Boxwood.....	64.8		Engraving and mathematical instruments.
Cedar, Spanish.....			Cigar boxes.
Ebony.....	74.2		Inlaid work, piano keys, etc.
Eucalyptus, Jarrah.. (Mahogany Gum)	65	8,900	Marine work, exposed positions, shipbuilding, bridge timbers, street paving.
Eucalyptus, Karrie.. (White Gum)	63	8,000	Construction, railway ties, piles, marine work, pavements, masts, lumber.
Greenheart.....	72	10,000	Ship keels, frames, rollers, turnery, beams, planks, piles, tops of fishing rods, veneers.
Mahogany, Spanish.. (Mexican Mahogany)	45	14,000	Cabinet work, veneers; formerly shipbuilding.
Mahogany, White... (Prima Vera)			Cabinet work, furniture, veneers.
Oak, English.....	51	10,000	Shipbuilding, beams, cabinet work; formerly carpentry.
Pine, Northern.....	34	7,000	Carpentry, construction, planks, beams, masts, heavy timbers.
Rosewood.....	64.2		Furniture, piano cases, burial caskets, piano work.
Sandalwood.....	58		Rich furniture, fine carvings for small objects, as jewel boxes and fan handles.
Satinwood.....	59.9		Cabinet work and odd sets of furniture.
Teak..... (Indian Oak)	50	15,000	Furniture, shipbuilding, timbers, backing for armor plates.
Yew.....	46.1-50.5		Chairs, canes, and whips.

PATENTS.

In the United States the patent system is administered by the Patent Office, a division of the Department of the Interior. Letters patent of the United States are issued under the seal of the Patent Office to "any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned." Every patent contains a grant to the patentee, his heirs or assigns, for the term of seventeen years, except in the case of design patents, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories. The law provides for the issue of the patent only to "the original and first inventor," to the exclusion of the importer of a foreign invention.

Application.—Application for a patent must be made in writing to the Commissioner of Patents. This must be accompanied by a full and exact description of the invention or discovery, and of the manner and process of making and instructing, compounding, and using it, verified by the oath of the applicant that he believes himself to be the first inventor and does not know and does not believe that the invention claimed by him was ever before known or used. The description or the specification must "particularly point out and distinctly claim the part, improvement or combination" which the applicant claims as his own invention. Whenever practicable there must also be furnished a design or drawing and, when requested by the Patent Office, a working model.

Reissue.—A reissue is granted to the original patentee, his legal representatives, or his assignees of the entire interest when by reason of a defective or insufficient specification, or by reason of the patentee claiming as his invention or his discovery more than he had a right to claim as new, the original patent is inoperative or invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

Caveat.—A caveat is a notice given to the Patent Office of the caveator's claim as inventor, in order to prevent the grant of a patent to another for the same alleged invention upon an application filed during the life of a caveat without notice to the caveator. A caveat is filed in the secret archives of the Patent Office; it is good for one year and is renewable.

Fees.—Fees must be paid in advance, and are as follows: On filing each original application for a patent, $15. On issuing each original patent, $20. In design cases: For three years and six months, $10; for seven years, $15; for fourteen years, $30. On filing each caveat, $10. On every application for the reissue of a patent, $30. On filing each disclaimer, $10.

Patent Office Statistics.—The following is a statement of patents and designs issued in 1907 according to residence of patentees:—

Alabama, 156; Alaska, 7; Arizona, 38; Arkansas, 150; California, 1,209; Colorado, 460; Connecticut, 920; Delaware, 44; District of Columbia, 296; Florida, 111; Georgia, 264; Hawaii, 16; Idaho, 76; Illinois, 3,470; Indiana, 921; Indian Territory, 61; Iowa, 679; Kansas, 472; Kentucky, 304; Louisiana, 160; Maine, 178; Maryland, 383; Massachusetts, 2,113; Michigan, 1,110; Minnesota, 598; Mississippi, 108; Missouri, 1,130; Montana, 118; Nebraska, 327; Nevada, 39; New Hampshire, 121; New Jersey, 1,504; New Mexico, 27; New York, 5,231; North Carolina, 153; North Dakota, 134; Ohio, 2,493; Oklahoma, 148; Oregon, 219; Panama, 4; Pennsylvania, 3,471; Philippine Islands, 7; Porto Rico, 10; Rhode Island, 271; South Carolina, 72; South Dakota, 127; Tennessee, 232; Texas, 544; Utah, 101; Vermont, 94; Virginia, 274; Washington, 410; West Virginia, 237; Wisconsin, 758; Wyoming, 22; United States Army, 6; United States Navy, 15. Total, 32,603.

Foreign countries: Austria-Hungary, 127; Belgium, 58; Canada, 536; Cuba, 21; Denmark, 40; England, 868; France, 334; Germany, 1,182; Italy, 48; Japan, 9; Mexico, 26; Russia, 23; Scotland, 62; Sweden, 77; Switzerland, 121; other countries, 334. Total foreign, 3,866.

Year	Patents and Certificates of Registration Issued						
	Patents	Designs	Reissues	Total Patents	Trade-marks	Labels and prints*	Total Certificates
1852	890	109	20	1,019	—	—	—
1860	4,363	183	232	4,778	—	—	—
1870	12,157	737	439	13,333	121	—	121
1880	12,926	515	506	13,947	349	203	552
1890	25,322	886	84	26,292	1,415	304	1,719
1891	22,328	836	80	23,244	1,762	137	1,899
1892	22,661	817	81	23,559	1,737	6	1,743
1893	22,768	902	99	23,769	1,677	2	1,679
1894	19,875	928	64	20,867	1,806	4	1,810
1895	20,883	1,115	59	22,057	1,829	3	1,832
1896	21,867	1,445	61	23,273	1,813	33	1,846
1897	22,098	1,631	65	23,794	1,671	30	1,701
1898	20,404	1,803	60	22,267	1,238	235	1,473
1899	23,296	2,139	92	25,527	1,649	611	2,260
1900	24,660	1,758	81	26,499	1,721	830	2,551
1906	31,181	625	159	31,965	10,568	1,365	11,933

*No prints included prior to 1893.

General Patent Statistics.—The following table is compiled from the report of the Commissioner of Patents for 1908. It exhibits the number of patents issued by foreign countries and the United States from the earliest records to December 31, 1907:—

Countries.	To 1870 inclusive.	1871 to 1907.	Total.
Austria	....	50,350	50,350
Austria-Hungary	15,350	67,583	82,933
Belgium	35,044	176,217	211,261
Canada	4,081	108,576	112,657
France	103,934	291,338	395,272
Germany	9,996	202,084	212,080
Great Britain	53,408	329,709	383,117
Hungary	....	36,409	36,409
India	445	9,118	9,563
Italy and Sardinia	4,723	80,195	84,918
Japan	....	13,235	13,235
Russia	1,464	17,796	19,260
Spain	....	38,348	38,348
Sweden	1,629	25,186	26,815
Switzerland	....	39,473	39,473
All other foreign countries	228,074	1,483,617	1,711,691
Total foreign	458,148	2,969,234	3,427,382
United States	120,573	765,062	885,635
Grand total	578,721	3,734,296	4,313,017

DICTIONARY OF TECHNICAL TERMS.

AGRICULTURE, ENGINEERING, MINING, TEXTILE WORKING, ETC.

ABB. Woof; fleece skirtings.

ABBWOOL. Warp yarn.

ACTINOMYCOSIS, LUMPY JAW, or BIG JAW. An infectious disease found in cattle, also in horses, pigs, sheep, deer, and man. Caused by a micro-organism known as the Ray fungus. It is cured by doses of potassium iodid.

ADIT. A nearly horizontal passage from the surface, by which a mine is entered and unwatered with just enough slope to insure drainage.

AERATOR. A machine used in dairying to remove animal and barn odors from milk by causing the milk to ripple over a large exposed surface. By thus cooling the milk rapidly there is less danger of the growth of micro-organisms.

AEROPHORE. The name given to an apparatus that will enable a man to enter a mine filled with explosive or other deadly gases, with safety.

AGALACTIA. The lack of milk in animals after delivery; common among sheep and goats in a contagious form. Death occurs in about 15 per cent. of cases in 20 days.

AGRICULTURAL EXPERIMENT STATIONS. Originated in Germany in 1840. The first in the United States was established at Wesleyan University, Middletown, Ct., in 1875, under the direction of W. O. Atwater. The 60 stations now supported by the government cost about $720,000 from the federal government and $500,000 from state governments. Over 700 persons are employed and 450 annual reports and bulletins are issued to more than half a million addresses.

ALKALI SOILS. Soils abounding in regions of slight rainfall and containing an excess of soluble salts, especially of sodium. They are distinguished as the "black" and the "white" alkali. These tracts are found west of the one-hundredth meridian to the Cascades and into Canada and Mexico. Much of such land is reclaimable.

AMMONITE. A product of rendering establishments containing a large quantity of nitrogen; used as a fertilizer. It is practically the same as a high-grade "dried meat or meal," "animal matter," "tankage," or "azotin."

ANTHRACNOSE. A group of fungous diseases of plants in which the fruit, stems, and leaves are attacked with serious injury.

ANTHRAX. An infectious disease common in cattle and sheep, and also occurring in horses, mules, goats, etc. It is most prevalent in areas subject to inundation. The most effective means of preventing the spread of the disease is by burning the carcasses of animals dead from the disease. Anthrax is spread by flies, dogs, and carnivorous animals. It was the first disease upon which bacterial causation was demonstrated. The anthrax bacillus or *Bacillus anthracis* is found in the blood and tissues of animals suffering from the disease.

ANTICLINAL AXIS. The ridge of a saddle in a mineral vein, or the line along the summit of the vein, from which the vein dips in opposite directions.

ANTICLINE. A flexure or fold in which the rocks on opposite sides of the fold dip away from each other, like the two legs of the letter A.

APHIS. A small pear-shaped bug, usually brown or green in color and not more than one fourth of an inch in length, which infests the leaves, stems, and roots of all kinds of plants.

ARMY WORM. (*Lucania unipuncta*). A common grayish-black caterpillar about one inch in length, which sometimes becomes so numerous as to destroy large areas of grain and other crops.

ARRASTRA. A circular trough in which drags are pulled around by being connected with a central revolving shaft by an arm and chain. Used for grinding and amalgamating ores.

ARSENATE OF LEAD. A valuable insecticide used against the potato bug or Colorado beetle. Its chief advantage over Paris green is the fact that it does not burn foliage; is not easily washed from the leaves by rain; and being white can be seen upon the leaves. Usually applied in the strength of a teaspoonful to a gallon of water. May be combined with Bordeaux mixture.

ATRIPLEX. A genus of plants growing in alkali districts and known as saltbushes. In such localities they are the most valuable forage plants found; but elsewhere they are regarded as weeds. They are common to tropical countries and have been introduced to the arid regions of Australia and California.

BAFFLE. To brush out fire damp.

BALK. (1) A more or less thinning out of a seam of coal. (2) Irregular masses of stone intruding into a coal seam or bulging out of the stone roof into the seam. (3) A bar of timber supporting the roof of a mine or for carrying any heavy load.

BANK. Bobbin frame.

BAR DIGGINGS. (1) River placers subject to overflow. (2) Auriferous claims on shallow streams.

BASQUE. Crucible or furnace lining.

BATTER. The inclination of a face of masonry or of any inclined portion of a frame or metal.

BEAM. Wooden cylinder on which warp is wound in loom.

BEAMING. Winding warp on beam.

BEE MOTH (*Galleria mellonella*). A dull ash-colored, variously streaked moth, whose larvae feed on honeycomb occasioning great damage.

BENCH. (1) A natural terrace marking the outcrop of any stratum. (2) A stratum of coal forming a portion of the vein.

BENCH DIGGINGS. River placers not subject to overflow.

BILLY PLAYFAIR. A mechanical contrivance for weighing coal, consisting of an iron trough with a sort of hopper bottom, into which all the smaller coal passing through the screen is conducted and weighed off and emptied from time to time.

BINDER. Lever of shuttle box.

BINK. Mass of cotton ready for mixing.

BLACK FLUX. Charcoal and potassium carbonate.

BLACK HEAD. A malignant contagious disease of turkeys, due to the presence of bacteria in the intestines.

BLACK JACK. (1) Properly speaking, dark varieties of zinc blende, but many miners apply it to any black mineral. (2) Crude black oil used to oil mine cars.

BLACK LEG or **BLACK QUARTER.** An infectious disease among cattle, and, rarely, in sheep, goats, camels, pigs, and horses. It is often mistaken for anthrax. It runs its course and is fatal in nearly all cases. While medical treatment is of no avail, vaccination has been found a reliable preventive.

BLACK SAND. Dark minerals found with alluvial gold.

BLENDE. Sulphide of zinc; sphalerite.

BLIND LEAD or **BLIND LODE.** A vein having no visible outcrop.

BLIND WEAVING LOOM. Loom with wide warp.

BLOAT. A disease in cattle or sheep caused by the formation of gas in the first stomach. It is also known as hoven or tympanites. Usually brought on by eating too plentifully of green clover, alfalfa, or other legumes, and sometimes of grain. Cathartics, such as linseed oil or Epsom salts, are beneficial. When these fail puncture is necessary.

BLOCKING OUT. Working deep leads in blocks; somewhat like horizontal stoping.

BLOSSOM. The decomposed outcrop, float, surface stain, or any indicating traces of a coal bed or mineral deposit.

BLOWER. (1) A sudden emission or outburst of gas in a mine. (2) Any emission of gas from a coal seam similar to that from an ordinary gas burner. (3) A type of centrifugal fan used largely to blow air into a furnace. (4) A blowdown ventilating fan.

BLOWER. Machine for spreading textile fibers.

BLOW OUT. (1) To finish a smelting campaign. (2) A blow-out shot. (3) The decomposed mineral exposure of a vein.

BOASTING. Dressing stone with a broad chisel called a boaster, and mallet.

BODY. (1) An ore body, or pocket of mineral deposit. (2) The thickness of a lubricating oil or other liquid; also the measure of that thickness expressed in the number of seconds in which a given quantity of the

oil at a given temperature flows through a given aperture.

BOG IRON ORE. Loose earthy-brown hematite recently formed in swampy ground.

BOLL WORM (*Heliothis armigera*). A caterpillar which is very destructive to a great variety of crops.

BOLSTER. Sleeve of spindle in spinning frame.

BONE. Slaty coal or carbonaceous shale found in coal seams.

BONE FERTILIZERS. Bones supply nitrogen and phosphoric acid. Raw bone contains 4 per cent. of nitrogen and considerable phosphoric acid; steamed or gelatinized bone, from 28 to 30 per cent. of phosphoric acid and from 1.25 to 1.75 per cent. of nitrogen. Bone meal is fine ground bone and is quickly available for plant use. Dissolved bone is bone treated with strong sulphuric acid and is a dark-colored, coarse powder. Bone tankage is scraps and is stronger in nitrogen and weaker in phosphoric acid than bone. Bone ash is burned bone, valuable for phosphoric acid—from 27 to 36 per cent. Boneblack is bone carbonized by burning in closed vessels and contains from 32 to 36 per cent. of phosphoric acid. Coarse-ground bone takes longer to break up in the soil than does fine-ground, lasts longer, and is not so quickly available.

BONNET. (1) The overhead cover of a cage. (2) A cover for the gauze of a safety lamp. (3) A cap piece for an upright timber.

BORDEAUX MIXTURE. A fungicide composed of copper sulphate, quicklime, and water. The copper sulphate and the lime are dissolved separately in water and when needed for use are mixed together. There are several strengths used, the common being 4 pounds of copper sulphate, 4 pounds of quicklime, and 50 gallons of water. This is known as the 4—4—50. Other strengths are 6—6—50, and a 10—10—50 used for trees before any leaves or buds appear. To be effective it must be applied as a spray.

BORERS. The larvae of many species of insects, which penetrate trees and plants.

BORT. Amorphous dark diamond.

BOWK. An iron barrel or tub used for hoisting rock and other débris when sinking a shaft.

BOX DRAIN. A square or rectangular wooden or masonry drain, under a railroad, etc.

BRASQUE. A mixture of clay and coke or charcoal used for furnace bottoms.

BRATTICE-CLOTH. Heavy canvas for mine ventilators.

BREAKER. In anthracite mining the structure in which the coal is broken, sized, and cleaned for market.

BREAKING. (1) Forming wool fibers in long lengths. (2) Shortening flax fibers.

BREAKING-DOWN. Said of hard soils when they become mellow and crumbly.

BREAST. (1) A stall, board, or room in which coal is mined. (2) The face or wall of a quarry is sometimes called by this name.

BREAST-AND-PILLAR. A system of working coal by boards or rooms with pillars of coal between them.

BRECCIA. A rock composed of angular fragments cemented together.

BREWERS' GRAINS. The residue of grain (barley) in brewing. It is used as a food for live stock. This ranks with wheat bran and oil meals in feeding value, and contains usually 22.6 per cent. protein and 6.5 per cent. fat. Should be fed only when fresh and sweet.

BROADCASTING. Sowing seed by scattering as uniformly as possible over the land. Hand broadcasting has been largely superseded by the drill. After broadcasting the seed is covered lightly by a harrow or by drawing brush over the land.

BRUSH. (1) To mix air with the gas in a mine working by swinging a jacket, etc., which creates a current. (2) To "brush" the roof of an airway is to take down some of the rock slate, to increase the height or head room.

BUCK QUARTZ, or BULL QUARTZ. Hard non-auriferous quartz.

BUCKWHEAT. Anthracite coal that will pass through a mesh .5 inch and over a mesh .25 inch.

BUDDLING. Washing.

BUMPING TABLE. A concentrating table with a jolting motion.

BUNDLE. 60,000 yards of flax yarn.

BUNT. A parasitic fungous disease attacking wheat. The plant takes on a bluish-green color and never appears ripened. Grains show a black mass of foul-smelling spores on being broken open, giving rise to the popular name of stinking smut.

BURLAP. Wrapping canvas made of flax, hemp, or jute.

BURLING. Picking threads and knots off cloth.

BURR. Waste of raw silk.

BURRING. Removing foreign vegetable matters from textiles.

BUSH. To line a circular hole with a ring of metal, to prevent the hole from wearing out.

BUTT JOINT. One in which the ends of two pieces abut together without overlapping, and are joined together by one or more pieces called covers or welts, which reach across the joint and are fastened at both ends.

BUTTON. The globule of metal, the result of an assay.

CAM or CAMB. A piece fixed on a revolving shaft in such a manner as to produce an alternating or reciprocating motion in something in contact with the piece.

CAMBER. A slight upward curve given to truss or beam, to allow for settling.

CARBOHYDRATE. A term used to denote the starches, sugars, gums, and similar substances in feeding stuffs.

CASE-HARDEN. To convert the outer surface of wrought iron into steel by heating it while in contact with charcoal, or bone dust.

CEMENTATION. The process of converting wrought iron into steel by heating it in contact with charcoal, or of treating charcoal in a bed of hematite ore.

CHARGE. (1) The amount of flux used in assaying. (2) The material fed to a smelting furnace.

CHECKER COAL. Anthracite coal that seems to be made up of rectangular grains.

CHERT. A siliceous rock, often the gangue of lead and zinc.

CHILE BARS. Bars of impure copper, weighing about 200 pounds, imported from Chile, corresponding to the welch blister copper, containing 98 per cent. copper.

CHILL HARDENING. Giving a greater hardness to the outside of cast iron by pouring it into iron molds, which cause the skin of cast iron to cool rapidly.

CHINCH BUG or CHINTZ BUG (*Blissus leucopterus*). A small blackish bug with white wing covers, which is very destructive to grasses and cereals.

CHINE. Fabric woven with variegated and mixed yarns.

CHIP. Straw plait.

CHUCK. The arrangement attached to the revolving shaft, arbor, or mandrel of a lathe, for holding the thing to be turned.

CHURN DRILL. A long iron bar with a cutting end of steel, used in quarrying, and worked by raising and letting it fall.

CINNABAR. Red sulphid of mercury.

CLEW. Thread of warp or yarn.

CLEWING. Straightening warp threads.

COAL MEASURES. Strata of coal with the attendant rocks.

COASTER. One who picks ore from the dump.

COCK-A-BENDY. Tool for twisting ropes by hand.

COLORADO POTATO BEETLE (*Doryphora decemlineata*). A small yellowish beetle with longitudinal black stripes, which feeds, both in the larval and adult stages, upon the leaves of the potato; often doing great damage.

COMPOST. A mixture of fertilizing material which has been subjected to fermentation.

CONTACT LODE or VEIN. A vein lying between two differently constituted rocks.

CONTACT, POINT OF. Union of different formations.

COPPING RAIL. Bobbin rest on the throstle spinner.

CORDING. Setting the heddles, or healds, in the loom.

CORE. (1) A cylinder-shaped piece of rock produced by the diamond drill system of boring. (2)

Anything serving as a mold for something else to be formed around. A term much used in foundries.

COTTER BOLT. A bolt which, instead of a screw and nut at one end, has a slot cut through it near that end, for the insertion of a wedge-shaped key or cotter, for keeping it in place.

COUNTER. (1) A secondary haulage way in coal mines. (2) A cross-cut. (3) An apparatus for recording the number of strokes made by a Cornish pumping engine.

COUNTERSHAFT. A secondary shaft or axle which receives motion from the principal one.

COVER-CROP. A catch crop which is designed to cover the crop in fall, winter, and early spring.

CRAB. A short shaft axle which serves as a rope drum in raising weights; and is revolved either by cog wheels, a winch, or a capstan, of which it is a variety.

CRADLE. A box mounted on rockers, and containing a sieve for washing auriferous alluvial deposit.

CRAMP. (1) A short bar of metal having its two ends bent downward at right angles for insertion into two adjoining pieces of stone, wood, etc., to hold them together. (2) A pillar left for support in a mine.

CRIB. (1) A structure composed of horizontal timbers laid on one another, or a framework built like a log cabin. (2) A miner's luncheon.

CRIBBING. Close timbering, as the lining of a shaft, or the construction of cribs of timber, or timber and earth and rock to support a roof.

CROPPINGS. Portions of a vein as seen exposed at the surface.

CROWN. A cog wheel in which the teeth stand not upon the outer circumference as usual, but upon the plane of its circle.

CULM. Anthracite coal dirt.

CULTIVATOR. An implement used in the tillage of crops, to loosen the surface of the earth and kill the weeds.

CUPEL. A cup made of bone ash for absorbing litharge in assaying.

CUT. A length of yarn; 300 yards.

DEAD LOAD. In a bridge, the weight of the bridge itself with flooring, roof, etc., as distinguished from the live load of passing trains, vehicles, pedestrians, etc. In a train, the engine, cars, etc.; non-paying load.

DEAD ROAST. To completely drive off all volatile substances.

DIRT FAULT. A confusion in a seam of coal, the top and bottom of the seam being well defined, but the body of the vein being soft and dirty.

DOFFER. Comb or cylinder at end of carding machine.

DOG. (1) An iron bar, spiked at the ends, with which timbers are held together or steadied. (2) A short heavy iron bar, used as a drag behind a car, or trip of cars when ascending a slope to prevent their running back down the slope, in case of accident.

DOG IRON. A short bar of iron, forming a kind of cramp, with its ends bent down at right angles and pointed, so as to hold together two pieces into which they are driven.

DOUBLES. Shoestring ribbons woven from doubled warp.

DOUBLING. Spinning or twisting strands of yarn into one.

DOWNCAST. The opening through which the fresh air is drawn or forced into the mine; the intake.

DRAFTAGE. A deduction made from the gross weight of ore when transported, to allow for loss.

DRAW. (1) To "draw" the pillars; robbing the pillars after the breasts are exhausted. (2) An effect of creep upon the pillars of a mine.

DRAWING FRAME. Machine by which textile threads are attenuated.

DRAW-PLATE. A plate of very hard steel, pierced with small circular holes of different diameters, through which in succession rods of iron are drawn, and thus lengthened out into wire.

DRIVING. Excavating horizontal passages, in contradistinction to sinking or raising.

DROP BOX. Shuttle box automatically delivering shuttles as required.

DRY AMALGAMATION. Treating ores with hot, dry mercury.

DUMB DRIFT. A short tunnel or passage connecting the main return airways of a mine with the upcast shaft some distance above the furnace, in order to prevent the return air laden with mine gases from passing through or over the ventilating furnace.

DYKE or DIKE. (1) A wall of igneous rock passing through strata. (2) A fissure filled with igneous matter.

EDGING. Narrow lace.

EGG COAL. Anthracite coal that will pass through a 2.75 inch square mesh and over a 2 inch square mesh.

ENGINE PLANE. An incline up which loaded cars are drawn by a rope operated by an engine located at the top or bottom of the incline.

ENTRY. A main haulage road, gangway, or airway. An underground passage used for haulage or ventilation, or as a manway.

ENTRY STUMPS. Pillars of coal left in the mouth of abandoned rooms to support the road, entry, or gangway until the entry pillars are drawn.

ERGOT. A parasitic fungus which infests a number of wild grasses and which is poisonous to stock.

FACE. (1) The place at which the material is actually being worked. (2) The end of a drift or tunnel.

FALSE SET. A temporary set of timbers used until work is far enough advanced to put in a permanent set.

FALSE WORKS. The scaffold, center, or other temporary supports for a structure while it is being built.

FANCY. A cylinder on the carding machine.

FATIGUE. The increase of weakness produced in materials, by frequent variations in stress or by sustaining heavy loads for a long time.

FAVUS or WHITE COMB. A contagious disease of chickens, in which the comb and neck become coated with a crust sometimes one fourth of an inch thick and the feathers drop off.

FEATHER. A slightly projecting narrow rib lengthwise on a shaft, arranged to catch into a corresponding groove in anything that surrounds and slides along the shaft.

FINE DRAWING. Sewing up faults in a weave.

FINES. Very small material produced by breaking up large lumps.

FINGERING. Thick worsted yarn combed out.

FIRE BOSS. An underground official who examines the mine for gas and inspects safety lamps taken into the mine.

FLAT. (1) District or set of workings separated by faults, old workings, or barriers of solid coal. (2) The siding or station laid with two or more lines of railway, to which the full cars are brought from the working face, and from which the empty cars are taken back.

FLOAT. Broken and transported particles of vein matter, found on the surface of the ground.

FLOATS. Threads crossing without intersecting warp.

FLUMING. Lifting a river out of its bed with wooden launders or pipes, in order to get at the bed for working.

FLUX. Iron ore, limestone, and sand, which are added in various proportions to the charge in a furnace to make the gangue melt up and flow off easily.

FLYER. Double hook bent over bobbin on spinning frame.

FLYER LATHE. Horizontal beam which beats weft into warp.

FOOT-WALL. The lower boundary of a lode.

FOREBAY or PENSTOCK. The reservoir from which the water passes immediately to a water wheel.

FOREPOLING. Driving poles over the timbers so that their ends project beyond the last set of timbers and protect the miner against roof falls.

FOREWINNING. The first working of a seam, in distinction from pillar drawing.

FOUL BROOD. A destructive and highly contagious disease of bees.

FRAME SET. The four legs and cap or collar arranged so as to support the roof of a gangway.

FREE MILLING. Ores requiring no roasting or chemical treatment.

FULLING. Beating cloth to felt threads together.

FUNGICIDES. Substances which are used for the prevention or eradication of fungous diseases

GAD. A small steel wedge used for loosening jointy ground.

GALLOON. Silk, woolen, or mixed braid.

GALLOWS FRAME. The frame supporting a pulley over which the hoisting rope passes to the engine.

GANGUE. The non-metalliferous material in an ore.

GANISTER. A hard, compact, extremely siliceous fire clay.

GAPES. A disease of chickens caused by a thread worm in the windpipe, which causes much gaping or coughing.

GASKET. A band or ring of any compressible material put between the flanges of pipes before bolting, to make them water tight or steam tight.

GASSING FRAME. Machine for burning loose fluff from yarn.

GATEWAY. (1) A road kept through a goaf in longwall working. (2) A gangway having ventilating doors.

GEODES. Large nodules of stone with a hollow place in the center, often lined with crystals.

GIG MILL. Machine which roughens up the nap of cloth.

GILL BOX. Wool combing machine.

GOAF, or GOAVE. That part of a mine from which the coal has been worked away, and the space more or less filled up with waste.

GOB. (1) Another word for goaf. (2) To leave coal and other minerals that are not marketable in the mine. (3) To stow or pack any useless underground roadway with rubbish.

GOB FIRE. Spontaneous combustion underground of fine coal and slack.

GOSSAN. A spongy ferruginous oxid left after the soluble substances have been dissolved out of a lode.

GOUGE. The layer of clay, or decomposed rock, that lies along the wall or walls of a vein.

GREEN CROPS. Crops designed to be plowed under for the purpose of improving the soil.

GREEN MANURING. The plowing under of green crops grown especially for that purpose.

GRILLAGE. A kind of network of timbers laid across each other at right angles; frequently placed on the heads of piles, for supporting piers of bridges, and other masonry.

GRIZZLY. A grating used to separate coarse ore from fine.

GRUB STAKE. The mining outfit or supplies furnished to a prospector on condition of sharing in his finds.

GUDGEONS. The metal journals of a horizontal shaft, such as that of a water wheel.

HACKLE. Steel pin used for straightening out fibers of flax or hemp.

HADE. The inclination of a vein or fault, taking the vertical as zero.

HALF GANG. Section of warp.

HAMMER-DRESS. To dress the face of a stone by slight blows of a hammer with a cutting edge.

HANGING WALL. In metalliferous mining, the stratum lying geologically directly over a bed or vein.

HANK. 560 yards of wool yarn; 840 yards cotton and silk.

HARDPAN. Hard, retentive subsoil.

HAT ROLLERS. Cast-iron or steel rollers shaped like a hat, revolving on a vertical pin, for guiding inclined haulage ropes around curves.

HEAD-HOUSE. When the head frame is housed in, the structure is known by this name.

HEADING. (1) A connecting passage between two rooms, breasts, or other working places. (2) A gangway or entry.

HEADING IN. Cutting back the tips or ends of branches.

HEAVY SOILS. Soils which are hard, dense, lumpy, or those that are very fertile.

HECK. Guide regulating spun yarns in reeling, warping, beaming.

HEDDLE. Eyelets in looped cords hung vertically from transverse bars, and used to carry the warp.

HEER. A length of yarn equal to two cuts.

HESSIAN FLY (*Cecidomyia destructor*). A small two-winged fly, one eighth inch long and of a dark color. Its larvae live on the stems of wheat, which are weakened so that they break down.

HIP ROOF, or HIPPED ROOF. One that slopes four ways; thus forming four angles called hips.

HOGBACK. A roll occurring in the floor and not in the roof, the coal being cut out or nearly so, for a distance.

HOLDING-PLATES. Strong broad plates of iron sunk into the ground, and generally surrounded by masonry; for resisting the pull of cables.

HOLE. (1) To undercut a seam of coal by hand or with a machine. (2) A bore hole.

HOOK WORM. An intestinal disease.

HORSE, or HORSEBACKS. Any irregularity cutting out a portion of the vein.

HORSE POWER. The power that will raise 33,000 pounds one foot high per minute.

HURDLE. Bowing bench of hat-felter.

HYDRAULIC CEMENT. A mixture of lime, magnesia, alumina, and silica that solidifies beneath the water.

INGRAIN. Dye in the wool.

INSTROKE. The right to take coal from a royalty to the surface by a shaft in an adjoining royalty.

INTAKE. (1) The fresh air passing into a colliery. (2) The passage through which the air is drawn or forced in a mine.

JAG-SPIKE. A spike whose sides are jagged or notched.

JARS. In rope drilling, two long links which take up the shock of impact when the falling tools strike the bottom of the hole.

JIG. (1) A self-acting incline. (2) A machine for separating ores or minerals from worthless rock by means of their difference in specific gravity.

JIGGER. Felting machine.

JIGGING. Separating heavy from light particles by agitation in water.

JOGGLE. A joint of trusses or sets of timber for receiving pressure at right angles or nearly so.

KEEKER. An official that superintends the screening and cleaning of the coal.

KEIR. Bleaching vat.

KEY. (1) An iron bar of suitable size and taper for filling the keyways of shaft and pulley so as to keep both together. (2) A kind of spanner used in deep boring by hand.

KOEPE SYSTEM. A system of hoisting without using drums, the rope being endless and passing over pulleys instead of around a drum.

LADE. Channel of water power.

LAGGING. Small round timbers, slabs, or plank, driven in and behind the legs and over the collar of a frame set to prevent pieces of the sides or the roof from falling through.

LAMINAE. Sheets not naturally separated but which can be forced apart.

LAMP STATIONS. Certain fixed stations in a mine at which safety lamps are allowed to be opened.

LANDER. The man that receives a load of ore at the mouth of the shaft.

LAP. Web of carded wool.

LAPPER. Cloth folder.

LAPPING. Blanket of calico printing machine.

LASH. Thong binding warp cords of Brussels carpet.

LATCH. Hinged hook of knitting needle.

LATTICE CARRIER. Endless belt of wooden strips carrying cotton.

LAUNDER. Water trough.

LAY. Of cotton, 120 yards; linen, 300 yards; rope, the style of laying the yarns.

LAY TOP. Conical block of wood kept close to the twining point of rope yarns.

LEACHING. To dissolve out with some liquid.

LEAD. (1) A ledge, lode, or vein. A more or less vertical deposit of ore formed after the rock in which it occurs. (2) In a steam engine, a certain amount of opening of the port valve before each stroke of the piston begins.

LEADER. A seam of coal too small to be worked profitably, but often being a guide to larger seams lying in known proximity to it.

LEUKAEMIA. An infectious and destructive disease of chickens.

LICKER-IN. Small roller working on carder between feeder rollers and main cylinder.

LIME CARTRIDGE. A charge of compressed dry caustic lime made up into a cartridge and used instead of gunpowder in breaking down coal.

LISTER. An implement for planting corn and other crops deeply to better protect them from frost and dry weather.

LISTING. The throwing up of the soil into ridges. Planting with a lister.

LOCO. A disease of sheep, horses, and occasionally cattle, caused by certain species of astragalus commonly known as loco or crazy weed.

LONG TOM. A wooden sluice about 24 feet long, 2 feet wide, and 1 foot high, for washing auriferous gravel.

LONGWALL. A system of working a seam of coal in which the whole seam is taken out and no pillars left, excepting the shaft pillars, and sometimes the main road pillars.

LOOSE END. (1) A portion of a seam worked on two sides. (2) A portion that projects in the shape of a wedge between previous workings.

MARL. A mixture of carbonate of lime and clay with more or less sand, used as a fertilizer.

MARSH GAS. CH_4, often used synonymously with fire damp.

MATTE. The unrefined product of a smelting process.

MAUNDRIL. A pick with two points and shanks, used for getting coal, etc.

MERCERIZE. Giving textile fibers a gloss.

MIDGE, WHEAT (*Diplosis tritici*). A small two-winged fly, the larvae of which are very destructive to the young kernels of wheat.

MILL CINDER. Slag from the puddling furnace of a rolling mill.

MINER'S INCH. A measure of water varying in different districts, being the quantity of water that passes through a hole 1 inch square under a given head.

MINE RUN. The entire unscreened output of a mine.

MITE. Several species of very small insects injurious to plants and animals, as the clover mite, cattle tick, etc.

MITER JOINT. A joint formed along the diagonal line where the ends of two pieces are united at an angle with each other.

MONKEY ROLLS. The smaller rolls in an anthracite breaker.

MONOCLINAL. Applied to an area in which the rocks all dip in the same direction.

MOTHER LODE. The principal lode of any district.

MOTIVE COLUMN. The length of a column of air whose weight is equal to the difference in weight of like columns of air in downcast and upcast shafts.

MOLDBOARD. The curved part of the plow which turns over the earth.

MUESELER LAMP. A type of safety lamp invented and used in the collieries of Belgium.

MUFFLE. A thin clay oven heated from the outside.

MULE. Spinning frame which draws and twists rovings.

MULLOCK. Rock and worthless minerals taken from a mine.

MUNGO. Cloth made of fibers derived from old woolen rags.

NODULES. Concretions that are frequently found in organic remains.

NOILS. Waste from combing machines.

OIL SHALE. Shale containing such a proportion of hydrocarbons as to be capable of yielding mineral oil on slow distillation.

ORE SHOOT. A large and usually rich aggregation of mineral in a vein.

OVERHAND STOPING. The ordinary method of stoping upwards.

PADDOCK. (1) An excavation made for procuring wash dirt in shallow ground. (2) A place built near the mouth of a shaft where ore is stored.

PANEL. (1) A large rectangular block or pillar of coal. (2) A group of breasts or rooms separated from the other workings by large pillars.

PICKING TABLE. (1) A flat or slightly inclined platform on which anthracite coal is run to be picked free from slate. (2) A sorting table.

PILLAR-AND-ROOM. A system of working coal by which solid blocks of coal are left on either side of the rooms, entries, etc., to support the roof until after the rooms are driven up.

PILLOW BLOCK. A kind of metal chair or support, upon which the journals of horizontal shafts are generally made to rest, and on which they revolve.

PINTLE. A vertical projecting pin like that often placed at the top of crane posts.

PLANT LICE. A large group of small bugs, usually pear shaped, green, brown, or black in color, which infest all kinds of vegetation.

PLUCKER. A kind of carding machine for combing wool.

PLY. The number of yarns in a thread.

RADDLE. Warping guide.

RATCHET-AND-PALL. The former is sometimes a straight bar, at others a wheel; in either case it is furnished with teeth between which the pall drops and prevents backward motion.

REED. Two-sided comb of brass wire, set in the loom lathe to beat the weft into the warp.

REVERTED. Said of phosphates which are in the process of becoming insoluble.

RIFFLE, or **RIPPLE.** Cross pieces placed on the bottom of a sluice to save gold; or grooves cut across inclined tables.

RIM ROCK. Bed rock forming a boundary to gravel deposits.

RIPPING. Removing stone from its natural position above the seam.

RIP-RAP. Rough stones thrown into the water to form a foundation, etc.

ROASTING. Heating ores to a temperature sufficient to cause a chemical change, but not enough to smelt them.

ROCK-SHAFT. A shaft which only rocks or makes part of a revolution each way, instead of revolving entirely around.

ROLLS. Cast-iron cylinders, either plain or fitted with steel teeth, used to break coal and other materials into various sizes.

ROUP. A contagious disease of chickens which affects the mucous lining of the mouth, larynx, nose and eyes.

RUST. Parasitic fungi especially injurious to wheat, oats, and other cereals, usually appearing as yellow, brown, or black spots on the leaves or stems.

SADDLE. (1) An anticlinal, a hogback. (2) The rollers and fixtures on top of the piers of a suspension bridge.

SAN JOSE SCALE (*Aspidiotus perniciosus*). A very small insect which attacks the limbs, leaves, and fruit of a great many species of food plants; considered the most pernicious scale insect in the United States.

SAWFLY. A four-winged fly which in the larval stage is highly injurious to vegetation.

SCAB (*Animal*). A contagious disease of sheep due to the scab mite.

SCAB (*Vegetable*). A disease producing black spots or pits on the surface of fruit and vegetables, caused by a minute fungus.

SCALY LEGS. A disease of chickens caused by a mite which burrows under the skin of the legs.

SCARF. The uniting of two pieces by a long joint, aided by bolts, etc.

SCORIA. Ashes.

SCRIMPING BAR. Regulator of the feed to a calico printing machine.

SET OF TIMBERS. The timbers of any framing, whether used in a shaft, slope, or gangway.

SHAFT PILLAR. Solid material left unworked beneath buildings and around the shaft to support them against subsidence.

SHAKING TABLE. An inclined table for concentrating fine grains of ore, which is rapidly shaken by a short motion.

SHEARING. Cutting a vertical groove, in a coal face or breast.

SHEAVE. A wheel with a grooved circumference over which a rope is turned either for the transmission of power or for winding or haulage.

SHEEP TICK (*Melophagus ovinus*). A peculiar fly without wings and with six legs. After the sheep are shorn it migrates to the lambs and causes serious loss among them.

SHEETS. Coarse cloth curtains or screens for directing the ventilating current underground.

SHROUD-LAID. Rope made of four strands.

SHUTTLE. Wooden boat carrying the weft cop across the warp.

SICKENING. A coating of impurities on quicksilver that retards amalgamation or the coalescence of the globules of mercury.

SILAGE. Green forage packed and preserved under pressure in air-tight buildings known as silos.

SINGING COAL. Coal from which gas is issuing with a hissing sound.

SIPHON-CULVERT. A culvert built in the shape of a U, for carrying a stream under an object, and allowing it to rise again afterwards to its natural level.

SKIP. (1) A car for hoisting out of a slope. (2) A thin slice taken off from a breast or pillar or rib along its entire length or part of its length.

SLICKENSIDES. The polished surfaces of vein walls.

SLIP. A smooth joint or crack where the strata have moved upon each other.

SLIVER. Soft rope or fiber formed on the carding machine.

SLUBBING. Reducing sliver to uniform size.

SLUICE BOX. A trough with ripples or false bottom for catching gold.

SMUT. An affection of cereal grains producing a swelling which is at length resolved into a powdery sooty mass.

SOILS. *Sandy.* A soil made up mostly of sand. It is dry, warm, easy to work, but has little absorptive power for water and fertilizers. *Clay.* A soil in which clay predominates. It is apt to be cold, wet, and difficult to till, but has a high absorptive power for water and fertilizing matter. *Loam.* A soil containing about equal parts of clay and sand is called a loam soil; if it contains more sand than clay it is called a sandy loam, and if it contains more clay than sand it is called a clay loam. *Muck.* A soil which contains an unusual amount of vegetable matter. It requires drainage and weathering for a year or so. *Alkali.* In arid regions soils often have accumulations of alkali through them or on the surface. The most common forms of alkali are sulphate and carbonate of soda. An excess of alkali is injurious to plants.

SOW. (1) A tool used for sharpening drills. (2) Iron deposits at the bottom of furnaces.

SPEISS. A basic arsenid or antomonid of iron, often containing nickel, cobalt, lead, bismuth, copper, etc., having a metallic luster of high specific gravity and a strong tendency toward crystallization.

SPELTER. The commercial name for zinc.

SPILES. A temporary lagging driven ahead in loose ground.

SPRAG. (1)A temporary prop used in mining. (2) A stick put through the wheels of a car to prevent their turning.

SPREADER. Flax carder.

SQUARE SET. A variety of timbering used for large excavations.

STANDING BOLT. A bolt with a screw cut upon each end.

STEMMING. Tamping a shot.

STOCKWORK. A rock run through with a number of small veins close together, the whole of which has to be worked in mining such deposits.

STOOP. A pillar of coal.

STOPE. (1) To excavate mineral in a series of steps. (2) A place in a mine worked by stoping.

STOVE UP, or STOVED. Upset. When a rod of iron heated at one end is hammered endwise the diameter of that end is enlarged, and it is said to be upset.

STRIKE (of a seam or vein). The intersection of an inclined seam or vein with a horizontal plane.

STRUT. A prop to sustain compression, whether vertical or inclined.

STUFFING BOX. A device for rendering a joint impervious where there is a hole through which a movable cylindrical body, as the piston rod of a steam engine, slides back and forth, or in which a shaft turns.

STULL. A post for supporting the wall or roof in a mine.

SUBSOIL. That part of the soil which lies below the few inches of improved and productive soil.

SWAGE. A tool, variously shaped or grooved on the face, used by blacksmiths and other workers of metals, for shaping their work.

SYNCLINE. The point or axis of a basin toward which the strata on either side dip. An inverted anticline.

TAMBOUR. Embroidery or fancy weaving apparatus.

TEASLING. Ruffling up the nap of cloth with burrs of the teasel (*dipsacus fullonum*).

TELLURIDES. Ores of precious metals (chiefly gold) containing tellurium.

TEMPLET. The outline of a molding or other article, cut out of sheet metal or thin wood, to serve as a pattern for stonecutters, carpenters, etc.

TENTER. Loom mechanic.

TENTER FRAME. Frame on which fabrics are stretched and dried.

THRIPS. Minute slender insects with four wings, which do considerable damage to various plants, especially grains.

THROW. (1) The vertical distance between the two ends of a faulted bed of coal. (2) The radius, or distance to which a crank "throws out" its arm.

THRUMS. Weft ends and broken warp.

TIPPLE. The dump trestle and tracks at the mouth of a shaft or slope, where the output of a mine is dumped, screened, and loaded.

TRAM. Silk weft.

TROMMEL. A drum, consisting of a cylinder or cone-shaped sheet-iron mantle (generally punched with holes) that revolves. Used for washing ores.

TRUNNIONS. Cylindrical projections or journals, attached to the sides of a vessel, so that it can rotate in a vertical plane.

TUBERCULOSIS (in animals). A contagious disease, similar to tuberculosis in man and due to the bacillus tuberculosis. Most common in cattle and hogs.

UNDERHAND STOPING. Mining a stope downward in such a series that it presents the appearance of a flight of steps.

UNDERPIN. To add to the height of a wall already constructed, by excavating and building under it.

UPTHROW. A fault in which the displacement has been upward.

VELURE. Smoothing and lustering the silk hat.

WALK MILL. Fulling mill.

WALL PLATES. The longest two pieces of timber in a set used in a rectangular shaft.

WARP. Threads on which the weft is woven to form cloth.

WATER TABLE. That part of the soil marked by the upper line of the free or standing water.

WEB. Fabric woven.

WEEVIL. Any one of numerous species of snout beetles in which the head is elongated. The larvae of some of the species live in fruit, nuts, and grains.

WEFT. Thread crossing the warp.

WHIM. A winding drum worked by a horse.

WHIP. A hoisting appliance consisting of a pulley supporting the hoisting rope to which the horse is directly attached.

WHITE DAMP. Carbonic oxid (CO). A product of slow combustion in a limited supply of air.

WILT. A disease of corn, cotton, flax, and garden products, caused by fungi. The plants usually wilt or are stunted and often die.

WINCEY. Cloth of cotton warp and wool weft.

WINNOWING GOLD. Air blowing. Tossing up dry, powdered, auriferous material in the air, and catching the heavier particles not blown away.

WIREWORMS. A number of hard, slender, yellow, or brown larvae which are frequently seen in the soil about the roots of cultivated crops.

WORK LEAD. Base bullion, silver lead.

YARN. Spun fiber.

LEADING INVENTORS OF THE WORLD.

ALBERT, JOSEPH (1825-1886). German photographer, born at Munich; established a studio at Augsburg (1840); removed to Munich (1858); his invention of the "Albertype" process of photomechanical printing was of the utmost importance, and was generally adopted.

ARKWRIGHT, SIR RICHARD (1732-1792). Noted English inventor of cotton-spinning machinery; in 1767 his whole attention was given to the improvement of the spinning frame; his first mill driven by horses was set up in 1768, and he took out a patent for his invention; one of the first to introduce the steam engine into mills.

BELL, ALEXANDER GRAHAM (1847-). Distinguished for his invention of the telephone; born in Edinburgh, Scotland; obtained his education in Edinburgh and at London University; removed to Canada (1870); obtained a professorship in Boston University, and began experiments which resulted in the invention of the telephone, which he patented (1876); many improvements have since been made on this instrument; Professor Bell has always been active in scientific investigation; his work in the instruction of deaf-mutes has been of especial value; among his other inventions are the graphophone and the photophone; has given much time to the study of aërial navigation.

BESSEMER, SIR HENRY (1813-1898). English inventor, born at Charlton; known as the originator of the "Bessemer process" of steel making; when a mere boy he turned his attention to mechanical inventions; in 1856 he announced his discovery that pig iron in the molten form, through which a draught of air was drawn, could be converted into malleable iron; this process was at once put into practical use, and has since undergone no radical improvements; Bessemer was awarded the Telford Medal in 1859; was made president of the Iron and Steel Institute of Great Britain in 1871; his own country was slower than others to recognize the value of his work, but he was knighted in 1879.

BOGARDUS, JAMES (1800-1874). American inventor, born in New York; his inventions include the dry gas meter (1833), a medal-engraving machine (1836), and an eight-day clock; his machine for the manufacture of postage stamps won the prize offered by the British government (1839); he built in New York the first factory constructed of cast iron.

BOTTGER or **BOTTIGER, JOHANN FRIEDRICH** (1682-1719). German inventor, known as the originator of Saxon or Meissen porcelain; a laboratory was erected for him in Saxony, and about 1708 he brought out his celebrated porcelain; attempted to make gold, but without success.

CARTWRIGHT, EDMUND (1743-1823). English inventor; invented the power-loom (1784), and took out several patents for a wool-combing machine (1789-1793), for which the government granted him £10,000 (1809).

COLT, SAMUEL (1814-1862). American manufacturer; born in Hartford, Ct.; inventor of the revolver; secured patents for a revolving pistol (1835), and in 1847 contracted to make 1,000 weapons for General Taylor. Laid one of the first submarine cables in New York harbor (1843), and erected his weapon factory in Hartford (1852).

CORLISS, GEORGE HENRY (1817-1888). American inventor; made the famous "Corliss" engine, the result of many patented improvements.

CROMPTON, SAMUEL (1753-1827). English inventor of the spinning mule, a machine which completely revolutionized the cotton-weaving industry.

DAGUERRE (*da-gair'*), **LOUIS JACQUES MANDE** (1789-1851). French physicist, born at Cormeilles; invented the art of photography on metal, called the "daguerreotype" process; was awarded a pension of 6,000 francs and made a member of the Legion of Honor.

DREYSE (*dri'zeh*), **JOHANN NIKOLAUS VON** (1787-1867). Born at Sömmerda, near Erfurt, Prussia; invented the needle-gun (1827), and made it breech-loading (1836); this firearm was adopted by Prussia in 1841, and used in the war between Prussia and Austria (1866). He was ennobled in 1864.

EADS, JAMES BUCHANAN (1820-1887). Eminent American engineer and inventor, born at Lawrenceburg, Ind.; moved to St. Louis (1833); in 1839 he became clerk on a Mississippi steamboat, and studied engineering by himself; he built, within 100 days, seven iron-clad gunboats of his own design, for the use of the government on the Mississippi; he also constructed the bridge across the Mississippi at St. Louis (1867-1874), one of the finest structures of its kind in the world; Eads undertook at his own risk the task of deepening the channel at the mouth of the Mississippi and, by the construction of jetties, successfully carried the enterprise to completion (1875-1879); the last years of his life were devoted to extensive engineering operations; he spent much time in the planning of a ship-railway across the Isthmus of Tehuantepec; in 1884 the British Society for the Encouragement of Arts, Manufactures, and Commerce awarded him the Albert medal; Eads was the first American to receive that honor.

EDISON, THOMAS ALVA (1847-). Noted American electrician and inventor, born at Milan, Ohio; at an early age he learned telegraphy, and showed a marked fondness for experimenting with electricity; first invention was a "repeater" for use in telegraphy; removed to Boston, and shortly afterward became superintendent of the New York Gold and Stock Telegraph Company; his inventions having placed him in a better financial position he established a laboratory at Menlo Park, N. J., and developed his quadruplex system of telegraphy; among his other inventions are the microphone, the carbon transmitter, the phonograph (1876), the incandescent lamp (1880), improvements in dynamo-electric machinery, storage cells, etc.; over 300 patents have been granted him; the value of his work has been recognized in Europe as well as in America; in 1878 he was made a member of the Legion of Honor, in 1889 a commander; the Albert medal of the British Society of Arts was awarded him in 1892; no one in the nineteenth century has been so successful in applying scientific truths to practical purposes; laboratory is at present located at West Orange, N. J.

EIFFEL (*i'fel*), **GUSTAVE** (1832-). French engineer, born at Dijon; constructed an iron bridge over the Garonne at Bordeaux (1858), the bridge over the Douro at Oporto (1876), and the remarkable Garabit viaduct (1882); the Eiffel Tower (985 feet), the highest structure in the world, was erected by him (1887-1889) at a cost of about $1,200,000; on the completion of the tower, he was made a member of the Legion of Honor; in 1893 he was arrested for complicity in the Panama Canal scandals and was sentenced to fine and imprisonment, but the sentence was revoked.

ENGERTH, WILLIAM, BARON (1814-1884). Austrian engineer born in Pless, Prussian Silesia. He invented the "Engerth system" for freight locomotives, which since its introduction on the Semmering Railroad has found wide adoption on the Continent. He also invented, devised, and built the river gate near Nussdorf which prevents the entrance of ice into the Danube Canal at Vienna, thus preventing the resultant annual inundations.

EVANS, OLIVER (1755-1819). American inventor, born in Newport, Del.; his first inventions include the automatic flour mill, the first high-pressure steam engine, machine for making card teeth (1777), first steam dredge, the "Cornish" boiler, and an engine for the propulsion of river boats. The dredge weighed about 4,000 pounds, and propelled itself to the river.

FITCH, JOHN (1743-1798). American inventor, born at East Windsor, Ct. He brought out in 1787 a steamboat which accomplished three miles an hour. A company for the promotion of navigation on the Delaware proved unsuccessful. Having failed to arouse interest in his invention in France (1793) he became disheartened and committed suicide. It is said that Fulton obtained his ideas from some of Fitch's plans.

FRESNEL (*fray-nail'*), **AUGUSTIN JEAN** (1788-1827). French physicist, born in Broglie; ignorant of the work of Young, he established by experiment the undulatory theory of light; invented the Fresnel lenses for lighthouses, which occasioned a great improvement and complete change in the mode of light-house illumination.

FULTON, ROBERT (1765-1815). Noted American engineer, born at Little Britain, Pa.; in 1787 he went to London, where he studied painting, but soon decided to devote his time wholly to mechanics, and became interested in steam navigation; while in Paris (1796-1803) he constructed a submarine vessel; a small steamboat made by him in 1803 was

entirely successful; returning to New York he launched the *Clermont* (1807), which made regular trips between Albany and New York at the average speed of five miles an hour; Fulton was not the first to apply steam to navigation, but was the first who was successful.

GATLING, RICHARD JORDAN (1818-1903). American inventor, born in Hertford County, N. C.; his principal invention was the revolving gun (1861), which he later improved; the gun was adopted for use by the United States (1866), and by several European governments; among his other inventions may be noted a steam plow, a hemp-breaking machine, and a new gun metal of steel and aluminium; invented the Gatling firearm.

GOODYEAR, CHARLES (1800-1860). American inventor, born at New Haven, Ct.; went into business with his father, but failed in 1834; at this time he began experiments with a view to manufacturing india rubber; after discouraging failures, Goodyear finally succeeded in vulcanizing rubber, and patented his process (1844).

GUTENBERG, JOHANNES (*c.*1400-*c.*1468). Inventor of printing from movable types; with Johannes Fust, set up a press in Mainz, Germany, using wooden types; later printed a Latin Bible with copper or tin types.

HARGREAVES, JAMES (?-1778). English inventor. While carrying on weaving and spinning at home in 1760, he invented the carding machine, a substitute for hand cards. In attempting to spin several threads at once, an accident revealed the necessary position of the spindles, and the spinning-jenny was the result in 1764. Infringement suits prevented the success he deserved.

HENRY, JOSEPH (1799-1878). Noted American physicist, born at Albany, N. Y.; became professor of mathematics at Albany Academy (1826), and experimented with the electro-magnet, which he greatly improved; built the first electro-magnetic telegraph (1831), the first electric motor (1831 or 1832); was secretary of the Smithsonian Institution at Washington (1846-1878); became president of the American Association for the Advancement of Science (1849), and of the National Academy of Sciences (1858); no American since the time of Franklin has done so much to advance the science of electricity.

HOE, RICHARD MARCH (1812-1886). American inventor, born in New York City; began to study printing press manufacture (1827); his rotary newspaper press known as "Hoe's lightning press" appeared in 1846; afterwards he invented the web-perfecting press which, besides printing on both sides of the sheet, cuts and folds the papers. His presses revolutionized the art of newspaper printing.

HOLDEN, SIR ISAAC (1807-1897). English inventor, who produced the lucifer match (1829); in 1848 he established a large factory at St. Denis, near Paris; there he made many improvements in wool-combing machinery, and became wealthy; established his business at Bradford (1864), entered parliament, and was made a baronet.

HOLLEY, ALEXANDER LYMAN (1832-1882). American metallurgist, born at Lakeville, Ct.; in 1854, in partnership with one Colburn, he became editor of the *Railroad Advocate*, and later edited other publications; went to England (1863), purchased the Bessemer patents, started the Bessemer plant at Troy, N. Y. (1865), and erected steel works at Harrisburg, Pa. (1867); became president of the Institute of Mining Engineers (1875), and lectured on iron and steel manufacture at Columbia University (1879-1882).

HOWE, ELIAS (1819-1867). American inventor, born in Spencer, Mass.; known as the inventor of the sewing machine (1845); his machine attracted no notice at first, but its value was soon appreciated and he amassed a fortune of $2,000,000; received a gold medal at the Paris Exposition (1867), and the cross of the Legion of Honor.

JACQUARD (*zhah-kahr'*), **JOSEPH MARIE** (1752-1834). French mechanician, born at Lyons; known for the Jacquard loom, publicly exhibited in 1801; which invention revolutionized the art of weaving.

JOUFFROY D'ABBANS (*zhoo-frwah' dá-bän'*), **CLAUDE FRANCOIS, MARQUIS DE** (1751-1832). A French inventor and engineer; born at Roche-sur-Rognon, France; in 1776 launched a boat propelled by steam, on the Doubs; this experiment failed, as did likewise another attempt in 1783; Fulton admitted the merit of these experiments; it was not until 1816, 13 years after Fulton's success with the steamboat, that the government granted him permission to float his invention; this final attempt was also unsuccessful. In 1840 his claim was acknowledged by the French Academy.

KRUPP, ALFRED (1812-1887). German inventor, metallurgist, and manufacturer, born at Essen, Prussia; in 1852 he invented a method for manufacturing weldless railway tires; his steel siege gun, first made in 1847, was adopted by the Prussian army (1861). It was used with such success in the war of 1870-1871 as to bring Krupp world-wide fame. The Krupp works at Essen, Annen, Kiel, and Gruson in Magdeburg, employ about 43,100 persons.

LESSEPS (*les'eps*), **FERDINAND, VICOMTE DE** (1805-1894). French diplomat and engineer, born in Versailles; evolved the scheme for the Suez Canal (1854), which was begun in 1860, and opened August 15, 1869; commenced the Panama Canal in 1881, but funds for the maintenance of the work were not forthcoming; the management was charged with fraud, and De Lesseps was sentenced to imprisonment and fine; the sentence, however, was never enforced; he received an English knighthood and the Grand Cross of the Legion of Honor for his work on the Suez Canal.

MacADAM, JOHN LOUDON (1756-1836). Scotch engineer, born in Ayr, Scotland; known for the process of "macadamizing"; came to America in 1770, where he made a considerable fortune, and returned to England in 1783; about the year 1810 he became interested in roadmaking, and evolved the process associated with his name; put his theory to practical use at Bristol (1815), and his roads attracted such attention that his method was considered by a committee of the House of Commons as early as 1819. He was voted the sum of $50,000, and, in 1827, was made surveyor general of metropolitan roads. He declined knighthood.

McCORMICK, CYRUS HALL (1809-1884). American inventor, born at Walnut Grove, Va.; common school education; patented his first reaping machine (1834); in 1847 he established the McCormick Harvesting Machine Company at Chicago. His inventions have played an important part in the agricultural development of the United States.

MARCO'NI, WILLIAM (1874-). Italian electrical engineer, born at Griffone, near Bologna; experimented privately with wireless telegraphy (1895), and put his ideas into practical use in England (1896); established communication across the English channel (1899); between Cornwall, England, and Newfoundland (1901); visited the United States, hoping to induce the government to buy the right to use his system; failed in this, but in 1904 the British post office entered into an agreement with him for the transmission of wireless messages; his system is in use in various European navies, notably those of Great Britain and Italy.

MAXIM, SIR HIRAM S. (1840-). English inventor, born at Sangerville, Me.; obtained a patent for an incandescent lamp (1877); secured patents for the gun named after him (1881-1882); removed to London, and began the manufacture of his firearm (1888); in recent years he has given much thought to the problem of aërial navigation; knighted in 1901.

MERGENTHALER, OTTMAR (1854-1899). American inventor, born in Württemberg, Germany; in 1872 he came to the United States and took a government position at Washington, where the signal service apparatus, bells, clocks, etc., were assigned to his care; became associated in 1876 with a mechanical engineering firm in Baltimore, Md., and later, while in the employ of that firm, he began experiments which resulted in the typesetting machine connected with his name.

MONTGOLFIER (*mon-golf-e-ay'*). **JOSEPH MICHEL** (1740-1810), and **JACQUES ETIENNE** (1745-1799). French inventors, born at Vidalon-lez-Annonay, in Ardèche, France; made the first balloon (1783), and ascended from Annonay, heated air being used to inflate the balloon. Joseph is the inventor also of the parachute and the water ram. The brothers received many honors.

MORSE, SAMUEL FINLEY BREESE (1791-1872). American inventor, born at Charlestown, Mass.; was graduated at Yale (1810); studied painting in England; returned to America and became professor of the history of art, at New York University; successfully operated his recording magnetic telegraph (1835); improved his instrument and endeavored to interest the government in his invention, but it was not until 1843 that he received an appropriation of $30,000 for the construction of a line between Washington and Balti-

more; this was successfully completed in 1844; the first submarine telegraph line was laid by Morse in New York harbor (1842).

NEWCOMEN, THOMAS (1663-1729). Born at Dartmouth, England. With Cawley and Savery he invented an atmospheric steam engine which was patented in 1705; he later constructed an engine for drawing water (1723).

NIEPCE, JOSEPH (1765-1833). French inventor; his several inventions include making pictures on metal plates (1813), and the process of fixing images of the camera obscura (1824); Daguerre (1826) perfected Niepce's invention, gaining the title "inventor of photography," which seems to belong to Niepce.

NOBEL, ALFRED BERNARD (1833-1896). A Swedish inventor and philanthropist; born at Stockholm; aided his father in the manufacture of explosives in Russia (1842); studied mechanical engineering under John Ericsson in the United States (1850-1854); invented a gasometer (1857), and an instrument for measuring liquids (1859); in 1867 invented dynamite or giant powder; of his 129 inventions the more important are dynamite, ballistite, the earliest of modern smokeless powders, and artificial india rubber; owned 15 dynamite factories in different parts of the world; left his fortune of $9,000,000 for the foundation of the Nobel Prizes, the interest on which sum is to be divided equally and distributed annually between those five persons making the most important discoveries in physics, chemistry, physiology, or medicine, and for the production of idealistic literature, and the promotion of universal peace.

PALISSY (*pah-le-se'*), **BERNARD** (about 1509-1589). Famous French potter, born in Agen; settled at Saintes (1539) and, after 16 years of the hardest labor, discovered a process for the production of fine enamel; received royal patronage, but was imprisoned in the Bastille (1585), where he died.

READ, NATHAN (1759-1849). American inventor; born in Warren, Mass.; was graduated at Harvard (1781); built a small boat propelled by steam (1789) and a carriage driven by the same motive power (1790); established an iron works at Salem (1796), and made machinery for the manufacture of nails, for pumping, and for threshing; was a member of Congress (1800-1803), and removed to Belfast, Me. (1807); Read's multitubular boiler, invented in 1789, also deserves mention; he was one of the earliest inventors to apply steam to the propulsion of carriages and boats.

REICH'ENBACH, KARL, BARON VON (1788-1869). A German physicist and manufacturer; born at Stuttgart; established foundries in Moravia; was the discoverer of paraffin (1830) and creosote (1833); discovered, as he thought, a new force intermediate between electricity, magnetism, heat, and light, and which he called Od; wrote *Geological Researches in Moravia*, and *Researches on Magnetism*.

REYNOLDS, EDWIN (1831-1909). Inventor of the Reynolds-Corliss engine; introduced the first triple expansion pumping engine; cross-compound hoisting engine for mining work, and several others.

ROBINSON, STILLMAN WILLIAMS (1838-). Inventor and engineering expert; invented the thermometer graduating machine, and various machines for shoe manufacture, having secured about forty patents; author of several books on mechanics.

SANTOS-DUMONT, ALBERTO (1873-). Brazilian aëronaut, born in Sao Paulo; his first balloon ascension was made in 1897 at Paris; he applied the gasolene engine and propeller to an elongated balloon in 1898; attempted to make a dirigible airship, and in 1901 won the Deutsch prize of $20,000; in the same year he was awarded the Encouragement Prize of the Paris Aëro Club, and received a medal from the Brazilian government; he made several successful flights near Monte Carlo in 1902.

SIEMENS (*see'menz*), **SIR CHARLES WILLIAM** (1823-1883). German-English electrician, born at Lenthe, Hanover; removed to England (1844); constructed a regenerative furnace, which was applied to iron and steel working; in 1866 established steel works at Landore, Wales, and, in 1869, a factory at Charlton, West Woolwich, for the manufacture of submarine electric telegraph apparatus; took an active part in the laying of the Atlantic cable (1874); the universities Oxford, Dublin, Glasgow, and Würzburg awarded him honorary degrees; was president of several scientific organizations; knighted in 1883.

SMEATON, JOHN (1724-1792). English civil engineer, born in Austhorpe, near Leeds; designed a machine for measuring a ship's way at sea (1751); became a fellow of the Royal Society (1753); designed and rebuilt the Eddystone lighthouse (1756-1759); afterwards built several bridges, and was the engineer of the Forth and Clyde canal. Smeaton also made important improvements on Newcomen's engine.

STEPHENSON, GEORGE (1781-1848). English engineer; born at Wylam, near Newcastle; inventor of the locomotive; invented a colliery safety lamp (1815); was appointed engineer of the Stockton and Darlington Railway (1821); completed the Liverpool and Manchester Railway (1829). His locomotive "Rocket" (1830) ran 30 miles an hour, outstripping all rivals.

STEPHENSON, ROBERT (1803-1859). English engineer, son of George Stephenson; was in South America (1824-1827); became engineer of the London and Birmingham line completed in 1838; built bridges at Montreal (1859), and over the Menai Strait (1854). Known as the inventor of the tubular bridge.

TREVITHICK, RICHARD (1771-1833). English inventor, born in Illogan, Cornwall; experimented with the high-pressure steam engine and, in 1796, exhibited a model of a steam locomotive. His road engine carried passengers in 1801; in 1804 he successfully operated a locomotive in Wales; applied steam to agriculture Trevithick recognized the value of iron in ship construction, but owing to lack of financial backing his experiments in steam locomotion fell to Stephenson to complete.

TRIPLER, CHARLES E. (1849-1907). American physicist and inventor; experimented much in electricity and gases; greatest achievement was the manufacture of "liquid air," which he applied with remarkable results to the operation of an engine.

TROUVE, GUSTAVE (1839-). French electrician; invented electric polyscope, by which every cavity in the human body may be explored; lamps for use in dangerous places; wound explorer; portable telegraph for use in war; electric motors for small boats.

WATT, JAMES (1736-1819). Scotch engineer and inventor, born at Greenock; famous for his improvements on the steam engine; Watt's engine quickly replaced Newcomen's. He is said to have also discovered the composition of water.

WEDGWOOD, JOSIAH (1730-1795). English potter, born at Burslem in Staffordshire, where he set up his business (1759); invented a cream-colored porcelain, which was so well liked by Queen Charlotte that it was named "Queen's ware"; engaged Flaxman as designer, and produced the well-known "Wedgwood ware," famous for its symmetrical beauty and artistic excellence. Wedgwood accumulated a large fortune, and contributed liberally to charity.

WHEATSTONE, SIR CHARLES (1802-1875). An English electrician; born near Gloucester; published five papers as a result of his researches on sound (1833); patented an instrument for giving signals by electricity, which proved to be the forerunner of the telegraph; invented the stereoscope (1838), and in 1843 produced instruments for measuring the constants of a voltaic series; brought into public notice an electrical device known as Wheatstone's Bridge.

WHITNEY, ELI (1765-1825). American inventor, born in Westborough, Mass.; was graduated at Yale (1792), and went to work in Georgia; is best known as the inventor of the cotton-gin (patented 1794), but was also very successful in the manufacture of firearms; factory was located at Whitneyville, Ct.

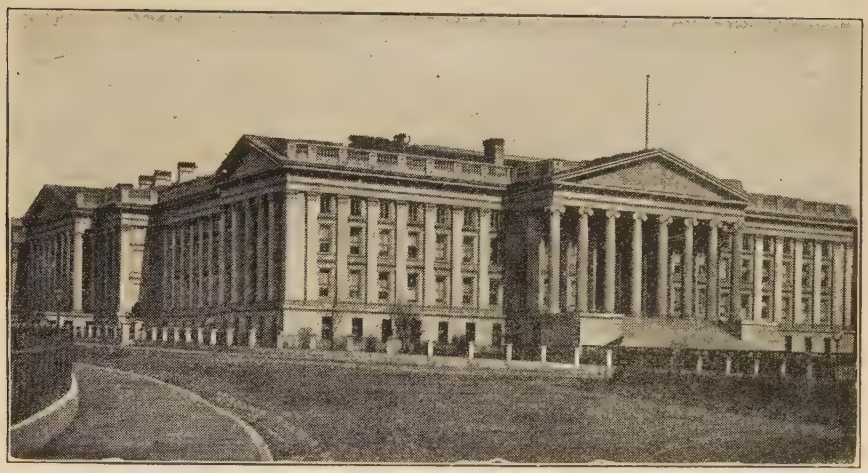
WORCESTER, EDWARD SOMERSET, MARQUIS DE (about 1601-1667). English inventor of the steam engine; served King Charles during the Civil War; imprisoned in the Tower (1654) because of his failure to raise troops in Ireland for the king; published a *Century of Inventions* (1663), which gives an account of the invention of ciphers, signals, mechanical appliances, and of the working of the steam engine invented by him.

WRIGHT, ORVILLE (1871-). An American aëronaut, born in Dayton, Ohio; invented and demonstrated flying machine, with aid of his brother Wilbur; first tested the machine at Kitty Hawk, N. C., in 1903; a successful long distance test was made near his birthplace.

WRIGHT, WILBUR (1867-). An American aëronaut, brother to Orville; born near Millville, Ind.; with his brother he patented the heavier-than-air flying machine in all the leading countries of the world.

BOOK VII.

ECONOMICS.



U. S. Treasury, Washington, D. C.

CAPITAL, LABOR, AND WAGES. TRADES UNIONS. STRIKES. BANKS AND BANKING. LOAN INSTITUTES. DICTIONARY OF COINS AND COINAGE. SINGLE AND DOUBLE MONETARY STANDARDS. PAPER MONEY. STOCKS AND STOCK EXCHANGES, BONDS. CREDIT. INTEREST. INSURANCE. PUBLIC FINANCE. REVENUE. PUBLIC SECURITIES. FINANCES OF THE NATIONS. UNITED STATES TREASURY. SUMMARY OF FINANCIAL EVENTS. DICTIONARY OF BUSINESS AND FINANCIAL TERMS. BIOGRAPHICAL DICTIONARY OF EMINENT FINANCIERS OF THE WORLD.

CAPITAL.

Capital is "that part of wealth which is devoted to obtaining further wealth." The money used to provide shelter, protection, tools, materials, food, and maintenance of the laborers is capital, according to Mill. Though still in dispute, it is generally conceded that capital, from the standpoint of political economy, ought not to include immaterial things such as health, skill, or strength, nor the free gifts of nature.

Circulating capital is that which performs the whole of its office in a single use.

Fixed capital exists in a durable shape, and a return to it is made at definite periods.

Wage capital is that which provides food, shelter, clothes, and protection to the laborer.

Auxiliary capital provides tools, machines, factories, buildings, and even railroads, canals, roads, and ships as well as raw materials.

History of Capital.—Among savage races and primitive men, weapons and implements for hunting and fishing represent the sole capital. As man advanced to the pastoral stage, flocks and herds constituted a larger and richer capital. In the agricultural stage which followed, his agricultural implements and stock formed a more complicated form of capital. In the industrial development of nations the invention of machinery caused such heavy investments that capital took a new and independent position in production. Since the invention of the steam engine and its perfection (1776) the importance of capital has constantly increased until, in the United States at least, one who is without capital, however skilled he may be, is forced to become the hired employee of others.

The natural result from capital is interest. In the Mosaic law and in the early Christian days there was a deep-rooted objection to interest. It would appear that in those days arts and productions were of the simplest kinds, and in the manufactures there was slight need of credit. Whatever was loaned was for immediate use and to relieve distress. Hence the idea that one who profited by the sufferings of others was to be censured. Even the Greek and Roman philosophers—Plato, Aristotle, the Catos, Cicero, Seneca, and Plautus,—all without giving any good reason, were loud in their condemnation of interest. But interest came to be allowed by Greek and Roman laws, and was generally recognized until the Middle Ages, when the Church took up a crusade against it. And while greater reason for its condemnation is given by Gonzalez

Tellez, Thomas Aquinas, and others within the Church, the Protestant reformers such as Zwingli, Luther, Melanchthon, and Calvin more or less openly approved of it. In 1640, chiefly through the profuse writings of Salmasius, the tide turned in favor of interest, and it was defended and supported by nearly all of the great writers. Bacon, North, Locke, Stewart, Hume, Galiani, Vasco, Beccaria, Mirabeau, and Bentham wrote in support of interest, but Turgot was the first to approach the study of interest in a scientific way.

Theories of Capital.—Turgot's theory, like that of Adam Smith, was unsatisfying and somewhat contradictory. For convenience of reference it has been called the Fructification theory, because it likens capital to rent-bearing land, and interest from capital to the fruit which the rented land bears.

Ricardo's theory deals more with the rate of interest than with the reasons for interest, except that if no interest were given capitalists would not invest. Torrens, McCulloch, and others are among the supporters of Ricardo.

The Productive theory maintains that capital produces wealth and that the investor is entitled to a share of what his wealth produces. This theory was first advanced by J. B. Say in 1803, and it has been supported in recent times by Roscher, Leroy-Beaulieu, Scioloja, and others. Roscher claimed that capital produces more goods. Lord Lauderdale in 1804 taught that capital produces more value. This view is supported by Malthus, Henry Carey, Peshine Smith, Thünen, and Strassburger.

J. B. Say advanced the theory that capital, in some unexplained way, has a use value, and that the capitalist ought to be paid interest for being deprived of its use when he invests it. This theory has been taken up and elaborated by German writers; but modern economists criticise it by asking what possible use he would make of it as capital if he did not invest it.

The Abstinence theory was elaborated by N. W. Senior (1836) from hints given by the writings of both Adam Smith and Ricardo. It holds that as all capital is the result of labor, the surplus represents the results of labor performed not with a view to satisfying immediate needs but with an eye to the future. As the capitalist gained this capital by self-denial and abstinence he ought to be indemnified by interest. Though this theory is now generally abandoned it had the support of such eminent economists as J. S. Mill, Jevons, Cairnes, Roscher, Schiiz, Max Wirth, Rossi, Molinari, and Garnier.

The Labor theory is a modification of the abstinence theory, and holds that the capitalist ought to be paid for labor performed, and regards capital as stored-up labor. James Mill, McCulloch, Courcelle-Seneuil, Rodbertus, and Schäffle support this view.

The Exploitation or Socialist theory holds that all goods are the product of human labor; that the laborer does not hold the full value of his labor; but that the capitalist takes advantage of the needs of the laborer who is compelled by hunger to sell his labor to the capitalist at a less rate than its true value. Adam Smith and Ricardo advanced the idea that labor is the source of value; Hodgskin and Sismondi contributed to the development of the idea; but Proudhon, Rodbertus, Lasalle, and Marx took it up and have been its most ardent advocates.

LABOR.

In an economic sense labor is human effort, either physical or mental or both, directed to some useful and productive end, and is the main factor in the production and distribution of wealth.

Different views of labor have been held at different times by various schools of economists. On the decay of feudalism, the Mercantilists set greater store on the accumulation of the precious metals than on the development of labor. Mercantilism differed from modern protectionism in that its chief aim was to perpetuate cheap labor and cheap agricultural products. The French school of Physiocrats, the founder of which (Quesnay) is by many regarded as the father of political economy, held that all labor except agricultural was unproductive, since the latter alone produces a surplus beyond the immediate needs of the laborer. Hume and Adam Smith advanced a broader conception, and showed that labor is the chief factor in the production of wealth. Adam Smith made a curious distinction between productive and unproductive labor, maintaining that the former includes only such activities as lead to some concrete commodity. According to this reasoning, the workers who supply man's material needs are representative of productive labor, whereas the services of the physician who saves a human life must be classed under the category of unproductiveness. The fallacy of such reasoning was emphasized by John Stuart Mill, who pointed out that labor does not create commodities but utilities. It is the form alone which is changed. Whatever adds to the supply of consumable utilities is essentially productive, the difference between one kind of service and another being merely in degree.

Since the days of the old economists, two lines of thought have been developed. The socialists, led by Karl Marx, argue that, since increase of labor produces increase of wealth, private property in capital and land ought to be abolished that labor may receive its proper share of the value which it alone creates. The other school of economists hold that value is not in direct ratio to the quality of labor, but is regulated by the incidents of supply and demand, and is, moreover, a wise adjustment and interdependence of capital and labor.

Labor is of two kinds, forced and free. Arguments in favor of forced labor are no longer seriously adduced; for since the introduction of free labor into England in the fifteenth century and the abolition of slavery in America during the nineteenth, the progress of economic thought has kept pace with the widening conceptions of labor.

Wages.—In its restricted sense wages is the compensation given for hired services. The Physiocrats and the earlier economists, such as Adam Smith and, to a certain extent, Ricardo, taught that the price of labor should afford the worker neither more nor less than a mere subsistence. John Stuart Mill and Malthus developed the wages fund theory, which more recent

economists have generally discarded. Mill and his followers reasoned that, as labor is dependent on capital, wages must be paid out of and limited by the accumulated wages fund at the employers' disposal; hence increase of capital must be the foremost consideration, since by this means a larger sum can be apportioned for wages. The alternative method of increasing wages would be to cut down the number of participants. The fallacy of this theory was not generally recognized till about 1870, when Thornton and Walker vigorously attacked it, and advanced what is known as the productivity theory. Wages, instead of being paid out of capital, represent the price of a product already created by labor. Economically, the product itself is the reward of labor; and, since increase of wages tends to enhance the efficiency of labor and the value of the product, it is clearly demonstrated that higher wages are essentially more economical.

Wages depend both on the productivity of the laborer and on the supply and demand of labor. Generally speaking, the standard of wages in civilized countries tends to keep pace with the standard of living. In comparing the wages of one country or period with those of another, the purchasing power of money must not be lost sight of, for this is the true criterion. A carpenter in India getting 25 cents a day is comparatively better paid than a similar artisan in the United States receiving $3.00 a day. Wages may be paid by time or by piece, or by the two together. Many workmen harbor the fallacy that an increase of wages would automatically attend a reduction of working hours, and consequently of output. But though prices might be inflated by such means, yet, as the price of commodities would go up, the wage-earners themselves would be no better off, while the restricted output would cause them to suffer as a class and swell the ranks of the unemployed. Women and children are held to have a depressing effect upon wages, mainly because they overcrowd the occupations which are open to them, and so reduce the productivity of labor. They lower the rate of wages of men engaged in similar work, and in some pursuits the average wages have fallen so low that men have virtually been driven from the field. Indirectly also they are regarded as bringing about a lowering of wages from the fact that a husband or father will accept a lower rate for himself when he can fall back upon the earnings of the weaker members of his household. Asiatic labor is opposed in the United States more on account of this depressing influence on the labor market than from any question of color.

From a recent report issued by the Bureau of the Census at Washington, D. C., giving the results of an investigation into the earnings of wage-earners, out of a total of 123,703 establishments, and 3,297,819 wage-earners (embracing every form of industry) covered by the report, 2,619,053 were men, 588,599 were women, and 90,167 were children. The pay rolls of these representative establishments for one specified week amounted to $33,185,791, and of this the men received $29,240,287, or 88.1 per cent.; the women, $3,633,481, or 11 per cent.; and the children, $312,023, or nine tenths of 1 per cent. The classification of these wage-earners—men, women, and children—at each amount of earnings, and every industry being represented, is shown in the following table:—

	Number of wage-earners included in the inquiry.	Percentage in the group.	Cumulative percentage.
Less than $3	132,064	4.0	100.0
$3 to $4	150,403	4.6	96.0
$4 to $5	194,301	5.9	91.4
$5 to $6	206,163	6.2	85.5
$6 to $7	262,531	8.0	79.3
$7 to $8	266,012	8.1	71.3
$8 to $9	255,458	7.7	63.2
$9 to $10	378,009	11.5	55.5
$10 to $12	439,208	13.3	44.0
$12 to $15	464,875	14.1	30.7
$15 to $20	390,367	11.8	16.6
$20 to $25	106,700	3.2	4.8
$25 and over	51,728	1.6	1.6
Total,	3,297,819	100.0	....

More than half of all the wage-earners included in the report earned $10 and over during the week. The figures show that the average wage-earner (1904) employed in manufacturing received $10.06 per week. The average man received $11.16, the average woman $6.17, and the average child under 16 years of age $3.46. The highest average weekly earnings reported for the men in any manufacturing industry were $21.68 paid to the cutters of diamonds and other precious stones, as these occupations call for exceptional skill and judgment. Other industries productive of high weekly wages were the manufacture of corsets ($16.99), photo-lithographing and photo-engraving ($16.68), the manufacture of statuary and art goods ($16.45), and the manufacture of watches ($16.16). The manufacture of watches was also conspicuous for the high average earnings of women ($8.93). No other industry employing any considerable number of women reported so large an amount.

The lowest average earnings for men in any industry were $5.23, paid to those engaged in the manufacture of turpentine and rosin. Most of the men employed in this industry were engaged in gathering the crude gum, a task which is in some respects the lowest order of employment reported in connection with the census of manufactures. In the cotton-seed oil and cake industry, another in which the average weekly earnings of men ($6.64) were noticeably low, large numbers were engaged in handling the raw material and the finished product, while comparatively few were employed in the operation of machinery and in the actual work of production. The lowest average earnings for children were $1.84 per week, received by the 105 children engaged in the manufacture of pickles, preserves, and sauces. Of the industries employing a considerable number of women, the grading, roasting, cleaning, and shelling of peanuts is the one in which the earnings of women were the lowest. The average weekly earnings of the 392 women in this industry were but $2.26.

The industries thus far mentioned are of interest because they were extremes and not because they employed large numbers of wage-earners. The average earnings of the men in some of the more important industries were as follows: Iron and steel, steel works and rolling mills, $12.56; iron and steel, blast furnaces,

$11.71; foundry and machine shop products, $11.88; lumber and timber products, $9.25; furniture, $10.16; cotton goods, $7.71; boots and shoes, $11.88; men's clothing, $12.23; women's clothing, $13.52; tobacco, cigars, and cigarettes, $11.14; newspaper and periodical printing and publishing, $13.13; glass, $14.10.

The average weekly earnings of women in some of the industries which employ considerable numbers were as follows: Cotton goods, $6.03; hosiery and knit goods, $6.01; silk and silk goods, $6.11; boots and shoes, $7.60; men's clothing, $6.07; women's clothing, $6.85; shirts, $5.69; glass, $5.08. The only industries employing considerable numbers of children under 16 years of age were glass, shirts, tobacco, cigars, and cigarettes, and the five textile industries. In the cotton industry, which is the most important of the textiles, the average weekly earnings of the children were $3.21. For glass the average weekly earnings were $4.22; for shirts, $2.31; and for tobacco, cigars, and cigarettes, $3.

In connection with the cotton industry, the report gives an interesting comparison of the earnings in the North with those in the South. By confining the comparison to establishments engaged in the manufacture of plain cloths for printing and converting, it eliminates to a considerable extent the differences between the character of the industry in the two sections, and thus presents a fair basis to measure differences in earnings. This comparison shows that the average earnings of men were, in New England, $8.52; in the South, $5.14, a difference of $3.38. For women the average was, in New England, $7.23; in the South, $3.77, a difference of $3.46; while for children the average was, in New England, $4.45; in the South, $2.73, a difference of $1.72. For all classes the average weekly earnings in the North were $7.62, as contrasted with $4.16 in the South. In explaining the low average earnings prevailing in the Southern States, the Census Bureau calls attention to the recentness of the developments of the factory system in that part of the country, to the comparatively large proportion which women and children form of the total number of wage-earners, to the relatively large number of negroes employed, and to the fact that the industries thus far established in the South are those which do not in any part of the country require the most highly paid wage-earners. It is very probable that the further industrial development of the South will result ultimately in a material increase in average earnings.

The Southern States are, moreover, generally conspicuous for low average weekly earnings. The rank of the several geographic divisions in respect to the average earnings of all wage-earners included in this inquiry is as follows: Western, $13.65; North Central, $10.62; North Atlantic, $10.11; South Central, $8.33; and South Atlantic, $7.31.

The leading states with respect to average weekly earnings were: Montana, $18.19; Nevada, $17.76; Arizona, $16.15; and Wyoming, $15.75. New York was 25th, with $10.40; Pennsylvania 23d, with $10.51; Illinois 15th, with $11.55; Ohio 20th, with $10.63; and Massachusetts 32d, with $9.68. North Carolina, with $4.96, and South Carolina with $4.68 reported the lowest averages.

Trades Unions.—One of the most characteristic features of modern industrialism has been the growth of various organizations for the promotion of the interests of wage-earners. The idea is by no means new. The merchant guilds of the Middle Ages had their counterpart in the various clubs of journeymen, while in its elaborate system of caste India for centuries has possessed many of the essentials of trades unionism. But with the rise of new industrial conditions, the lines of demarcation between capital and labor, employer and employed, became more pronounced, and the forces of labor felt the growing need of union to combat the encroachments of the capitalists. As such unions became more numerous and aggressive, rigorous laws were passed against them in England, culminating in the Combination Acts of 1799 and 1800, which made every form of trade combination unlawful. But the principles involved were too deep-rooted; and urged on by the teachings of socialistic propagandists, the trades unionists struggled manfully for recognition till the Trades Union Act of 1871 gave a legal status to their unions. Their rights and powers were further established by the Employers' and Workmen's Act of 1875. The granting of the franchise and the increased political importance of the workman has still further stimulated the development of labor organizations. Employers have come to regard trades unions as a necessary part of the economic machinery, while the employees no longer plead for concessions in the matter of wages and hours of labor, but frequently dictate the conditions of employment.

In the United States, labor organizations first became prominent about 1830, the same as in England. They began to figure in politics in 1829, when a labor delegate was elected to the assembly of the state of New York. The first national union is said to have been the International Typographical Union of North America, established in 1850. Since then almost every trade has been banded together on local or national lines, and many of these organizations, by virtue of their numbers and corporate wealth, have become powerful industrial and political factors. They have their recognized organs; their representatives are prominent in the legislatures of every state; their claims and demands are voiced in Congress. Generally they realize that it is more effectual to redress their grievances by constitutional means than to have constant recourse to the final weapons of all such unions—the boycott and the strike. Boards of arbitration and reconciliation have been introduced by many trades, and public opinion has been assiduously educated and won over. The modern trades union does not usually seek to gain its ends by restricting the output and interfering with production; it relies rather on the effectiveness of the so-called "common rule," that is, a standard rate, a normal day, and collective bargaining. It insists on the maintenance of a minimum wage and satisfactory conditions in the factories and shops. Some economists hold that the "common rule" tends to improve and develop business enterprise, for with its application arises the necessity of increasing the output, and to do this improvements in equipment and management must constantly be devised.

American Federation of Labor.—One of the most remarkable phases of the industrial movement within the last 50 years has been the federation of unions. These confederations have the same general objects as their constituent bodies, and their relationship is somewhat analogous to that of Congress towards the states therein represented. Among such organizations the most important is the American Federation of Labor, organized in Pittsburg in November, 1881, under the name of "The Federation of Organized Trades and Labor Unions," with the idea of establishing a federation of trade unionists distinct from the Knights of Labor. Its present name was adopted in December, 1886, on which date it comprised 13 national and international trades unions, 6 local unions, and 6 city federated unions, with a total membership of about 350,000. With the decline of the Knights of Labor, the federation became paramount. At the end of 1908 it was composed of 116 national and international unions, representing approximately 27,000 local unions. Connected directly with the federation were 38 state branches, 587 city central unions, and 664 local unions, with an aggregate paid membership estimated at 1,540,000. The affiliated unions publish about 245 weekly or monthly papers devoted to the interests of organized labor. The largest affiliated union is the United Mine Workers of America. Each affiliated body manages its own affairs without interference from the federation. A general convention of delegates meets annually in November to elect officers and enact laws and regulations concerning the management and policy of the federation. The official organ is the *American Federationist*. There are 926 "organizers" of local unions acting under the directions of the federation. Their duty is to travel about the country and create trades unions wherever there is an opening among unorganized wage-earners.

Knights of Labor.—This general labor organization in the United States was founded in Philadelphia, in 1869, by Uriah H. Stevens, a garment cutter, and embraces all sorts and conditions of persons over 16 years of age, barring only bankers, lawyers, liquor dealers, and gamblers. At first the order was clothed in secrecy, its very name being guarded; but this policy was abandoned in 1882. The original aim of the founders was to bring about a system of coöperative industry in place of the wages system. They later sought to bring about social and political reforms, such as the nationalization of land, unlimited coinage of silver, the prohibition of child labor and convict labor, the establishment of direct legislation, and compulsory arbitration. It was the first organization of workingmen to admit employers, women, and unskilled laborers, and was opposed to the exclusiveness of trades unions generally. From 1878 to 1887 its membership leaped from 10,000 to 800,000. The least desirable element of the working classes gladly swelled its ranks to batten on its funds in emergencies. Strikes were so recklessly indulged in that the resources of the body were almost depleted, and in 1893 the membership had declined to about 40,000. Though no official figures are published, it is estimated that the membership has not since appreciably increased.

International Labor Congresses.—The first international labor congress was held at Geneva, Switzerland, in 1866, when over 60 delegates assembled from England, Germany, France, and Switzerland. The second international congress was held in the following year at Lausanne, and in 1869 the third and more widely representative congress sat at Basel. This congress almost unanimously resolved that all landed property should be held in common, and advocated "the destruction of all states, national and territorial, and on their ruins the founding of the International State of Laborers." International congresses were held at Dresden (1871), The Hague (1872), at which there was a rupture with the socialistic faction, Paris (1886), Berlin (1891), Zurich (1897). After the congress at The Hague in 1872, the socialists worked on more independent lines, and the first avowedly socialistic labor congress met in Paris (1889). A second was held at Brussels in 1891, when America and every European country except Portugal and Russia were represented. Two years later 385 social delegates met at Zurich, when it was decided that anarchists should not be admitted. The fourth congress at London (1896) was still more important, and its 800 delegates included representatives from Argentina and Australia. This congress urged the abolition of (1) the capitalist class, (2) landed property, and (3) standing armies. The miners, too, have held international congresses annually since 1890, but these assemblages have come largely under the dominance of the radical socialists.

Eight Hour Day.—The effort to shorten the hours of labor in all countries seems to lead toward eight hours as the proper period for a day's work. The history of the movement toward shorter hours begins in England, and may best be outlined as follows:—

1780. London bookbinders worked 14 hours less meal hours.
Trades unions formed by them to reduce the day by one hour.
1786. Day reduced for London bookbinders to 13 hours.
1790. Hours of labor practically unlimited in England.
Children often worked 15 hours a day and over.
1794. Day reduced for London bookbinders to 12 hours.
1796. A board appointed to investigate the condition in the mills at Manchester.
1802. The elder Sir Robert Peel carried a bill to mitigate the worst evils. It accomplished little, but was a precedent for further work.
Hours of only the little children limited to 12 a day.
The English workman labored from 11 to 14 hours.
1806. Unsuccessful strike of London bookbinders.
Shipbuilders and caulkers of New York City organize for ten hour day.
1810. Ten hour day granted to London bookbinders.
1815. Parliamentary inquiry into labor conditions in England.
1817. Robert Owen of New Lanark introduced a ten-and-a-half-hour day in his mill.
1819. Act forbade employment of children under nine in English mills.
Children between nine and sixteen to work 72 hours a week exclusive of meals.
1824. English bill repealing Combination Laws gives trades unions the right to organize.
1825. Sir John Hobhouse carried a bill legalizing Saturday half holiday.
Strikes for ten hour day common in New York.
Artisans in New York work 12 hours a day.
Textile workers, from 13 to 15 hours.
Women and children often began at 4.30 A. M. and worked 15 hours.

1830. Richard Oastler, "the Factory King," began an agitation for a ten hour day, for which he suffered persecution and imprisonment.
1831. Sir John Hobhouse carried a law forbidding any cotton operatives under 21 from working at night; and limiting the week's work for all under 18 to 69 hours.
Workingmen organized in Boston, Mass., to secure a ten hour day.
1832. Tom Sadler, the factory representative, moved a ten hour bill.
Factory girls in Lowell, Mass., worked 78 hours a week.
1833. Lord Ashley (Earl of Shaftesbury) limited the working hours for children under 13 to 48 a week.
1835. Ten hour day became general in Baltimore, Md., before 1840, as a result of strikes.
1840. English commission took up the question of labor and hours.
Mining act forbade employment of women or boys under ten in underground work.
President Martin Van Buren declared a ten hour day in the navy yard at Washington and in other public works.
Shipbuilders generally adopted a ten hour day.
1844. Sir Robert Peel's government passed factory acts lightening the burdens of operatives.
1845. Mass meeting at Pittsburg, Pa. (June 16), attended by over 5,000 persons, advocated ten hour day.
First national industrial convention of the United States held at New York (October) to agitate for ten hours.
Strikes and mass meetings held in many places, and some successful.
Textile workers in Massachusetts petition the legislature for ten hours.
1847. Ten hour bill passed in England by Mr. Fielden.
Shipbuilders in the United States try unsuccessfully to do away with the ten hour day.
1848. Hours of labor in Paris fixed at 10; and at 11 elsewhere in France.
Law of September 9 makes a day of 12 hours the maximum.
1849. First labor legislation in the United States was the law in Pennsylvania which fixed the ten hour day for cotton, woolen, silk, paper, bagging, and flax operatives, and for masons.
1853. Some mills at Lowell, Mass., adopted the ten hour day.
1856. Public meeting of stone masons held at Melbourne, Australia, for eight hour day.
"Eight hour league" formed at a meeting of the united trades in Melbourne, and all union men forbidden to work more than eight hours after April 21, 1856. The 22d of April is there yet known as "Eight Hour Day."
1860. Nine hour movement revived in England, but was unsuccessful on account of depression in trade.
1864. English act extended ten hour day to many trades.
1865. Mills at Stourbridge still running 13 hours.
1866. The National Labor Union formed at Baltimore.
1867. Connecticut passes a law that eight hours shall be a day's work unless otherwise agreed.
1869. General Banks (June 24) introduced an eight hour bill which passed both houses of Congress and was signed at once by President Grant. Law went into force in Charlestown navy yard (July 6), though wages were cut one fifth. Those who wished might work ten hours for the old wages.
Boston Eight Hour League formed by Ira Steward and George E. McNeill.
20,000 workmen parade in New York and demand the eight hour day.
Eight hour leagues formed in many places, and strikes are numerous.
1871. Many strikes in England for a nine hour day.
1872. Nine hours granted in England to many skilled workmen.
1873. Depression retards the movement.
1874. Massachusetts enacts a ten hour law for women and for children under 18.
Hours for textile workers in England reduced from 60 to 56½ per week.
Fifteen inspectors appointed in France to carry out the law of 1848. More stringent factory laws passed in France.
1877. Great railway strikes in the United States caused by wages disputes.
Germany limits working hours.
Switzerland passed the Federal Factory Labor Law limiting maximum working hours to 11 in all factories and to ten on Saturdays and public holidays.
1878. English Factory Acts codified.
Many strikes in England over the efforts of employees to revive the ten hour day.
1880. Massachusetts amends Factory Laws.
Employers endeavor to have law repealed.
Bureau of Labor statistics conducts an investigation.
1881. Report of Carroll D. Wright, Chief of the Bureau, completely vindicated the ten hour law.
Socialist movement began in England.
1882. Royal commission investigates eight hour law conditions in Australia.
1883. Eight hour clause added to the Knights of Labor demand.
1886. Great labor agitation and strikes in the United States. Haymarket riots in Chicago.
1887. Germany limits the day to ten hours for those under 16.
Labor Day instituted in the United States.
1888. Matchmakers' strike in England leads to the forming of many new unions.
Coal miners in Westphalia strike for eight hours.
Gas workers of England have the day reduced from 12 to 8 hours.
1889. Masons at Leipzig carry a ten hour day.

Strikes and Lockouts.—A strike is a concerted refusal to work on the part of a body of employees till their demands are complied with by the employer. A cessation of work due to the employer closing down his establishment in order to force his employees into submission is a lockout. In almost all serious labor disputes both strikes and lockouts occur, and are not always easily distinguishable. In actual effect they are the same. Whether it is called a strike or a lockout is largely a question of tactics, each side having due regard to the important factor of public opinion. To defeat the attitude of the men the employer may seek to employ non-union men to fill the posts of the strikers; while the men, on their side, usually try to prevent this by boycotting and picketing.

Previous to the repeal of the combination laws in 1825, strikes in England were prohibited by law. In the United States, strikes were comparatively few before the Civil War. The first strike of serious proportions was that of railway employees in 1877. From 1881 to 1905 there were 38,303 strikes and lockouts in the United States, affecting 199,954 establishments, and throwing 9,529,434 employees out of work. In the building trade alone during that period there were 9,564 strikes, involving 69,899 establishments, 917,905 strikers, and throwing 1,083,699 out of work.

The average duration of strikes in each establishment for the period under observation was 25.4 days, varying from 12.7 days in 1881 to 35.5 days in 1904. Of all establishments involved in strikes during these years 61.38 per cent. were closed, and the average number of days closed in each establishment was 20.1. The per cent. of establishments in which strikes occurred and which were closed by strikes varied from 45.54 per cent. in 1905 to 85.82 per cent. in 1895. The average days closed in each establishment varied from 12.1 in 1881 to 36.9 in 1894. The average duration of strikes varied from 4.6 days in agriculture to 83.2 days in ore mining. Industries showing high averages are: pottery, 66.5 days; gloves and mittens, 54.6 days; coal and coke, 50.9 days. Of establishments closed by strikes the percentages varied from 9.72 per

cent. in slaughtering and meat packing to 96.71 per cent. in coal and coke. Industries showing a low percentage of establishments closed were: lithographing 10 per cent. and car-building 13.68 per cent. Industries showing a high percentage were: water transportation, 92.46 per cent.; women's clothing, 85.20 per cent.; ore mining, 84.55 per cent.; laundry work, 83.82 per cent.; and men's clothing, 82.86 per cent. The average days closed varied from 3.1 in blacksmithing and horseshoeing to 103.4 in the manufacture of pottery.

The average duration of all lockouts in each establishment during the same period was 84.6 days, the percentage of establishments involved which were closed was 68.25 per cent., and the average days closed were 40.4 in each establishment. The average duration in each establishment varied from 27 days in 1901 to 265.1 days in 1900; the percentage of establishments closed from 30.65 per cent. in 1899 to 91.89 per cent. in 1900, and the average days closed from 10.4 days in 1901 to 95.8 days in 1900. In the buildings trades—the industries in which lockouts were of most frequent occurrence—the average days of duration in each establishment was 105.3, the percentage of establishments closed was 72.49 per cent., and the average days closed 49.3. In men's clothing the average duration was 33.8 days, the per cent. closed 86.30, and the average days closed 32.5.

According to the 21st annual report of the Commissioner of Labor, the principal causes of strikes during the years 1881 to 1905 were as follows:—

CAUSE OR OBJECT.	Per cent. of establishments in which strike			Strikers.		Employees thrown out of work.	
	Succeeded.	Succeeded partly.	Failed.	Number.	Per cent. of total (6,728,048).	Number.	Per cent. of total (8,703,824).
For increase of wages	49.95	18.69	31.36	2,212,195	32.88	2,940,804	33.79
For increase of wages, with various causes	46.87	25.18	27.95	1,331,158	19.79	1,598,199	18.36
Against reduction of wages	34.95	12.74	52.31	856,947	12.74	1,158,485	13.31
Against reduction of wages, with various causes	67.40	6.21	26.39	99,698	1.48	134,744	1.55
For reduction of hours	50.69	10.08	39.23	389,876	5.79	514,496	5.91
For reduction of hours, with various causes	52.35	21.93	25.72	850,694	12.64	1,004,135	11.54
Against increase of hours	50.06	12.85	37.09	65,883	.98	82,808	.95
Against increase of hours, with various causes	61.53	6.15	32.32	22,164	.33	28,686	.33
Recognition of union and union rules	55.48	1.64	42.88	610,088	9.07	743,523	8.54
Recognition of union and union rules, with various causes	38.66	24.58	36.76	795,727	11.83	896,814	10.30
Employment of certain persons	24.81	1.64	73.55	287,883	4.28	402,339	4.62
Employment of certain persons, with various causes	29.03	18.42	52.55	139,767	2.08	163,268	1.88
Method and time of payment, with various causes	55.39	27.60	17.01	235,668	3.50	251,995	2.90
Docking, fines and charges, with various causes	22.07	59.45	18.48	171,404	2.55	177,740	2.04
Working conditions and rules	41.63	3.98	54.39	112,705	1.68	150,769	1.73
Sympathy with strikers and employees locked out elsewhere	20.68	2.79	76.53	259,316	3.85	373,968	4.30

Many plans have been put forward with a view to the adjustment of labor disputes, and the prevention of strikes altogether. Many of these hinge on arbitration in some form or other, such, for example, as an arbitration board formed by the National Civic Federation, or by mutual arrangement, or by government authority. The weak point of all official boards is that their services and decisions may or may not be entertained, whereas in the case of an official board no such possibility arises. It is argued that as men discover that commercial wars are unprofitable, and that their interests are promoted by agreement, the days of strikes will pass away without any state interference whatever. But statistics show no clear indication of any such tendency; whereas, in New Zealand, on the other hand, since the inauguration of compulsory arbitration in 1895, there have been no serious strikes, and such as have occurred have, for the most part, been quickly and satisfactorily adjusted.

Labor Bureaus.—Led by Massachusetts, which instituted a "Bureau of Statistics of Labor" in 1869, 33 states have established similar bureaus. The United States Bureau of Labor (later the Department of Labor) was created in 1885 with Carroll D. Wright as commissioner. Its purpose will be indicated by enumerating some of its annual reports: *Building and Loan Associations; Convict Labor; Cost of Iron and Steel and Cognate Products in This and Other Countries; Economic Aspect of the Liquor Traffic; Hand and Machine Labor; Industrial Depressions; Industrial Education in Different Countries; Railroad Labor; Strikes and Lockouts; Wages and Hours of Labor in the Principal Commercial Countries of the World; Water, Gas, and Electric Light Plants Under Private and Municipal Ownership; Work and Wages of Men, Women, and Children; Working Women in the United States.* An appropriation of $175,000, exclusive of the printing allowance, is voted annually by Congress for the administration of this department. Many of the state bureaus have assumed the functions of free employment agencies, besides the inspection of mines and factories, and arbitration in labor disputes.

France instituted a labor bureau in 1891, Germany in 1892, and England in 1893. Almost all European countries and the British colonies now possess similar departments; and the exact and unbiased information they supply, apart from other services, has proved most valuable.

The strikes and lockouts settled by joint agreement and arbitration during the years 1901 to 1905 were as follows:—

Year.	Strikes.			Lockouts.		
	Number.	Number settled by joint agreement.	Number settled by arbitration.	Number.	Number settled by joint agreement.	Number settled by arbitration.
1901	2,924	149	49	88	10	2
1902	3,162	204	58	78	11	1
1903	3,494	246	66	154	18	3
1904	2,307	130	23	112	17	2
1905	2,077	74	27	109	10	3
Total	13,964	803	223	541	66	11

Labor Legislation.—Legislation in favor of the working classes is a product of the nineteenth century, for only then was the principle of industrial liberty fully recognized and applied. England led the way with its factory acts, intended to safeguard the life and limb of the worker. In the United States, labor legislation was later and has been much fostered by trades unionism. Among the statutes enacted by the states in the interest of labor, the most common are those referring to (1) the protection of life and health, (2) the hours of labor, (3) child labor, (4) convict labor, and (5) employers' liability.

1. Protection of Life and Health.—Various laws are devised differing in detail, but having for their common object the protection of the work-people from accident, disease, and fire, and the maintenance of sanitary surroundings.

2. Hours of Labor.—In 1892 Congress passed a law that eight hours shall constitute a day's work in the government service. Many states, especially in the South, have no legislation at all on the matter; while some states have a ten hour law and others one of eight hours. Labor unions have persistently advocated a compulsory eight hour day which should be universal in its application.

3. Child Labor.—In most states it is illegal to employ child labor in mines, factories, and workshops before a certain age is reached. The age varies from 10 to 14. In the Northern states it is usual to insist on a child receiving so many years' schooling before being allowed to work at all. In the Southern states, especially in Alabama, child labor is legal, and little mites of six years old are sometimes sent to work in the cotton mills.

4. Convict Labor.—Legislation is commonly directed against the products of convict labor being placed upon the open market, the state preferring to support its prisoners in complete or partial idleness rather than let them work usefully for their own maintenance.

5. Employers' Liability.—The employer is held liable for damage to life or limb as a result of his negligence to carry out the requirements of the common law. He must provide a safe work-place, as well as safe tools and appliances; he must give notice of any hidden danger, and issue and enforce rules necessary for the adequate protection of his work-people. Except in a case where any of these statutes are violated by the employer, an employee is held to assume the ordinary risks of his employment, as well as the risk of injury from the negligence of another employee. The principle of employers' liability was extended in England by the Workmen's Compensation Act of 1897, which in effect abolished the question of contributory negligence. In 1900, and again in 1906, the application of this law was still further extended. By a statute of the United States relating to "common carriers by railroad," approved April 22, 1908, it is enacted:—

[Sec. 2.] That every common carrier by railroad in the Territories, the District of Columbia, the Panama Canal zone, or other possessions of the United States shall be liable in damages to any person suffering injury while he is employed by such carrier in any of said jurisdictions, or, in case of the death of such employee, to his or her personal representative, for the benefit of the surviving widow or husband and children of such employee; and, if none, then of such employee's parents; and, if none, then of the next of kin dependent upon such employee, for such injury or death resulting in whole or in part from the negligence of any of the officers, agents, or employees of such carrier, or by reason of any defect or insufficiency, due to its negligence, in its cars, engines, appliances, machinery, track, roadbed, works, boats, wharves, or other equipment.

[Sec. 3.] That in all actions hereafter brought against any such common carrier by railroad under or by virtue of any of the provisions of this act to recover damages for personal injuries to an employee, or where such injuries have resulted in his death, the fact that the employee may have been guilty of contributory negligence shall not bar a recovery, but the damages shall be diminished by the jury in proportion to the amount of negligence attributable to such employee: Provided, That no such employee who may be injured or killed shall be held to have been guilty of contributory negligence in any case where the violation by such common carrier of any statute enacted for the safety of employees contributed to the injury or death of such employee.

[Sec. 4.] That in any action brought against any common carrier under or by virtue of any of the provisions of this act to recover damages for injuries to, or the death of, any of its employees, such employee shall not be held to have assumed the risks of his employment in any case where the violation by such common carrier of any statute enacted for the safety of employees contributed to the injury or death of such employee.

Among other statutes relating to labor may be mentioned those regarding the specific payment of employees in money; the forbidding of employers to withhold wages for imperfect work or damage to material, or to measure wages by screened coal; the restriction of an employer's right to engage whom he will, as, for example, non-union employees; old age pensions (though not as yet in the United States); prohibition of woman's labor in mines; laws pertaining to arbitration; and laws prohibiting boycotting and blacklisting.

BANKS AND BANKING.

A bank is an institution for the custody, loan, exchange, or issue of money. Banks receive from their depositors money on current account or on deposit account. The former is subject to withdrawal by check to suit the convenience of the depositor; the latter can only be withdrawn at the expiration of a certain interval. Interest may or may not be allowed according to the kind of bank and the nature of the arrangement. Banks are authorized to invest and reloan the money intrusted to them, their transactions being subject to state and national laws. Banks perform other services, such as issuing and collecting drafts and bills of exchange, etc., each bank having its own special function.

The history of banking carries us back to dim antiquity. The primitive idea of banking was the custody of other people's money, combined with foreign money-changing. Bills of

exchange would seem to have been the first credit transactions of the ancients, and it has been proved that the Assyrians were familiar with these instruments many thousands of years ago; while the *Bunnyas*, or native bankers, in India have negotiated their *Hoondees* for many centuries. In Greece and Rome bankers, or *argentarii*, as they were called by the Romans, received money on current and deposit account, and dealt in foreign bills of exchange. They also loaned the money in their keeping, charging a higher interest than that allowed to the depositor. So firmly established had the banking system become that by the time of Justinian a special body of laws had been formed dealing with the subject. In the Middle Ages, the Jews performed some of the functions of bankers, but owing to the insecurity of property and the instability of commerce, banking was little more than money lending. The bank of Venice was founded in 1157 to facilitate the handling of a forced government loan, the interest of which was punctually paid. But it was not till after the levying of similar loans in 1480 and 1510 that the Bank of Venice may be considered a bank in the modern sense of the word.

Both Florence and Venice had long been famous for their bankers and money lenders, but not till the rise of the Banco di Rialto at Venice, in 1587, may modern banking be said to have been inaugurated. This bank received deposits on call, and allowed depositors the privilege of transferring their credits by written order. Perhaps the first bank to undertake the custody of depositors' money on an extensive scale was the Bank of Amsterdam, founded in 1609. Like the Bank of Hamburg, and the Banco del Giro, founded in the same century, this bank was not authorized to issue notes or to lend money. The credits of these banks, resting on actual coin deposited, prepared the way for the check and deposit system associated with our modern system of banking. The eighteenth century saw the evolution of two distinctive features of modern banking, viz., the issue of bank notes depending for their acceptance and circulation on the credit of the bank, and the granting of deposit accounts on the credit of the customers. Although bank notes had been employed for many centuries in the East, they were unknown in Europe before 1661. In that year the Bank of Sweden issued notes mainly to avoid the shipment of copper coin. The first bank notes issued in England were the receipts given by the London Goldsmiths for money given into their safe keeping, and these receipts (known as "Goldsmiths' notes") freely circulated in the latter half of the seventeenth century.

In the history of banking in the United States, banks of issue figure most prominently. The old Colonial idea of a "bank" was an institution for loans and not deposits, the loans being usually in the form of notes issued by authority of the Colonial governments. When the Continental paper currency collapsed in 1781, Congress chartered the Bank of North America, with power to issue notes, and so provide a circulating medium for the whole country. Three years later the Bank of New York and the Bank of Massachusetts at Boston were chartered; but the issue of paper money by the various states continued till such issues were prohibited by the Federal Constitution. The First Bank of the United States was chartered on February 25, 1791, with an authorized capital of $10,000,000, one fifth of which was subscribed by the government. Its notes were receivable for all dues to the United States government. Congress failed to recharter the bank in 1811, and its business passed to the State banks. Five years later, the Second Bank of the United States was chartered with an authorized capital of $35,000,000, one fifth subscribed by government. Its efforts to regulate the issues of state banks rendered the bank unpopular. Largely owing to the opposition of President Jackson, the bank was not rechartered, and in 1836 it ceased to be a national institution.

The banking system of the United States (1909) embraces more than 20,000 banks, viz., 6,751 national banks, 11,220 state banks, 842 loan and trust companies, 1,453 savings banks, and 1,007 private banks.

The following statistical table shows the capital, circulation, deposits, and current accounts, etc., of the leading foreign banks, expressed in millions of dollars:—

European Banks.	Capital.	Circulation.	Deposits and current accts.	Loans.
Imp'l Bank of Germany	28.9	456.1	152.4	412.3
Bk'sofIssueofGermany	15.8	37.5	18.1	47.6
B'k of Austria-Hungary	41.9	393.9	31.1	178.4
Nat'l Bank of Belgium	9 6	141.0	17.5	118.5
Nat'l Bank of Bulgaria	1.8	8.6	17.0	11.9
Nat'l Bank of Denmark	6.8	34.9	.8	13.7
Bank of Spain	28.9	311.0	102.4	198.1
Bank of Finland	1.9	18 2	4 2	11.7
Bank of France	35.2	916.2	140 2	142 8
Nat'l Bank of Greece	3.9	23.1	22.9	21.6
Bank of Italy	28.9	224.5	35.0	127.5
Bank of Naples }	11.6	66.6	16.1	3.5
Bank of Sicily }		14.8	10.6	10.9
Bank of Norway	3.5	21 4	1.9	12.0
Bank of Netherlands	8 0	110.6	2.5	62.0
Bank of Portugal	14.6	74.5	29.3	26.5
Nat'l Bank of Roumania	2.9	43 1	....	25.2
Imp'l Bank of Russia	28.3	582.2	235.6	224.2
Nat'l Bank of Servia	1.1	6.6	.6	2.3
Royal Bank of Sweden	86.5	52.8		
Banks of Issue of Switzerland	44.9	46.8	276.3 340.0	381.5 324.5
Imperial Ottoman Bank	24.0	6.1	58.0	35 4
Bank of Algiers	....	22.9	2.2	26.7
Banks of Japan	161.5	170.8	200.8	83.3
Banks of Mexico	162.6	117.5	381.5	338.7
Banks of Central and South America	128.6	29.2	373.0	342.2
United Kingdom (including Colonial and Foreign Joint Stock Banks with London offices)	1,008.9	306.1	7,691.0	6,651.1
Bank of Australasia	102.6	30 8	674.6	557.7
Bank of Canada	95.7	79.5	650 5	718.3
	2,088.9	4,347.3	1,456.1	11,161.1

I. State Banks.—In the years following 1811 the banks specially chartered by the various states rapidly increased, more especially after the suspension of specie payments in 1814. When President Jackson's campaign (known as the "Bank war") against the Second Bank of the United States began in 1830, the aggregate note issues were $61,000,000, while the total amount of specie in the country was only $30,000,000. In 1834 the note issues rose to $94,000,000 and the specie to $41,000,000. The num-

ber of state banks had increased to 713 in 1836, with an aggregate note circulation of over $140,000,000. Unsound principles of banking prevailed, and note issues were frequently expanded beyond all prospect of redemption. In consequence the state banks collapsed at one of the most critical periods of the history of the United States. The panic of 1837, however, had a salutary effect on banking methods, and the note circulation, which had been inflated to $149,000,000 in 1837, shrank to $58,000,000 in 1843, steadily rising again to $202,000,000 in 1861.

The five years' financial crisis from 1837 to 1842 was a memorable epoch in the annals of American development, ranking in importance with the funding of the public debt (1783-1790) and the financing of the Civil War (1861-1865). This crisis decided the fate of the state banks and determined the fundamental policy of all future governments. It took the state banks about 20 years to recover from the widespread disaster. The number of banks increased steadily year by year after 1853, and at the beginning of the Civil War there were about 1,500 state and local banks operating in the Union.

State banks are practically the same as national banks in their operations, except that they have not the privilege of note issue. Previous to 1865 they issued bank notes, but in that year Congress passed a law taxing these notes 10 per cent., which soon resulted in their retirement. In the Eastern States, state banks have virtually disappeared, though they are numerous in other sections of the country.

II. National Banks.—To secure a uniform bank currency, as well as to extend the market for United States bonds, the United States Congress, in 1863, passed a law authorizing the establishment of a number of banks under federal charter, with an aggregate circulation not exceeding $300,000,000. The act was recast in 1864 when the present system was laid down. Each national bank must invest a certain proportion of its capital in United States registered bonds to be deposited at the Treasury. This must not be less than one fourth when the capital is over $150,000 and not less than one third when the capital is below that figure. The provision that no bank was allowed to have a smaller capital than $50,000 was amended in 1900, when the organization of banks with a capital of $25,000 was permitted in towns of 3,000 population. New York was made a central reserve city, and one half of the reserves of banks in reserve cities might be deposited in New York banks. Chicago and St. Louis were subsequently made central reserve cities. The chief amendments to the national banking law were the act of 1874, making the United States Treasury the agency for the redemption of notes, and requiring each bank to deposit with the Treasurer the equivalent of 5 per cent. of its circulation as a redemption fund; the act of 1875, which abolished all limitations upon the volume of circulation, and the act of March 14, 1900, which authorized the issue of notes to the par value of bonds deposited in the Treasury, provided such bonds are not selling at a discount.

All national banks, except the Bank of North America, Philadelphia, are obliged to have the word "National" as part of their name, others not so chartered being prohibited from using this title. This affords protection to the public by giving assurance that such an institution is safeguarded by national restrictions. A national bank may receive on deposit money subject to check—on which it does not, as a rule, allow interest,—issue national bank bills, make loans, collect drafts, and, to a limited extent, may purchase and hold real estate. Among its important duties are the buying and selling exchange; making collateral loans; discounting and negotiating bills of exchange, promissory notes, and other forms of indebtedness.

Ten per cent. of its paid capital stock was formerly the limit which a national bank might loan to any one person. This limit was increased to 10 per cent. of the capital and surplus (provided that 30 per cent. of the capital is in no case exceeded) by an act of Congress in 1906.

National banks are not allowed to have branches, which accounts largely both for the difference between the banking systems of Canada and the United States, and for the many small banks scattered throughout the country.

Since the incorporation of these banks only 5½ per cent. of their total number have been closed on account of insolvency, in nearly every case violations of the national bank laws or fraudulent management being the reason. National banks are the only banks of issue in the United States.

The following statistics are from the annual report of the comptroller of the currency:—

Year ending Sept. 1	No. of national banks.	Capital.	Surplus.	Total dividends.	Total net earnings.	Ratio of dividends to capital.	Ratio of dividends to capital and surplus.	Ratio of earnings to capital and surplus.
1900	3,604	$608,754,600	$251,950,843.42	$48,033,094.39	$87,276,836.60	7.88	5.58	10.14
1901	3,969	635,511,286	268,451,548.00	51,699,779.00	81,853,797.00	9.05	5.72	8.15
1902	4,269	673,763,767	302,513,154.55	68,199,493.62	106,581,476.85	10.92	6.99	10.12
1903	4,700	722,797,806	353,105,524.91	63,565,848.10	109,881,530.97	8.79	5.91	10.21
1904	5,134	761,682,495	390,452,345.00	75,588,889.00	112,936,426.00	9.92	6.56	9.80
1905	5,505	776,175,576	407,643,159.00	73,138,174.00	105,909,385.00	8.95	6.18	9.42
1906	5,876	801,326,590	440,616,689.50	89,264,850.00	127,526,836.00	11.14	7.18	10.26
1907	6,043	842,685,939	522,382,747.59	99,728,239.00	152,235,434.00	11.90	7.30	11.20
1908*	6,751	893,932,010	548,850,476.00	97,336,282.00	131,333,288.00	10.89	6.75	9.10

*To July 1; abstract period changed.

The individual deposits on September 23, 1908, were $4,548,135,165; principal resources, loans, and discounts, $4,750,612,731; United States bonds on deposit to secure circulation, $628,073,040; United States bonds on hand and with the Treasurer to secure public deposits, $89,033,690; specie, $680,185,555; legal tender notes, $188,238,515; aggregate resources, $9,027,260,485.

The circulation outstanding October 31, 1908, was $665,844,192.

III. National Bank Notes.—The issue of

circulating notes by national banking associations was first authorized by an act of February 25, 1863, which was recast in the act of June 3, 1864, entitled "An Act to provide a national currency secured by a pledge of United States bonds, and to provide for the circulation and redemption thereof." This act, with subsequent amendments, was embodied in the Revised Statutes of the United States in 1873. The law has been amended from time to time, and is now contained in what is known as the "National Bank Act."

National bank notes are of equal value throughout the length and breadth of the United States, and complete protection is given to the holder; for each bank must secure unmatured interest-bearing United States bonds, in registered form, equal in amount to the total issue of the notes desired. Thus a safe and sound currency, circulating without discount or distrust throughout the country, is provided.

To provide against too great a contraction in the currency, the total amount of national bank notes outstanding is not allowed by the government to be reduced more than $9,000,000 in any one month, except that notes secured by bonds called for redemption may be retired.

The difference between the interest on the amount invested in bonds and the net receipts from the interest on bonds purchased and the amount received by loaning the circulating notes represent the profit on the issue of the notes.

NATIONAL BANK NOTE CIRCULATION.

National bank notes, lawful money.	Circulation based on U. S. bonds Oct. 31, '07.	Circulation secured by lawful money Oct. 31, '07.	Total circulation Oct. 31, '07.
Total amount outstanding at date named at top of column..	$562,727,614	$47,252,852	$609,980,466
Additional circulation issued during interval	.....	.....	141,273,164
To new banks.....	9,995,080	.....	.....
To banks increasing circulation.....	131,278,084	.....	.....
Lawful money deposited since date named	.....	.....	71,837,864
By insolvent banks..	.....	1,039,033	.....
By liquidating banks	.....	7,149,662	.....
By banks retiring circulation under Section 6 of the act of July 12, 1882.....	.....	26,986,988	.....
By reducing banks..	.....	36,662,181	.....
Aggregate issues and deposits to Oct. 31, 1908.....	$704,000,778	$119,090,716	$823,091,494
Circulation retired during the intervals by withdrawal of bonds by active banks and redemption of notes of inactive banks....	.....	.....	157,247,302
Aggregate notes retired since dates named by insolvent, liquidating and reducing banks and by banks retiring circulation under Section 6, act July 12, 1882.....	77,222,223	80,025,079	.....
Circulation outstanding Oct. 31, 1908....	$626,778,555	$39,065,637	$665,844,192

In payment of taxes, excises, public lands, and all other dues to the United States except duties on imports, national bank notes shall be received at par in all parts of the United States. With the exception of the redemption of the national currency and the interest on the public debt, they are also receivable for all salaries and other debts and demands owed by the United States to corporations, associations, and other individuals within the United States. They must not be counted in the "reserve" of a national bank, as they are not legal tender. The notes of each national bank must be received at par by all other national banks. The Treasurer, but not the assistant treasurers, may redeem the notes in "lawful money" of the United States.

IV. Bank of England.—This greatest of financial institutions is situated in the center of London, and covers an area of about four acres. Its corporate name is, "The Governor and Company of the Bank of England," and its management is in the hands of a governor, deputy governor, and 24 directors, who are elected by the shareholders. Every Thursday the directors meet, and the influence of this gathering is felt throughout the world. The bank is a private corporation. Over 925 persons are employed. "Bank of England" notes are issued by it, and no interest is allowed on deposits. Every night since the riot of 1780 a guard of soldiers has been marched into the bank for its protection.

The institution was devised and founded by William Paterson, the first charter being issued on July 27, 1694, by authority of an act of Parliament. It was stipulated that the entire subscribed capital ($6,000,000) was to be lent to the government at 8 per cent., and an allowance of $20,000 for management. The bank was granted the privilege of issuing "bills payable in coin on demand," and transferable "to bearer on demand." At first these promissory notes had to be indorsed on transference, but in 1704 this statutory requirement was repealed, and from that time the banks in England have issued notes of £5 and upwards. The original charter was for only eleven years, but it has been constantly renewed, the last renewal being in 1844. By the act of Peel's government, the Bank of England was divided into two separate departments—the "issue" and the "banking." The monopoly of the bank to issue notes in London and within a radius of 65 miles (granted in 1826) was left untouched, and is in force to this day. The "issue department" deals only with the circulation of notes, some $150,000,000 being constantly in the hands of the public. The "banking department" differs from other banking concerns, having the management of the public debt and paying the dividends upon it. It also holds the government deposits, assists in the collection of the revenue, and is universally recognized as the bank of other banks. At present the currency of England is largely in the hands of this bank, and the reserves of all London banks are kept there.

In the bank's weekly published statements is given the discount at which it will handle first-class paper. The rate of interest allowed by all the London joint-stock banks on deposits is usually at the rate of one and one half per cent. less than the rate of discount given by the Bank of England. The rate of interest on overdrafts, the discount rate throughout Great Britain, and the interest rates allowed by Lon-

don banks on cash balances of foreign correspondents are all established by the rate of discount allowed by the Bank of England. It also fixes the rate of discount on documentary bills, as to the rebating of interest on account of anticipating repayment. The influence of this rate of discount is felt by all international bills of exchange, and it often acts as a protection to the gold held by the bank itself, increasing the value of money in London, encouraging imports, and checking exports of gold.

The Bank of England is known as the "Old Lady of Threadneedle Street."

The following are some statistics of the Bank of England for the last week of December of the years stated in millions of dollars:—

	Issue Department.			Banking Department.				
Year.	Notes Issued.	Securities.	Bullion.	Capital and "Rest."	Deposits and Post Bills.	Securities.	Notes in the "Reserve."	Coin in the "Reserve."
1874	178.9	75.0	103.9	88.2	133.8	170.2	48.2	3.5
1884	177.8	78.7	99.0	88.3	171.0	202.3	52.6	4.4
1894	235.3	84.0	151.3	88.6	181.1	156.3	106.9	11.4
1903	227.3	92.2	135.0	88.8	282 3	278.3	83.3	9.5
1904	234.4	92.2	141.9	88.7	267.4	255.3	93.4	7.4
1905	228.2	92.2	135.9	89.1	260.6	261.6	81.4	6.6
1906	232.4	92.2	140.2	89.4	252.0	247.9	88.5	5.0
1907	241.0	92.2	148.7	89.1	246.0	236.8	93.4	4.9

V. Bank of England Notes.—The only form of paper money—or bank bills—in general use in Great Britain; their promise to pay, in paper money,—similar to our national bank circulation. Notes are printed and all the machinery of issuing, redeeming, cancellation, etc., is performed by the "issue department." A debt due to the Bank of England from the government is the security of the notes to the sum of £11,015,100; £7,434,900 may be issued against securities, but there must be a deposit of coin or bullion against all additional notes issued. The use of one fifth silver is granted by law, but only gold is used. The total amount of notes issued, according to a recent statement, was $229,702,000. Bank of England notes are legal tender except in Scotland and Ireland.

VI. Bank of France.—After Napoleon had become First Consul, he desired a financial institution that would be subservient to the government, as well as of use to it, and therefore established in 1800 the Bank of France. Its central, or head, office is in Paris, where the interest rates used throughout the country are regulated. These same rates are used in the transaction of the business of discounts and advances at the branches or auxiliaries of the central bank, in or connected with all the principal cities and towns of the country. The rate of discount has never been raised by the bank above 9 per cent.

The government nominates the governor and two sub-governors, while the stockholders, with the exception that three of the regents must be chosen from the treasury disbursing agents, select the general council, consisting of 15 regents and three censeurs.

While very largely under control of the government, shares held by individuals represent ownership in the Bank of France.

Bank notes can be issued by no other institution in the country, and are under the supervision of the regents, who are held responsible and must report to the government. While the bank makes it a point to keep on hand a large amount of bullion and coin, its general assets and credit are the only security for the notes; but if necessary the bank would be supported by the credit of the government. While redeemed in specie, these notes are legal tender. The maximum limit of issue has now reached 5,800,000,000 francs. Payments are generally made by bank notes or specie, since checks are seldom used in France. As a result, a large issue of bank notes is demanded, and six or seven times the amount of deposits is frequently issued by the bank. When gold is demanded for export, a premium is charged, to protect the reserve.

Deposits of public money are received by the bank. It is, in large measure, the government's fiscal agent.

VII. Bank of Germany.—The Reichsbank, or Imperial Bank of Germany. In 1765 the king of Prussia founded a state institution called the Royal Bank, which in 1846 became a bank of issue. This was succeeded by the Imperial Bank of Germany, on December 31, 1875. Like the Bank of France, ownership is represented by shares held by individuals, but in reality it is under government control. The Reichsbank is in Berlin, but has many branches throughout the empire. When its discount rate reaches 4 per cent., all other banks must agree; if lower, they may cut under not more than one quarter of 1 per cent. The rate of discount has never been higher than 7 per cent., and only once in 30 years, for a brief period, did it reach that point.

Discounting bills, both inland and foreign, forms a large part of the bank's business. It also receives, holds, and disburses government funds, receives deposits, and issues circulation, but is obliged by law to keep in its vaults the value of one third of its outstanding notes in cash, which must consist of bullion, coin, or notes of the imperial treasury. Discounted bills must represent the remainder. Upon presentation at any of the branches, its notes must be paid in gold, as they are not legal tender. They are part of the general liabilities of the bank, and have no prior claim upon its assets. The note issue is bound by three limitations. First, in excess of what is covered by its cash reserve, no more than 472,829,000 marks (known as its "Kontingent") can be issued, although this may be increased by the "Kontingent" of a smaller bank of issue, which passes to the Reichsbank when the former goes out of business; second, any excess above this list is taxed 5 per cent. per annum; third, the previously mentioned holding of one third cash.

Eight banks have the privilege of note issue in Germany (*Notenbanken*), and there are some 150 banks not so privileged, among which the most important are the Deutsche Bank, the Disconto-Gesellschaft, and the Dresdner Bank.

VIII. Clearing House.—Previous to the establishment of the London Clearing House in 1775, each banker was obliged to send his clerk to every other banker in London in order to collect his dues. In that year a "clearing house" or common center of exchange was decided upon,

where the representatives of each bank could meet daily for the exchange of bills and the settlement of differences. Eventually the clearing house and each bank making use of it opened an account at the Bank of England, and at the close of each day the balances are now adjusted by transfers from one account to another. What each bank owes the clearing house is shown by the total, and if the amount held by any particular bank is larger than the total amount against it, the clearing house owes it the balance, and it is called a "creditor bank." But if it owes more than the amount of checks which it holds against the other banks, it must pay that amount to the clearing house, and is a "debtor bank." Of course, the total amount of debits will just offset the credits at the close for the day of the clearing house transactions, since that merely acts as a medium for settlement. Naturally, checks drawn by a bank's depositor in favor of another depositor of the same bank do not pass through the clearing house. To enjoy full privileges, a bank must be a member of the clearing house association, and the expenses are shared among the banks.

The country banks are represented in the London Clearing House by their London agent. The more important provincial towns have clearing houses of their own. The great public usefulness of such institutions may be inferred from the fact that checks aggregating about $45,000,000,000 pass through the London Clearing House each year. In the United States similar institutions have been established in over 100 cities, the most important being the New York Clearing House, founded in 1854.

Transactions of New York Clearing House during the years 1893 to 1908 were as follows:—

Year ending Sept. 30.	No. of banks.	Capital.	Clearings.	Balances paid in money.	Average daily clearings.	Average daily balances paid in money.	Balances to clearings.
1893	65	$60,922,700	$34,421,380,870	$1,696,207,176	$113,978,082	$5,616,580	4.9
1894	66	61,622,700	24,230,145,368	1,585,241,634	79,704,426	5,214,611	6.5
1895	67	62,622,700	28,264,379,126	1,896,574,349	92,670,095	6,218,276	6.7
1896	66	60,622,700	29,350,894,884	1,843,289,239	96,232,442	6,043,571	6.2
1897	66	59,022,700	31,337,760,948	1,908,901,898	103,424,954	6,300,006	6.0
1898	65	58,272,700	39,853,413,948	2,338,529,016	131,529,419	7,717,918	5.87
1899	64	58,922,700	57,368,230,771	3,085,971,370	189,961,029	10,218,448	5.37
1900	64	74,222,700	51,964,588,564	2,730,441,810	170,936,147	8,981,716	5.25
1901	62	81,722,700	77,020,672,464	3,515,037,741	254,193,639	11,600,785	4.56
1902	60	100,672,700	74,753,189,435	3,377,504,072	245,898,649	11,110,210	4.51
1903	57	113,072,700	70,833,655,940	3,315,516,487	233,005,447	10,906,304	4.68
1904	54	115,972,700	59,672,796,804	3,105,858,576	195,648,514	10,183,143	5.20
1905	54	115,972,700	91,879,318,369	3,953,875,975	302,234,600	13,006,171	4.33
1906	55	118,150,000	103,754,100,091	3,832,621,023	342,422,772	12,648,914	3.69
1907	53	129,400,000	95,315,421,238	3,813,926,108	313,357,569	12,545,809	4.00
1908	50	126,350,000	73,630,971,913	3,409,632,271	241,413,022	11,179,122	4.63

The exchanges of the various clearing houses of the United States cities were as follows for the years ending September 30, 1907 and 1908:—

	1907.	1908.
New York	$95,315,421,238	$73,630,971,913
Boston	8,548,822,227	7,096,412,351
Chicago	12,265,923,407	11,425,304,804
Philadelphia	7,508,096,431	6,528,291,691
St. Louis	3,180,598,102	3,020,989,964
San Francisco	2,299,411,061	1,711,329,602
Baltimore	1,499,394,515	1,265,049,236
Pittsburg	2,761,441,799	2,190,479,976
Cincinnati	1,399,770,100	1,202,794,250
Kansas City	1,605,752,939	1,733,550,111
New Orleans	1,030,268,162	815,937,419
Minneapolis	1,120,680,545	1,077,894,272
Detroit	726,744,655	667,397,268
Louisville	670,752,450	562,448,145
Cleveland	914,658,049	766,518,416
Other Cities	13,814,779,578	12,543,324,980
Total	$154,662,515,258	$126,238,694,398

IX. Savings Banks.—Organized under state laws or, if in the District of Columbia, under Federal laws, with the expectation that the deposits received shall be chiefly the savings of small earners,—laborers, wage-earners, and small salaried persons in general. These are supposed to be unable to intelligently invest money for themselves, and a suitable form of investment for whose small savings is not easily found. The "Board of Investment" or "Finance Committee" are elected for the purpose of safely investing the aggregate savings deposited in the bank. In some states the legal restrictions controlling the investment of savings bank funds are very lax and unsafe, in others very strict and conservative. Of the latter class are those of New York, Massachusetts, Connecticut, and possibly Vermont, Maine, and New Hampshire.

According to the rules and regulations of the bank, interest ranging from three to five per cent. is paid on money deposited.

Daniel Defoe originated the modern "savings bank" idea, suggesting it in 1697. But "father of savings banks" is the title given to Rev. H. Duncan, of Ruthwell, Dumfriesshire, who, in 1810, established one which accumulated $5,800 in four years. Savings institutions consider safety before profit, and afford a sound investment.

The estimated deposits of all the savings banks of this country are $3,200,000,000, belonging to 7,696,229 persons and divided among 1,237 banks.

The following table, compiled from the report of the comptroller of the currency, shows the savings banks, depositors, and deposits in the United States every ten years from 1830 to 1890 and annually since 1897:—

Year.	Number of savings banks.	Number of depositors.	Deposits.
1830	36	38,085	$6,973,304
1840	61	78,701	14,051,520
1850	108	251,354	43,431,130
1860	278	693,870	149,277,504
1870	517	1,630,846	549,874,358
1880	629	2,335,582	819,106,973
1890	921	4,258,893	1,524,844,506
1895	1,017	4,875,519	1,810,597,023
1897	980	5,201,132	1,939,376,035
1898	979	5,385,746	2,065,631,298
1899	942	5,687,818	2,230,366,954
1900	1,002	6,107,083	2,449,547,885
1901	1,007	6,358,723	2,597,094,580
1902	1,036	6,666,672	2,750,177,290
1903	1,078	7,035,228	2,935,204,845
1904	1,157	7,305,443	3,060,178,611
1905	1,237	7,696,229	3,261,236,119
1906	1,319	8,027,192	3,482,127,198
1907	1,415	8,388,811	3,690,078,945
1908	1,453	8,706,848	3,660,553,945

In European countries savings banks have been principally encouraged by public authorities. The prevailing type in Germany is the municipal savings bank. Similar banks are common in France, Austria, and Italy; there are also a few in Denmark, Sweden, Russia, and Japan. Many of these banks pay as much as four per cent. interest, and are thus a great attraction to small depositors. In England postal savings banks were established under an act of 1861, and largely took the place of the trustee savings banks. In 1870 Belgium reorganized the state savings bank and made the post office the medium for the collection and payment of deposits, the financial control, however, remaining independent of the post office. Postal savings banks were introduced into Italy in 1876, in the Netherlands in 1881, in France and Sweden in 1882, in Austria in 1883, and in Hungary in 1886. Japan, Russia, India, and most of the self-governing British colonies have adopted the postal savings bank system. The following table shows the number of depositors and amount of deposits in foreign countries:—

Countries.	Date of reports.	Number of depositors	Deposits.	Average deposit account.	Average deposit per inhabitant.
Austria	1905–6	5,685,547	$1,086,797,635	$191.15	$39.95
Belgium	1906	2,419,740	156,733,934	64.77	21.65
Bulgaria	1904	124,007	2,723,182	21.95	.68
Chile	1908	198,419	22,876,142	115.29	6.73
Denmark	1906	1,352,490	223,628,544	165.35	86.01
Egypt	1907	74,179	1,928,749	26.00	.17
France	1906	12,462,900	921,150,000	73.91	23.46
Germany	1905	17,947,538	3,016,719,512	168.09	49.88
Hungary	1906	1,632,450	319,666,881	239.93	19.13
Italy	1907	6,953,078	667,645,797	96 02	19.69
Japan	1906 8	14,471,560	99,289,016	6.86	2.01
Luxemburg	1906	57,491	9,372,493	163.03	37.99
Netherlands	1905–6	1,658,985	93,214,669	56.19	16.43
Norway	1906	826,873	108,124,517	130.76	46.59
Roumania	1904	157,099	8,038,960	51.17	1.28
Russia (including Asiatic part)	1908	6,376,996	595,598,312	93.40	4.07
Spain	1907	469,491	53,553,238	114.07	2.74
Sweden	1907	1,988,336	187,233,225	94.17	35.08
Switzerland	1900	1,300,000	193,000,000	148.46	62.26
United Kingd'm	1907	12,471,755	1,020,271,823	81.81	23.14
Total, Foreign Countries		92,520,410	$9,297,682,919	$100.49	$11.55

X. Legal Investments for Savings Banks.—Circulars of bond houses often contain expressions such as "Legal for New York savings banks," "Legal for Connecticut savings banks," given that a bank official will know that he may in strict compliance with the law purchase such bonds, and, since that is true, the private investor may feel safe in purchasing the same. For in what stocks, bonds, etc., a savings bank may invest the money of its depositors is specifically regulated by the laws of the greater number of states. Of all the eastern states, New Hampshire, Maine, Vermont, Connecticut, Massachusetts, and New York, in climax order, most strictly limit their savings banks' investments, while there is very little limitation upon those of Maryland, Pennsylvania, and New Jersey, and practically none upon those of Rhode Island. Naturally the investments of the first named are generally considered the safest for the public.

XI. Trust Company.—A corporation chartered under state laws to receive and execute trusts. Unlike national banks they are not subject to government control, though they may perform the functions of ordinary banking institutions, but may not issue bank bills. The laws regulating the transactions of trust companies differ widely in the various states. The first corporation in the United States with the powers of trustee is the Farmers' Insurance and Loan Company (later the Farmers' Loan and Trust Company) chartered in New York in 1822. Eight years later the New York Life Insurance Company was established, and in 1836 the Pennsylvania Company was incorporated as a trust by the State of Pennsylvania. The number of such companies increased more rapidly after the Civil War, and a remarkable development was witnessed during the years 1880 to 1890, the number of companies rising to 149. Their number rose from 290 in 1900 to about 1600 in 1908, with deposits exceeding $2,000,000,000. This enormous growth is largely due to the fact that many corporations have been chartered as trust companies instead of banks in order to benefit by the greater latitude allowed to the former under the laws.

Trust companies receive deposits subject to check, allowing as a rule interest of from two to three per cent. on such accounts. It is probably due to this fact that their business has increased so extensively in recent years. Another reason is that their public usefulness is being more generally recognized, and it is becoming more usual to appoint a trust company as executor, trustee, guardian, or administrator than to appoint private individuals; for the company is regarded as a permanent institution, and consequently more to be relied upon.

The following statement shows the resources and liabilities of loan and trust companies, as well as state banks, savings banks, and private banks, 1908:—

Classification.	State banks. 11,220 banks.	Loan and trust companies. 842 companies.	Savings banks. 1,453 banks.	Private banks. 1,007 banks.	Total. 14,522 banks.
Resources.					
Loans on real estate	$188,352,185	$153,727,485	$1,440,061,503	$19,610,740	$1,801,751,913
Loans on other collateral security	127,270,669	821,341,681	66,624,785	7,521,699	1,022,758,834
Other loans and discounts	2,090,944,681	404,412,308	364,362,059	80,226,816	2,939,945,864
Overdrafts	29,447,901	860,744	1,050,343	1,796,144	33,155,132
United States bonds	2,888,514	555,303	13,860,545	297,157	17,601,519
State, county, and municipal bonds	3,729,479	86,639,659	587,155,390	1,100,443	681,624,971
Railroad bonds and stocks	2,698,260	29,576,312	618,193,415	550,901	651,018,888
Bank stocks	184,385	4,805,843	24,265,271	205,348	29,460,847
Other stocks, bonds, and securities	492,935,533	651,298,154	343,465,167	5,821,879	1,493,520,733
Due from other banks and bankers	549,297,603	391,573,223	163,616,708	27,298,378	1,131,785,912
Real estate, furniture, and fixtures	136,146,988	97,112,461	57,010,988	6,448,497	286,718,934
Checks and other cash items	71,251,438	5,878,676	779,228	1,529,589	79,438,931
Cash on hand	308,736,342	118,398,874	43,483,533	8,497,540	479,116,289
Other resources	28,754,507	96,452,153	85,604,217	636,349	211,447,226
Total	$4,032,638,485	$2,865,632,876	$3,809,533,152	$161,541,480	$10,869,345,993

Liabilities.	State banks. 11,220 banks.	Loan and trust companies. 842 companies.	Savings banks. 1,453 banks.	Private banks. 1,007 banks.	Total. 14,522 banks.
Capital stock	$502,513,303	$278,408,759	$36,013,455	$21,122,836	$838,058,353
Surplus fund	217,112,085	370,145,308	244,711,801	5,556,239	837,525,433
Other undivided profits	86,503,972	45,894,591	39,412,250	3,475,238	175,286,051
Dividends unpaid	682,749	467,115	.....	35,160	1,185,024
Individual deposits	2,937,129,598	1,866,964,314	3,479,192,891	126,673,158	8,409,959,961
Due to other bank and bankers	207,432,987	163,014,678	3,187,417	1,561,453	375,196,535
All other liabilities	81,263,791	140,738,111	7,015,338	3,117,396	232,134,636
Total	$4,032,638,485	$2,865,632,876	$3,809,533,152	$161,541,480	$10,869,345,993

LOAN INSTITUTES.

Various organizations, for the most part co-operative, are designed to provide a safe investment for the savings of persons of small means, and to loan funds to members at reasonable rates, for the purpose of housebuilding and the like. They exist under various designations, such as homestead aid associations, mutual loan associations, coöperative banks, corporative savings and loan associations, building societies, etc. In Great Britain such associations are incorporated by registration by the registrar of friendly societies, with whom their rules must be filed. A society is there permitted to borrow to the extent of two thirds of the amount advanced on mortgages; for sums beyond this the members of the managing committee are personally liable. In the United States, building and loan associations are in many states placed under the same laws as savings banks, while in others they are free from special regulations.

Building and Loan Associations.—Incorporated under the laws of many of our states, this form of bank encourages real estate investments, the owning of homes, and the saving of money, by assisting those of limited means to accumulate money for making improvements on lands, paying the incumbrances thereon, and erecting buildings. According to the Department of Commerce and Labor, it may be estimated that about 400,000 buildings and homes have been acquired by this means. Seventy per cent. of the shareholders in the local association are working people.

To join a Building and Loan Association, a person becomes a subscriber to one or more shares whose final value is usually $200. By so doing he pledges himself to pay a stated sum in fixed periodical installments—perhaps once a month—and must suffer certain prescribed penalties should he fail to do so. These payments he agrees to make until the shares are fully paid, that is, reach their stated value, the "fully paid" requirements being completed more quickly because of the proportion of the earnings of the institution which go to the shareholders' credit. When an association has on hand money to loan, a shareholder may, up to the face value of his shares, borrow from the association money upon real estate, paying a small premium in addition to legal rate of interest. The plan of fixing the premium is now generally adopted; but formerly the shareholders were offered at stated intervals the loanable money of the association, it being each time awarded to the best bidder. Using the shares as collateral, some of the associations will loan money to the members up to a certain percentage (say 90 per cent.) of the amount paid in.

When all the required payments upon shares have been made, the return of his money, plus his share of the earnings of the association, may be demanded by the subscriber.

In the United States the first institution of this kind was organized in Frankford, Pa., in 1831, and in the next twenty years a number of similar associations were established in Philadelphia, though none were incorporated till 1849. After the Civil War their numbers rapidly increased until in 1876 there were in Philadelphia alone over 450 associations.

In England building and loan associations are known as "building societies": the first originating in Birmingham in 1781. Their numbers increased considerably during the nineteenth century, and special legislation was enacted in 1838 and 1874. Similar societies exist in most European countries; in Germany they are called *Baugenossenschaften.*

According to the Secretary of the United States League of local Building and Loan Associations the statistical returns for 1907-1908 are as follows:—

States.	No. of associations.	Total membership.	Total assets.
Pennsylvania	1,400	374,950	$146,915,600
Ohio	644	321,780	132,714,147
New Jersey	415	143,886	67,802,407
Illinois	502	100,680	50,074,144
Massachusetts	135	114,705	47,220,074
New York	240	107,450	37,633,163
Indiana	334	117,974	34,040,117
California	110	33,565	19,522,896
Michigan	55	39,958	14,157,529
Nebraska	66	39,898	11,422,890
Louisiana	50	25,437	10,328,307
Missouri	118	20,625	8,839,903
North Carolina	81	21,469	5,355,536
Kansas	48	16,343	5,118,842
Iowa	56	15,950	4,577,214
Wisconsin	52	12,200	4,490,486
West Virginia	39	10,495	3,834,544
Maine	35	9,345	3,676,453
Tennessee	15	4,658	2,590,204
New Hampshire	16	7,110	1,915,187
Connecticut	13	2,731	1,804,857
Minnesota	18	3,085	1,433,990
North Dakota	7	2,200	1,286,681
Other States	975	292,625	114,753,275
Total	5,424	1,839,119	$731,508,446

Following is the statement of receipts and expenditures by local associations in 1906:—

Receipts: Weekly dues, $176,941,728; paid-up stock, $15,697,056; deposits, $44,070,000; loans, repaid, $143,264,112; interest, $39,692,832; premium, $2,652,336; fines, $477,312; pass books and initiation, $748,512; borrowed money, $51,153,744; real estate sold, $6,286,416; miscellaneous receipts, $12,581,696; total, $518,409,648.

Disbursements: Pass book loans, $12,882,000; mortgage loans, $209,925,072; stock withdrawals, $145,254,720; paid-up stock withdrawals, $19,336,560; deposit withdrawals, $37,539,504; expenses, $5,239,584; borrowed money, $49,352,976; interest, $1,312,608; real estate purchased, $2,533,008; miscellaneous, $12,995,-

904; cash on hand, January 1, 1908, $22,037,712; total, $518,409,648.

In 1893 there were 240 "national" building and loan associations in the United States, with total assets of $37,020,366. Since that date this class of associations has greatly decreased in numbers. On January 1, 1908, they were approximately 35 in number, with estimated assets of $14,500,000.

Money.—Money is both an accepted medium of exchange and a measure of value. Any article of value will suffice for the purpose, but stamped metal, and especially gold and silver or their representative in paper notes, are the most convenient and universally acceptable. In primitive forms of commerce object was bartered for object, as is occasionally done to-day in many parts of the world. But soon the need was felt for some fixed standard of value so as to render exchanges easier and more equitable. For this purpose objects which were in popular demand either for use or ornament became the first media of exchange. Various commodities and objects have been utilized as money; tin was used in Britain and Syracuse; lead in Burma; iron in Sparta; furs in Siberia and Alaska; skins and platinum in Russia; silk and other fabrics of fixed length in China, Tibet, and certain parts of Africa; nails in Scotland; soap in Mexico; bullets and wampum in Massachusetts; logwood in Campeche; tobacco in Virginia. Various kinds of eatables have also been employed as money; rice grains by the ancient Koreans as well as by the modern Filipinos; grains of salt in Abyssinia and at Laos; cubes of pressed tea in Mongolia; codfish in Newfoundland; sugar in the West Indies; cattle in Germany and Rome. In the early days of Rome money of wood and leather was in circulation. The next stage in the development of money was in the selection of objects whose value was determined by their rarity, and even in our times we can find numerous instances of these primitive forms. The Pelew islanders treasure up as current money a certain number of obsidian or porcelain beads and terra-cotta prisms. In the island of Yap blocks of aragonite take the place of money; this rock, being unknown on the island, has to be sought for in the Pelews, and the larger the block the greater its value. This illustration will serve to show that the rarity of a substance is not enough to answer all the essentials of money. A condition of suitable money is that it may be easily handled, and though small in size may represent a high value, either real or fiduciary. Such, for example, are the teeth of the Wapiti deer (*Cervus canadensis*), which the Shoshone Indians and the Bannocks of Idaho and Montana still utilize in their transactions. Such also is the skin-money of the ancient Scandinavians and Carthaginians, the cocoa-seed money of the ancient Mexicans, the animal skull-money of the Mishmee, etc.

Several kinds of shells are still used as money: the *Dentalum entalis* by the Indians of the northwest; the *Venus mercenaria*, transformed into wampum, by the Indians of the Atlantic coast, etc.; and in particular the cowry shell, which is commonly used in various parts of Asia, Africa, and the islands of the Indian and Pacific oceans. In Bengal about a century ago 2,400 to 2,560 cowries were worth a rupee. But the cowry most widely circulates in tropical Africa, which fact is largely explained by its rarity; in consequence the rate of exchange is much higher in Africa than in Asia.

The origin of true money must however be traced to metals. Iron or bronze plates were used as money in Assyria, among the Mycenians, and the ancient Britons. Metal plates of varying form are still generally employed as money in Africa, for example, the *loggos* or pickaxes of the negroes of the Upper Nile, the iron plates of the natives of the Ubangi district, the spearheads of the Jurs, the X-shaped bronze objects made in Lunda and current all over the Kongo, and rings of copper in central Africa; while up to fifty years ago in Cambodia thin iron rings about six inches long and weighing about seven ounces each were used as money.

In regard to primitive money it will be noted that it could easily be transformed into articles of utility (lance-iron, arrowhead, sword, shovel and the like). In China the first bronze money was in the form of a knife, the handle of which terminated in a ring; eventually the blade disappeared altogether leaving only the ring, which was transformed into the well-known Chinese money, pierced with a square hole, called *sapec* or "cash." In central Africa brass or copper wire which may be readily utilized is employed as money. Silver bars, which are cut up into pieces as required, are also current money in China, just as they were in Russia in the fifteenth century.

Whatever article or substance is invested with the functions of money the result is the same in that it fixes the measure of value for all commodities; not only for those actually bought and sold but for all those which are marketable. Some economists hold that money is more important as a measure of value than even as a medium of exchange. Money also serves as a standard of value, enabling us to estimate the relative value of commodities at different periods. This function is distinct from, though subordinate to, that of money as a measure of value, for the latter function is that of a common denominator for one and the same time.

It is important that money should be stable in value, hence the choice of the precious metals among civilized nations. Precious stones, though answering many of the requisites of money, lack the essential qualities of divisibility and uniformity. Stability of value becomes the more important when deferred payments are to be taken into account; and the precious metals perform this function better than any other commodity.

The value of money is largely dependent upon the law of supply and demand. The supply is obviously the quantity of money in existence; the demand is determined by many factors, chief of which are (1) the volume of exchanges to be effected; (2) the rapidity of circulation, stimulated greatly by savings banks; (3) the universal employment of credit. The latter in particular exercises a dominant influence on the demand for money. The elaborate organizations which owe their origin to the use of credit do the greater part of their transactions without the actual interchange of money, balances alone being settled in specie. Money as a medium of

exchange is thus greatly economized by the establishment of such agencies.

The early American colonists experienced much difficulty with regard to their currency, for as the supplies of money drawn from England were much in excess of their exports to that country it followed that their metallic wealth rapidly left these shores, driving the colonists back on other devices. Articles of food and produce were made "legal tender" in some states; the wampum of the Indians was used in others. Another plan adopted by the colonists was to increase the nominal value of the English current coins. A similar device is employed to-day in the Azores, the continental Portuguese money being rated at 25 per cent. in advance of its face value.

The paper money first issued in Massachusetts in 1690, though serving to form the habits of the people, collapsed altogether about the time of the Revolution, for the paper was practically irredeemable. In 1782 as much as $500 of this paper currency had to be given in exchange for one Spanish silver dollar. Specie, secured through foreign loans, for a time bolstered up the circulation. The chartering of the Bank of North America at Philadelphia in 1782, and the coinage of money by the Federal government, gradually overcame these difficulties. Of foreign coins which circulated in the country first place must be given to the Spanish dollar, which even as late as 1857 was accepted as legal tender in all of the United States post offices. Specie payments were suspended from January 1, 1862, to January 1, 1879, and during the greater part of that period gold and silver coins were not in circulation except on the Pacific coast, where, it is estimated, the specie circulation generally was about $25,000,000. (The monetary system of the United States will be found fully treated in the Dictionary of Financial Terms.)

The following statement shows the coin and paper circulation of the United States, covering the period from 1860, with the amount of circulation per capita:—

Year.	Coin, including bullion in Treasury.	United States notes and bank notes.	Total money.	In Treasury as assets.	Circulation.	Population.	Per capita.
1860....	$235,000,000	$207,102,477	$442,102,477	$6,695,225	$435,407,252	31,443,321	$13.85
1865....	25,000,000	745,129,755	770,129,755	55,426,760	714,702,995	34,748,000	20.57
1870....	25,000,000	697,868,461	722,868,461	47,655,667	675,212,794	38,558,371	17.50
1875....	25,000,000	773,273,509	798,273,509	44,171,562	754,101,947	43,951,000	17.16
1880....	494,363,884	691,186,443	1,185,550,327	212,168,099	973,382,228	50,155,783	19.41
1885....	872,175,823	665,257,727	1,537,433,550	244,864,935	1,292,568,615	56,148,000	23.02
1890....	1,152,471,638	532,651,791	1,685,123,429	255,872,159	1,429,251,270	61,622,250	22.82
1895....	1,114,899,106	704,460,451	1,819,359,557	217,391,084	1,601,968,473	69,043,000	23.20
1896....	1,097,610,190	702,364,843	1,799,975,033	293,540,067	1,506,434,966	70,365,000	21.41
1897....	1,213,780,289	692,216,330	1,905,996,619	265,787,100	1,640,209,519	71,704,000	22.87
1898....	1,397,785,969	675,788,473	2,073,574,442	235,714,547	1,837,859,895	73,060,000	25.15
1899....	1,508,543,738	681,550,167	2,190,093,905	286,022,024	1,904,071,881	74,433,000	25.58
1900....	1,607,352,213	732,348,460	2,339,700,673	284,549,675	2,055,150,998	76,295,220	26.94
1901....	1,734,861,774	748,206,203	2,483,067,977	307,760,015	2,175,307,962	77,754,000	27.98
1902....	1,829,913,551	733,353,107	2,563,266,658	313,876,107	2,249,390,551	79,117,000	28.43
1903....	1,905,116,321	779,594,666	2,684,710,987	317,018,818	2,367,692,169	80,487,000	29.42
1904....	1,994,610,024	808,894,111	2,803,504,135	284,361,275	2,519,142,860	81,867,000	30.77
1905....	2,031,296,042	851,813,822	2,883,109,864	295,227,211	2,587,882,653	83,260,000	31.08
1906....	2,154,797,215	915,179,376	3,069,976,591	333,329,963	2,736,646,628	84,662,000	32.32
1907....	2,159,103,301	956,457,706	3,115,561,007	342,604,552	2,772,956,455	86,074,000	32.22
1908....	2,326,128,458	1,049,996,933	3,376,125,391	330,668,102	3,045,457,289	87,496,000	34.81

Paper Money. Primarily paper money was representative, that is, it was metallic currency in another and more convenient form. Such is the function of the United States gold and silver certificates, each of which represents an equivalent amount of specie deposited in the treasury. But paper money in the strict sense of the term is based on credit, and is merely a promise to pay without any absolute guarantee being afforded that the promise will be fulfilled. So long as "inconvertible" paper money is not issued in excess of public demands, its value does not tend to depreciate, but immediately the supply becomes excessive paper is at a discount, gold and silver being correspondingly at a premium. Unlike metallic money, there is always the danger of overissue regardless of the actual requirements of the community. Modern history furnishes examples of excessive issues of paper money, notably the *mandats* and *assignats* of the French Revolution, the "greenbacks" of the Civil War, the irredeemable currency of Italy, Russia, and Austria. The effect of overissue is usually disastrous to commerce and international credit.

Paper money in America was first issued by the colonists; Massachusetts, as already referred to, issuing bills aggregating £7,000 in 1690, and soon increasing to £10,000, to pay the soldiers who had served in the war with Quebec. What was originally only intended as a makeshift became a practice. Rhode Island issued paper money so recklessly that in 1750 it had depreciated to one twenty-fifth of its par value. Parliament in 1751 vetoed the further issue of such money on the part of the New England colonies, and in 1754 extended the veto to the remaining colonies. To carry on the Revolutionary war, paper money was issued again and again, the amount authorized by Congress aggregating $41,000,000 by 1779, while the states on their own accord issued paper amounting to $209,000,000. The ratio of paper to silver was 40 to 1 in 1780; and at this ratio the central government paid $119,000,000 for paper retired and destroyed. By the funding act of 1790 paper was accepted in exchange for government stock at one per cent. of its face value. In this way $6,000,000 was received and canceled.

The first paper money ever issued by the government of the United States was authorized by the acts of July 17 and August 5, 1861. The notes issued were called "demand notes," because they were payable on demand at certain designated subtreasuries. They were receivable for all public dues, and the secretary was authorized to reissue them when received, but the time within which such reissues might be made was limited to December 31, 1862. The amount authorized by these acts was $50,000,000. An additional issue of $10,000,000 was authorized by

the act of February 12, 1862, and there were reissues amounting to $30,000. The demand notes were paid in gold when presented for redemption and they were received for all public dues, and these two qualities prevented their depreciation. All other United States notes were depreciated in value from 1862 until the resumption of specie payments. The act of February 25, 1862, provided for the substitution of United States notes in place of the demand notes, and the latter were therefore canceled when received. By July 1, 1863, all except $3,770,000 had been retired, and nearly three millions of this small remainder were canceled during the next fiscal year. These notes were not legal tender when first issued, but they were afterwards made so by the act of March 17, 1862.

The principal issue of United States paper money was officially called United States notes. These were well-known "greenbacks" or "legal tenders." The act of February 25, 1862, authorized the issue of $150,000,000, of which $50,000,000 was in lieu of an equal amount of demand notes, and could be issued only as the demand notes were canceled. A second issue of $150,000,000 was authorized by the act of July 11, 1862, of which, however, $50,000,000 was to be a temporary issue for the redemption of a debt known as the temporary loan. A third issue of $150,000,000 was authorized by the act of March 3, 1863. The total amount authorized, including the temporary issue, was $450,000,000, and the highest amount outstanding at any time was $449,338,902 on January 30, 1861. There are still outstanding $346,681,016.

Single and Double Monetary Standards.—The needs of exchange have given rise to various systems of currency, in which gold, silver, and paper are generally combined. When only one metal is used as a standard of value the system is termed "monometallism"; when the use of both gold and silver at a fixed relative value is authorized as legal tender to any amount, it is known as "bimetallism."

Most of the great powers have adopted a monometallic system, gold being received at the mints without limit and converted into coin. Where a gold standard obtains, silver and baser coins have merely a subsidiary value, and are regarded as tokens, that is, their nominal value is in excess of their intrinsic value. These subsidiary coins are usually legal tender only up to a limited amount, and the quality issued from the mints is likewise restricted and determined by circumstances. Gold is invariably the standard of value under a monometallic system, though this is not absolutely essential. When the gold mines of California and Australia were producing an enormous output, the Belgian government about 1851 demonetized gold and substituted silver as the standard.

Under a bimetallic system if the market ratio between gold and silver differs from the legal ratio, one of the metals is sure to be shipped abroad. To meet such a contingency bimetallic countries reduced the fineness of the silver currency, and introduced a token coinage. This provision, combined with the issuing of certificates to represent the larger coins, placed the subject of bimetallism in a new light, and the question was narrowed down as to whether gold alone or gold and silver in conjunction provided the better standard of value, the question of circulation being no longer potent.

It is the fundamental requirement of bimetallism that both metals should be on exactly the same legal footing, and not merely that they should circulate conjointly. In the United States the present currency is not bimetallic; for the silver dollar, though not limited in legal tender, is yet limited in amount, and cannot be freely coined at the instance of any individual.

The question as to the respective merits of a single or a double monetary standard has given rise to much controversy. The arguments for and against bimetallism may be briefly stated. The bimetallists contend that (1) bimetallism would assure the maintenance of a par value between the two metals; (2) steadiness of exchange between gold-using and silver-using countries; (3) a more stable standard of value than is possible in a gold standard, since bimetallism rests on a broader basis and a decline in prices is less likely to occur. The monometallists argue (1) that bimetallism has been thoroughly tried by individual nations and found unsatisfactory, owing chiefly to one or other metal being exported when its bullion value was greater in some other country, since law cannot fix values; (2) that international bimetallism, if such could be brought about, would not be a guarantee of a universal ratio being either established or maintained; (3) the evils for which bimetallism is proposed as a remedy are of small consequence, and so far as affording relief goes it is held that bimetallism is only theoretical besides being more complicated and artificial, and would break down in practice; while some contend that (4) changes in prices have either no relation to the money supply at all, or else their influence is not so disturbing as the bimetallists claim, while their compensations more than counterbalance their disadvantages.

To the argument that one or other metal would be likely to be exported, the bimetallists reply that the demand for the use of metals for coinage far outstrips any other demand; and furthermore the law can and does influence the value of metals, and the commercial ratio would perforce adjust itself to the legal ratio. This point is refuted by their opponents, who successfully argue that the French law of 1801, which fixed the ratio between gold and silver at 15½ to 1, did not control the market ratio. To this the bimetallists rejoin that the area was too restricted, and that if an international bimetallic system could be brought about, such a possibility would be absolutely eliminated.

Between 1871 and 1873 Germany substituted a gold standard, being enabled to do this by reason of the enormous indemnity paid by France, $54,600,000 of which was paid to Germany in gold coin. In 1873 the coinage of silver was suspended by the Paris mint, while in the United States, silver had almost entirely gone out of use, and Congress suspended the coinage of the standard silver dollar. The opening up of new silver mines, together with the huge surplus stock of silver thrown upon the market by Germany, caused the price of silver to rapidly decline. Public pressure was brought on Congress, and in 1878 an act was passed providing for the purchase of silver and the coinage

of silver dollars. In twelve years 368,000,000 standard silver dollars were issued, but the price of silver again began to fall, for it was not possible to keep this enormous quantity of silver in circulation. The government therefore by an act of March 14, 1900, extended the policy of issuing silver certificates, each representing actual coins deposited in the treasury. This act limited the denominations to $10 and under, except that ten per cent. of the total value of such certificates may be issued in denominations of $20, $50, and $100 at the discretion of the secretary of the treasury. Neither silver certificates nor silver dollars are redeemable in gold.

In 1890 the Sherman Act was passed, by which the secretary of the treasury was forced to purchase 4,500,000 ounces of silver each month, and to use it as a basis for legal tender notes payable in coin. This act was repealed in 1893, the year of a serious financial panic, and Congress entirely suspended the issue of silver coinage. The gold reserve rapidly diminished and government bonds aggregating over $260,000,000 were issued to cope with the difficulty. The question of the restoration of silver was the main issue in the presidential campaigns of 1896 and 1900. The outlook was improved in 1900 and Congress authorized the secretary of the treasury to redeem greenbacks, silver treasury notes, and silver notes of 1890 in gold coin, and to issue bonds to maintain a sufficient reserve. This quieted the financial interests, for it was feared that if the United States should establish a different monetary standard to that of the leading European countries, the currency would be subject to disastrous fluctuations.

The recent history of bimetallism is intimately associated with the question of Free Silver, but the controversy is no longer acute, and the present tendency is rather towards universal monometallism than the reverse. The term "Free Silver" means the right of any individual to deposit "standard silver bullion" at any of the United States mints in any amount, and have it coined at the expense of the government, such depositor to receive in return for his bullion silver coins containing in the aggregate the same weight of fine silver as brought to the mint.

The monetary systems and approximate stocks of money, in the aggregate and per capita, in the principal countries of the world, are given in the following table compiled from the circular dated July 1, 1908, issued by the United States Treasury Department:—

Countries.	Estimated population	Stock of gold.	Stock of silver.	Uncovered paper.	Per capita.				Monetary standard.
					Gold.	Silver.	Paper.	Total.	
United States	85,400,000	$1,593,300,000	$698,700,000	$610,800,000	$18.66	$8.18	$7.15	$33.99	Gold
Austria-Hungary	49,400,000	306,400,000	105,300,000	119,300,000	6.20	2.13	2.41	10.74	Gold
Belgium	7,200,000	31,100,000	24,700,000	125,800,000	4.32	3.43	17.47	25.22	Gold
British Empire:									
Australasia	4,800,000	125,000,000	10,000,000	.....	26.04	2.08	.....	28.12	Gold
Canada	5,800,000	62,400,000	6,700,000	72,500,000	10.76	1.15	12.50	24.41	Gold
United Kingdom	44,100,000	486,700,000	116,800,000	116,800,000	11.03	2.65	2.65	16.33	Gold
India	295,200,000	337,300,000	603,800,000	38,900,000	1.14	2.05	.13	3.32	Gold
South Africa	7,700,000	61,400,000	20,000,000	.....	7.97	2.60	.....	10.57	Gold
Straits Settlements	5,400,000	600,000	49,000,000	22,200,000	.11	9.07	4.11	13.29	Silver
Bulgaria	4,000,000	7,200,000	3,200,000	2,900,000	1.80	.80	.73	3.33	Gold
Cuba	1,600,000	38,200,000	5,000,000	.....	23.88	3.12	.....	27.00	Gold
Denmark	2,600,000	22,600,000	6,100,000	10,700,000	8.69	2.35	4.11	15.15	Gold
Egypt	11,200,000	140,000,000	15,000,000	.....	12.50	1.34	.....	13.84	Gold
Finland	2,800,000	5,100,000	400,000	12,700,000	1.82	.14	4.54	6.50	Gold
France	39,300,000	926,400,000	411,100,000	269,200,000	23.57	10.46	6.85	40.88	Gold
Germany	60,600,000	1,030,300,000	219,700,000	267,100,000	17.00	3.62	4.41	25.03	Gold
Greece	2,400,000	5,600,000	100,000	42,600,000	2.33	.04	17.75	20.12	Gold
Haiti	1,400,000	1,000,000	2,500,000	7,600,000	.71	1.79	5.43	7.93	Gold
Italy	33,700,000	215,500,000	31,700,000	150,600,000	6.39	.94	4.47	11.80	Gold
Japan	51,700,000	80,100,000	48,200,000	96,900,000	1.55	.93	1.87	4.35	Gold
Mexico	13,600,000	40,000,000	56,800,000	51,200,000	2.94	4.18	3.76	10.88	Gold
Netherlands	5,600,000	45,900,000	52,600,000	57,800,000	8.20	9.39	10.32	27.91	Gold
Norway	2,300,000	8,300,000	3,100,000	7,000,000	3.61	1.35	3.04	8.00	Gold
Portugal	5,400,000	8,600,000	33,400,000	61,200,000	1.59	6.19	11.33	19.11	Gold
Roumania	6,600,000	20,700,000	600,000	27,600,000	3.14	.09	4.18	7.41	Gold
Russia	143,400,000	939,400,000	77,900,000	.....	6.55	.54	.....	7.09	Gold
Servia	2,700,000	2,200,000	3,200,000	1,500,000	.81	1.19	.55	2.55	Gold
Siam	6,100,000	.....	44,500,000	1,100,000	.....	7.29	.18	7.47	Gold
South American States:									
Argentina	5,700,000	102,700,000	.....	293,300,000	18.02	.....	51.45	69.47	Gold
Bolivia	1,800,000	400,000	3,800,000	.....	.22	2.11	.....	2.33	Silver
Brazil	16,000,000	21,200,000	100,000	363,000,000	1.33	.06	22.63	24.02	Gold
Chile	3,200,000	2,000,000	6,700,000	42,300,000	.63	2.09	13.22	15.94	Gold
Colombia	4,500,000	100,000	.....	1,000,000,000	.02	.....	222.22	222.24	Gold
Ecuador	1,300,000	3,700,000	1,400,000	1,900,000	2.85	1.07	1.46	5.38	Gold
Guiana—British	300,000	100,000	100,000	600,000	.33	.33	2.00	2.66	Gold
Dutch	100,000	200,000	200,000	200,000	2.00	2.00	2.00	6.00	Gold
French	100,000	.....	.....	600,000	.....	.....	6.00	6.00	Gold
Paraguay	700,000	100,000	.....	35,000,000	.14	.....	50.00	50.14	Gold
Peru	4,600,000	6,800,000	2,400,000	.....	1.48	.....	.52	2.00	Gold
Uruguay	1,000,000	15,500,000	4,300,000	1,700,000	15.50	4.30	1.70	21.50	Gold
Venezuela	2,600,000	300,000	700,000	.....	.11	.27	.....	.38	Gold
Spain	18,800,000	90,900,000	173,700,000	97,100,000	4.84	9.24	5.16	19.24	Gold
Sweden	5,300,000	22,600,000	7,700,000	34,800,000	4.26	1.45	6.57	12.28	Gold
Switzerland	3,300,000	29,000,000	11,600,000	24,600,000	8.79	3.51	7.45	19.75	Gold
Turkey	24,000,000	50,000,000	40,000,000	.....	2.07	1.66	.....	3.73	Gold
Central American States	4,700,000	2,000,000	7,400,000	62,900,000	.43	1.57	13.38	15.38	Silver*
China	330,100,000	.....	350,000,000	.....	.....	1.06	.....	1.06	Silver
Total	1,330,100,000	$6,888,900,000	$3,260,200,000	$4,132,000,000	$5.18	$2.45	$3.10	$10.73	

* Except Costa Rica and British Honduras — gold-standard countries.

DICTIONARY OF COINS AND COINAGE.

FOREIGN AND DOMESTIC.

ABAS. A Persian silver coin, equal to 4½ cents. It is a fiftieth part of a toman.

ABASSI. A Russian silver 20-kopeck piece, worth about 8½ cents.

ABYSSINIA. The current coin is the Maria Theresa dollar of Austria. But a new coin, the Menelik dollar, or talari, worth about 2 shillings or nearly 50 cents of United States money, weighs 28.075 grams of .835 fine silver. The half, quarter, eighth, and sixteenth (guerche or piaster) of a talari are of silver. The besa (one hundredth of a talari) and the half and quarter guerche are of copper.

AFGHANISTAN. The rupee seems to be the usual currency. The mint at Kabul was for some years under the supervision of a European. The smallest silver coin yet minted is the kiran of the value of half the Kabuli rupee, but a smaller coin of the value of a British threepence is to be issued. In addition a gold coin of the value of the British sovereign ($4.86), new silver coins of the value of the British crown ($1.21) and half crown, and a large bronze coin of the size of the British crown and the value of about 10 cents were determined upon, but have never yet been issued as currency. Small copper "pice" are coined and of these 72 are reckoned as equal to a Kabuli rupee.

AKEY. The monetary unit on the Gold Coast of Africa, equal to 20 grains of gold dust or 80 cents.

ALGERIA. The money is the same as that of France.

ALTIN. A Russian money of account, equal to 3 kopecks or 2¼ cents.

ANGEL. An old English gold coin bearing the figure of an angel. First struck in the reign of Edward IV. in 1465; equal in value to 6s. 8d., later to 8s., and afterward to 10s. or $2.43. Last struck by Charles I. in 1634.

ANGELET. An old English gold coin; a half-angel.

ANGELOT. (1) An old French gold coin first struck in 1340 by Philip VI.; equal to a half-angel. (2) A gold coin struck by Henry VI. of England for use in his French dominions.

ANNA. An East Indian coin, equal to one sixteenth of a rupee or 2 cents. Half an anna in copper and 2-anna silver pieces were issued by Queen Victoria.

ARGENTEUS. A Roman silver coin introduced by the emperor Caracalla and equal to a denarius and a half. It took the place of the denarius, and later became a copper coin plated with silver. Equal to 25½ cents.

ARGENTINE REPUBLIC. The silver peso fuerte or dollar of 100 centavos has a par value of 4 shillings or about 97 cents of United States money. The 5-dollar gold coin weighs 8.0645 grams .900 fine and contains 7.25805 grams of pure gold. The silver dollar weighs 25 grams of .900 fine and contains 22.5 grams of fine silver. Silver coins of 50, 20, and 10 centavos, with both nickel and copper fractional pieces, are also struck. The paper dollar is worth about 44 cents of United States money.

AS. A Roman copper coin varying in value from 12½ to 1 cent.

ASAR. A Persian gold coin, equal in value to $1.60. Not current.

ASPER. A Turkish money of account, equal to a 100th or 120th of a piaster, or four ninths of a United States mill.

ATT. A Siamese coin; a 64th of a tical; equal to 1 cent.

AUSTRALIA. The legal currency is that of Great Britain. Accounts are kept in pounds, shillings, and pence.

AUSTRIA-HUNGARY. By the law of August 2, 1892, the monetary system was reformed on a gold basis and the coins under that act are: gold 20-crown piece of 6.775067 grams of .900 fine and containing 6.09756 grams of pure gold equals 16s. 8d. or $4.06 United States money; gold 10-crown piece equals $2.03; gold ducat equals 11 crowns 29 heller, or 9s. 4¾d., or $2.28; silver crown of 5 grams .835 fine and containing 4.175 grams of pure silver equals 100 heller, or half a gulden, or 10d., or 20 cents; nickel 20-heller equals 10 kreuzer of the old coinage, or 2d., or 4 cents; nickel 10-heller equals 5 kreuzer (old), or 1d., or 2 cents; bronze 2-heller equals 1 kreuzer (old), or 0.2d., or about 4 mills; bronze 1-heller equals ½ kreuzer (old), or 0.1d., or about 2 mills. Silver gulden or florins are still legal tender.

BAHAMAS. British silver and bronze coins are legal tender for all sums. American half-dollars and quarter-dollars are current at the rate of 2s. and 1s. respectively.

BAHREIN ISLANDS. Coins in use are British sovereigns, Indian rupees worth 16d. or 33 cents, Austrian (Maria Theresa) dollars worth from 19d. to 27d. or from 39 to 45 cents, and Turkish lire worth from 18s. 4d. to 19s. 4d. (about $4.45 to $4.70).

BARBADOS. British gold, silver, and bronze coins are circulated as well as 5-dollar notes of the Colonial Bank.

BASUTOLAND. The currency is exclusively British.

BECHUANALAND PROTECTORATE. The currency is British money.

BELGIUM. Belgium belongs to the Latin Monetary Union. The standard coin of value is the franc of a par value of 25.22½ francs to the English pound sterling, or about equal to 19.3 cents of United States money.

BERMUDA. The currency is British. Silver is legal tender for any amount. There is no paper money in circulation except a few Bank of England notes.

BOKHARA. The Russian ruble is current everywhere. The Bokhara silver tenga is valued at 10 cents of United States money.

BOLIVIA. Gold standard was adopted September, 1906. The unit of account will be the gold peso, weighing 1.5976 grams .916 fine and worth about 97.3 cents of United States money. The boliviano in use at present has a nominal value of 96 cents, but is actually worth about 49.9 cents.

BORNEO, BRITISH. The decimal or dollar system is in use. The coins are ½ cent and cent in bronze; 1, 2½, and 5 cents in nickel. The rest of the money is in the shape of notes of 25 cents, 50 cents, and 1, 5, 10, and 25 dollars.

BRAZIL. The milreis of 1,000 reis has a par value of 54.6 cents of United States money. In December, 1905, the government was authorized to coin silver into 2, 1, and ½ milreis pieces, weighing 20, 10, and 5 grams respectively of silver .900 fine.

BULGARIA. There are a few gold coins of 100, 40, 20, and 10 leva or francs, but 10 and 20 franc foreign pieces supply the demand. The 5 leva (francs), 2 leva, 1 lev, and ½ lev are of silver; the 20 stotinki (centimes), 10, 5, and 2½ are of nickel; and the 10, 5, 2, and 1 stotinki are of copper. The franc is equal to 19.3 cents.

CANADA. The value in Canada of the money of the United Kingdom is fixed by law as follows:—

Sovereign or pound	equals	$4.86
Crown	equals	1.20
Half-crown	equals	.60
Florin	equals	.48
Shilling	equals	.24
Sixpence	equals	.10

Canada has no gold coinage of its own, the English sovereign and the United States gold eagle of $10, with its multiple and half, are legal tender. Notes or bills are issued exclusively by the government for $4, $2, $1, and for 25 cents. No bank is allowed to issue notes for a less sum than $5.

CAPE OF GOOD HOPE (CAPE COLONY). The currency is exclusively British. All accounts are kept in pounds, shillings, and pence.

CENT. A coin of the United States and of Canada, equal in value to one hundredth of a dollar. In the United States the word *cent* dates from the act of 1786.

1787. A mint was established at New Haven, Conn., and "Fugio" or "Franklin" cents were coined.
1791. Pattern cents with the head of Washington were struck in England.
1792. Congress authorized the issue of a cent of 264 grains of copper, and a corresponding half-cent.
1793. These coins issued, but the cent was reduced to 208 grains.

1796. Weight of the cent reduced to 168 grains and the half-cent proportionately. New design.
1808. The Head of Liberty changed.
1816. Head of Liberty again changed.
1815 and 1835. No copper coins issued.
1851. Three-cent piece of ¾ silver authorized—12⅜ grains.
1853. Weight of 3-cent piece reduced to 11.52 grains.
1857. Half-cent discontinued. Old large copper cent reduced to 72 grains of the proportion of 88 parts copper to 12 of nickel.
1864. Bronze cent authorized; weight, 48 grains and composed of 95 parts copper and 5 parts tin and zinc. The 1-cent and 2-cent pieces made a legal tender for sums not to exceed 10 and 20 cents. The 2-cent piece weighed 96 grains.
1865. The 1-cent and 2-cent coins were made legal tender for only 4 cents. The 3-cent coin was ordered of ¾ copper and ¼ nickel and to weigh 30 grains. Legal tender for not more than 60 cents.
1866. A 5-cent piece authorized of ¾ copper and ¼ nickel, to weigh 77.16 grains and to be legal tender for sums not exceeding $1.
1873. The 2-cent piece discontinued. The 5-cent piece weighing 77.16 grains and the 3-cent piece of 30 grains were to consist of ¾ copper and ¼ nickel, and a 1-cent piece of 95 parts copper and 5 parts tin and zinc to weigh 48 grains were authorized. Legal tender for not more than 25 cents.
1890. The 3-cent piece was discontinued.
1909. Lincoln cent, new design, authorized.

The rare cents are those of 1793, 1799, 1804, and the copper cent of 1856. The rare half-cents are those of 1793, 1831, 1840 to 1848, and 1852.

CEYLON. A decimal coinage, using the rupee of India with cents in place of annas and pice.

CHILE. The gold coins of Chile are the 20, 10, and 5 peso coins called respectively the condor, doblon, and escudo. The 10-peso piece weighs 5.99103 grams .916 fine and contains 5.49178 grams of pure gold, and is valued at $3.65 of United States money. The silver peso weighs 20 grams of .835 fine silver and is worth about 36.5 cents of United States money. The 2½, 2, 1, and ½ centavo are of bronze.

CHINA. The monetary unit of China is the copper cash, of which about 17½ equal 1 cent of United States money. Another coin largely used is the "hundredth of a dollar" or the "10 mils" piece. Its face value is about 6 mills and its intrinsic value about ¼ cent in United States money. The Haikwan or customs tael is 1 tael weight (1.3 oz.) of pure silver and is equal to about 83.2 cents. The dollar, equal in value to the Mexican dollar, is commonly used. By the treaty with England (1902) China promised to take steps to make her coinage uniform, but results of any effort are not yet apparent.

COLOMBIA. The gold dollar is the monetary unit and weighs 1.59765 grams .916 fine and its value is the same as the United States dollar. Gold coins are 1, 2½, and 5 dollars. The silver coins are the dollar (.900 fine), the half dollar (.835 fine), the peseta of 20 cents, and the real of 10 cents (.900 fine). Thirty-three grams of silver are considered equal to 1 gram of gold.

CONGO INDEPENDENT STATE. The legal money is that of Belgium, but on the Upper Congo the currency consists of brass rods.

COSTA RICA. The gold colon is the monetary unit. It is of .900 fine gold, weighs .778 grams, and is equal to 46.5 cents of United States money. Fractions of the colon are of silver and include the 50, 25, 10, and 5 cent pieces of .750 fine silver.

CRETE. Cretan money is similar to that of Greece. The drachma of 100 lepta is equal to the French franc of 19.3 cents.

CROWN. An English 5-shilling silver coin, equal in value to $1.21 of United States money. A half-crown is 2s. 6d., equal to 60 cents of United States money.

CUBA. There is no Cuban currency or paper money. The Spanish gold dollar is worth 90½ cents; the silver dollar, 80 cents; and the American dollar, 99 cents. The peso is worth 60 cents; the half-peso, 30 cents; the peseta, 12 cents; the real, 6 cents; and the half-real, 3 cents. The French louis is worth $3.82.

CYPRUS. English gold coins; and Cyprus silver and Cyprus copper piasters, half-piaster, and quarter-piaster. Of these, 9 piasters equal 1 English shilling or 24 cents of United States money.

DENMARK. The monetary unit is the krone of 100 öre, of a value of 26.8 cents. The 20 and 10 kroner pieces are of gold. The 2-kroner silver piece contains 12 grams of pure silver. The öre is equal to about ¼ of a cent of United States money.

DOLLAR. The monetary standard of value of the United States and Canada. It contains 100 cents and is equal to 4s. 1.3d. of English money. Established in the United States by resolution of Congress, July 6, 1787. The silver dollar and the decimal system were established by act of Congress, August 8, 1786. The coinage was begun April 2, 1792, when the mint was established. The weight of the silver dollar has varied as follows:—

Act of April 2, 1792, 371¼ grains of pure silver or 416 grains of standard silver.
Act of January 18, 1837, 412½ grains .900 fine, containing 371¼ grains of pure silver.
Act of March 3, 1849, gold dollars were 25.8 grains .900 fine of 23.22 pure gold.
Act of February 12, 1873, this latter was made the unit of value in the United States.
Act of September 26, 1890, suspended the coinage of gold dollars.
Act of February 28, 1878, ordered the secretary of the treasury to buy every month silver bullion to the value of not less than $2,000,000 nor more than $4,000,000 to be coined into standard silver dollars.
Sherman act of July 14, 1890, repealed the last mentioned law and ordered the monthly purchase of 4,500,000 ounces of silver and the coinage of 2,000,000 ounces. This act was repealed in 1893.
The gold dollar of 25.8 grains (or 1.6718 grams) .900 fine is the monetary unit according to the law of March 14, 1900.
The silver dollar weighs 412.5 grains or 26.730 grams .900 fine and contains 371.25 grains or 24.057 grams of fine silver.

EAGLE. A United States gold coin; a 10-dollar gold piece. An eagle weighs 258 grains or 16.71818 grams .900 fine and contains 232.2 grains or 15.0464 grams of fine gold. The eagle is worth in English money £2 1s. 1d. A double eagle is a 20-dollar coin, and a half-eagle a 5-dollar gold piece.

ECUADOR. The gold condor is equal to the English sovereign ($4.8665). It contains 7.3224 grams of fine gold. It is composed of 10 sucrés (each equal to 48.7 cents).

EGYPT. The monetary unit is the gold Egyptian pound of 100 piasters. It weighs 8.5 grams .875 fine and contains 7.4375 grams of fine gold and is worth $4.943 of United States money. There are also 20, 10, 5, 2, and 1 piaster silver pieces; 1, ½, one fifth, one tenth piaster pieces in nickel; and one twentieth and one fortieth piaster in bronze. Most of the gold coin in Egypt and Sudan is English.

FALKLAND ISLANDS. Same as in Great Britain.

FARTHING. An English bronze coin of which 4 make a penny. A farthing is equal to half a cent of United States money.

FIJI ISLANDS. Money is the same as in Great Britain.

FINLAND. The markka of 100 penni is equal to a franc or 19.3 cents of United States money. There are 20 and 10 markka gold pieces; 2, 1, ½, and ¼ markka pieces in silver; and 10, 5, and 1 penni pieces of copper.

FLORIN. An English 2-shilling silver coin, equal in value to 48½ cents of United States money. A Netherlands gold coin of the value of 40.2 cents.

FORMOSA. Coinage is the same as in Japan.

FRANC. A French silver money of account which is the unit of the French monetary system. It has also been adopted as the unit of currency by Belgium and Switzerland, and for the lira of Italy and the drachma of Greece. It is of the value of 19.3 cents in United States money.

FRANCE. The franc of 100 centimes is the monetary unit. It is equal to about 19.3 cents of United States money. The 20-franc, and the 10-franc pieces are of gold. Silver coins are 5 francs, 2 francs, 1 franc, ½ franc, and 20 centimes. The bronze coins are the 10 and 5 centime pieces.

FRENCH INDO-CHINA. The silver pieces are piaster (worth about 48 cents), ½ piaster, one fifth piaster, and one tenth piaster. The Mexican dollar has the same value as the piaster.

FRENCH WEST AFRICA. The use of French money is compulsory.

GAMBIA. The legal currency is British, but French 5-franc pieces are freely circulated to the extent of about £90,000.

GERMANY. The mark of 100 pfennige has a value of 23.8 cents of United States money and nearly that of the English shilling. The thaler is 3 marks. The 10-mark gold piece is called a krone; and the 20-mark, the doppel-krone. Silver coins are the 5 marks, 2 marks, 1 mark, and 50 pfennige. The 10-pfennige and 5-pfennige pieces are of nickel. The smaller coins are of bronze.

GIBRALTAR. The legal currency is that of Great Britain, but Spanish money is freely circulated.

GOLD COAST. A silver currency has been lately introduced on a British standard, but cowries are still used for small purchases.

GREECE. The drachma of 100 lepta is equal to the franc or 19.3 cents of United States money. The gold coins of the United States, Great Britain, Austria, Germany, Denmark, Russia, Spain, Turkey, and Egypt are legal at a reduction of ¼ per cent. from their nominal value.

GUATEMALA. The dollar or peso of 100 centavos has a value of about 49.9 cents of United States money. The real of nickel has a nominal value of 12½ cents. The half-real and quarter-real are also of nickel.

GUIANA, BRITISH. The colonial currency is in gold dollars worth 4s. 2d. or of the same value as the United States dollar. Some British gold, silver, and bronze coins are in circulation.

GUINEA. An English gold coin formerly in use. The guinea is now only a money of account and is made up of 21 shillings or one shilling more than a pound or a sovereign.

HAITI. The gourde or dollar has a nominal value of 97 cents, and is equal to 5 francs but has a fluctuating value. The 10, 5, 2, and 1 gourde pieces are of gold; the 50-centime, 20-centime, and 10-centime pieces are of silver; the 3-centime, 2-centime, and 1-centime pieces are of bronze.

HONDURAS. The silver peso or dollar of 100 cents weighs 25 grams .900 fine. The other silver pieces are 50, 25, 20, 10, and 5 cents.

HONDURAS, BRITISH. United States gold was adopted as the standard on October 15, 1894. The British sovereign and half-sovereign are legal tender for $4.86 and $2.43 respectively.

HONG-KONG. The following are current in Hong-kong:—

Mexican dollar equals 100 Hong-kong cents, equal to 54.2 United States cents.

British dollar equals 100 Hong-kong cents, equal to 53.8 United States cents.

Chinese tael equals 10 mace or from 75 to 83 United States cents.

100 candareens equal 1,000 cash or about 80 cents. Hong-kong 50, 20, 10, 5, and 1 cent pieces imported from England. The mil or cash is no longer coined.

INDIA, BRITISH EAST.

Pie equals .33 farthing or ¼ cent.
3 pie equal 1 pice, or 1 farthing, or ¾ cent.
12 pie or 4 pice equal 1 anna, or 1 penny, or 2 cents.
16 annas equal 1 rupee, or 1s. 4d., or 33 cents.
15 rupees equal £1 or $4.8665.
100,000 rupees equal 1 lac of rupees.
10,000,000 rupees equal 1 crore of rupees.

ITALY. Money is similar to that of France, the names being altered to the Italian form. The lira of 100 centesimi is the same as the franc (equal to 19.3 cents of United States money). The 20-lire and 10-lire pieces are of gold; the 5-lire, 2-lire, and 1-lira are of silver; the 20 and 25 centesimi of nickel; the 10, 5, 2, and 1 centesimo of bronze.

JAMAICA. The legal currency is that of Great Britain, but various United States coins are freely circulated. Notes of the Colonial Bank and of the Bank of Nova Scotia are current.

JAPAN. The yen is the standard of value but is not coined. It is equal to 49.8 cents of United States money. The gold coins are 20, 10, and 5 yen pieces; the silver are 50, 20, and 10 sen pieces; the 5-sen piece of nickel; and the 1-sen and 5-rin of bronze. The sen is the hundredth part of a yen, and the rin is the tenth of a sen.

KOREA. The coinage is the same as that of Japan, excepting that Korean characters are inscribed instead of Japanese.

LEEWARD ISLANDS. The legal currency is that of Great Britain.

LIBERIA. The coins are those of Great Britain, but accounts are usually kept in dollars and cents of the United States. There is a Liberian coinage in silver and copper. The silver coins are 50, 25, and 10 cent pieces; copper, 2 and 1 cent pieces.

MADAGASCAR. The only legal coin is the 5-franc piece with subdivisions in silver, and copper 5 and 10 centimes. Italian, Belgian, and Greek coins are also current. The natives used to cut the coins into small parts and weigh them to make fractional parts, but the government is now withdrawing these pieces from circulation at the rate of 30 grams of silver for each 5-franc piece.

MALTA. The legal currency is that of Great Britain.

MARIA-THERESA THALER OR DOLLAR. An Austrian silver coin. It is still coined with the date of 1780 for circulation in Abyssinia and Zanzibar. It is equal to $1.02 of United States money, nominally, but its value fluctuates. In Bahrein it is worth from 19d. to 27d.

MARK. A silver coin of the German empire containing 5 grams of silver, or 0.20784 of that of a United States silver dollar. Silver coins of the value of 2 marks, and gold coins of the value of 5, 10, and 20 marks are also current. The gold coins contain 0.3584229 gram of fine gold per mark, the value of which is consequently $0.23821 in United States money.

MAURITIUS. The standard coin is the Indian rupee with annas and pice. All accounts are kept in rupees.

MEXICO. The monetary unit since March, 1905, is the silver peso or dollar, the legal value of which is fixed at .75 gram of pure gold. The silver peso weighs 27.073 grams .9027 fine and .0793 copper, and contains 24.438 grams of fine silver. It is divided into 100 centavos. The 50, 20, and 10 centavo pieces are of silver .800 fine and .200 copper. The bronze coins are 2 and 1 centavo pieces. The 5-centavo piece is of nickel. The Mexican dollar is equal to 49.8 cents of United States money.

MONTENEGRO. Montenegro has no coinage of its own. Austrian paper money, Turkish silver, and French and English gold circulate freely. There are three banks, the Bank of Montenegro at Cettinje and the banks of Podgoritza and Niksic at these places.

MOROCCO. The blankeel or muzoona is equal to 6 floos, or 0.08 English pence, or about 0.16 cents of United States money. The ounce or okia is equal to 4 blankeels or 0.64 cents, and the mitkal is equal to 10 ounces or 6.4 cents. Spanish dollars, pesetas, and Moorish coins minted in France are current. In silver, the dollar is equal to 10 dirhems. The dirhem is usually worth about 7½ cents.

NEPAL. The silver mohar is valued at 6 annas and 8 pies of British India currency. Copper pice, 50 of which make a silver mohar, are also coined. The rupee of India is current everywhere.

NETHERLANDS. The monetary unit is the 10-florin gold piece, which weighs 6.720 grams .900 fine and contains 6.048 grams of fine gold. The florin weighs 10 grams .945 fine and contains 9.45 grams of pure silver. The florin is worth 40.2 cents of United States money. The gulden, guilder, or florin of 100 cents; the rijksdaalder or 2½ guilders; and the cent, ½ cent, and 2½ cents are the other common coins.

NEWFOUNDLAND. A decimal system is used, of which the legal coin is the gold dollar of 100 cents, equal to 4s. 1.3d. of British money.

NEW GUINEA, BRITISH. The legal currency is that of Great Britain.

NEW ZEALAND. The legal currency is that of Great Britain.

NICARAGUA. The system is the same as that of Honduras, though Mexican, Chilean, Peruvian, and other South and Central American coins are issued. The silver peso or dollar is worth about 49.9 cents of United States money.

NIGERIA. No uniform currency exists. British coins have been introduced and are freely used.

NORTHERN NIGERIA. The barter system prevails, but is being gradually displaced by the use of British coinage.

NORWAY. The Norwegian krone of 100 öre is equal in value to 26.8 cents of United States money. The 20-kroner gold piece weighs 8.960572 grams .900 fine, containing 8.0645 grams of pure gold.

ORANGE RIVER COLONY. The currency is exclusively British.

PANAMA. The monetary unit since September, 1904, is the gold balboa, weighing 1.672 grams .900 fine, and is legally equivalent to the gold dollar of the United States. The peso and its divisions are of silver. Two silver pesos of Panama currency are reckoned as one United States gold dollar.

PARAGUAY. The peso or dollar of 100 centavos has a nominal value of 97 cents of United States money. Five gold dollars of Paraguay equal 1 pound sterling or $4.8665.

PENNY. An English bronze coin, equal in value to 2 cents of United States money. A penny weighs 145.83 grains or 9.45 grams of a mixture of copper, tin, and zinc.

PERSIA. The monetary unit of Persia is the krân, a silver coin of fluctuating value, now worth about 10 cents. Gold coins are the 10 toman, 5 toman, 2 toman, 1 toman, ½ toman, and the ¼ toman; a gold toman being worth about $1.75, while a silver toman is worth only about 80 cents. Accounts are reckoned in dinars, of which 1,000 make a krân.

PERU. The libra, of gold, is of the same value as an English sovereign ($4.8665). The 5-sol piece (gold) is half a libra. The silver sol (one tenth of a libra), one half sol, one fifth sol, one tenth sol, and one twentieth sol; the 2 centavo and 1 centavo (100 centavos equal 1 sol) are of bronze.

PIASTER. (1) The unit of the Turkish currency, a silver coin worth about 4.4 cents in United States money. (2) The Spanish dollar or peso, worth about 97 cents.

PORTUGAL. The milreis or 1,000 reis is equal to $1.08 of United States money. The 10, 5, 2, and 1 milreis are of gold; the 10, 5, and 2 testoon pieces are the silver 1,000, 500, and 200 reis pieces; the 100 reis and 50 reis are of nickel; while the 20, 10, and 5 reis are of bronze.

POUND SCOTS. Equal to only one twelfth of a pound sterling. It, too, was composed of 20 shillings, each of which was equal to only an English penny.

POUND STERLING. An English money measure consisting of 20 shillings, 240 pence, or 960 farthings. It was originally equal to a pound weight of silver. It is equal in value to $4.8665 of the money of the United States or Canada.

ROUMANIA. The legal unit is the lëu, equal to the franc or 19.3 cents of United States money. The 20, 10, and 5 leï pieces are of gold; the 20, 10, and 5 bani (centimes) are of nickel.

RUPEE. An East Indian silver coin. It is current in Bahrein Islands and in other remote places with a fluctuating value. In India it is largely only a money of account. Nominally it is equal to 33 cents of United States money, or 1s. 4d. of English money, or 16 annas of East Indian money.

RUSSIA. The ruble of 100 kopecks is the legal unit of money. A ruble is worth 51.5 cents of United States money. The imperial of 15 rubles, the half-imperial of 7½ rubles, the 10 rubles, and 5 rubles are of gold.

SALVADOR. The dollar of 100 centavos is worth about 49.9 cents of United States money.

SANTO DOMINGO. The United States gold dollar has been the standard of value since 1897. The silver coinage and the paper money which are in circulation are debased and depreciated.

SERVIA. The dinar is equal to a franc or 19.3 cents of United States money. The 20-dinar gold piece is the milan-d'or. There is also a 10-dinar gold piece. The 5, 2, 1, and ½ dinar are of silver; the 10 and 5 paras are of bronze; and the 20, 10, and 5 paras of nickel.

SEYCHELLES. The currency is based on the Indian rupee with annas and pice.

SHILLING. An English silver coin weighing 87.27 grains or 5.6552 grams .925 (or 37-40) fine and containing 80.727 grains or 5.231 grams of fine silver. An English shilling equals 24 cents of United States money.

SIAM. The tical, a silver coin, worth about 29 cents of United States money; the salung, equal to ¼ of a tical; the fuang, or ⅛ of a tical. Three dollars are equal to 5 ticals. The tical is made up of 64 atts, 4 ticals make a tamlung, and 80 ticals make a catty.

SIERRA LEONE. The legal currency is that of Great Britain.

SOMALILAND PROTECTORATE. The currency is based upon that of India, the rupee having the same value as there.

SOVEREIGN. An English gold coin of the value of $4.8665 in United States money. It weighs 123.274 grains or 7.9881 grams .916 (or eleven twelfths) fine and contains 113.001 grains or 7.3224 grams of fine gold.

SPAIN. The peseta of 100 centesimos is equal to 19.3 cents of United States money. The 20, 10, and 5 peseta pieces are of gold; the 5 peseta and 1 peseta pieces are of silver and are of the same weight and fineness as the French equivalents.

STRAITS SETTLEMENTS. By Order of Council (February 11, 1907) a Straits Settlements dollar of 312 grains or 20.217 grams .900 fine was authorized. Other subsidiary coins are 50, 20, 10, and 5 cents silver; and cent, half-cent, and quarter-cent in copper. The value of a dollar has been fixed at 56.8 cents in United States money.

SWEDEN. The krona or crown is equal to 26.8 cents of United States money and is made up of 100 öre. There is a 20-kronor gold piece and a silver krona.

SWITZERLAND. The franc is equal to 19.3 cents of United States money and is made up of 10 batzen or 100 rappen or centimes. The 20-franc piece is of gold; the 2-franc, franc, and ½-franc are of silver.

TASMANIA. The legal currency is that of Great Britain.

TONGA (FRIENDLY ISLANDS). Since May 1, 1905, British coin is the only legal tender. Accounts are kept in dollars, shillings, and pence.

TRANSVAAL COLONY. The currency is British. Money of the late South African Republic is also current.

TRINIDAD. There is a Colonial Bank and a branch of the Union Bank of Halifax, each of which issues 5-dollar notes. The British currency is legal.

TUNIS. Pieces similar to those of France and coined in France.

TURKEY. The piaster of Turkey is equal to 4.4 cents of United States money. The Turkish lira or gold medjidié is equal to 100 piasters or to $4.40 of United States money.

UGANDA PROTECTORATE. Currency is based on the Indian rupee of 1s. 4d. or 33 cents, with silver and copper fractional pieces. Cowrie shells are used by the natives but are not accepted by the government.

URUGUAY. Uruguay has no gold coins. The peso of silver, 25 grams in weight and .900 fine, worth 93 cents of United States money, and the fractional ½ peso, peso, and one tenth peso are of silver. One, 2, and 4 centesimo pieces are of bronze.

VENEZUELA. The bolivar is valued at 19.3 cents of United States money. Five bolivars are equal to one Venezuelan silver dollar. The Venezuela peso is not in circulation, but is a money of account, equal to 4 bolivars.

WINDWARD ISLANDS. Currency is that of Great Britain, but United States coins circulate freely.

ZANZIBAR. The Maria Theresa dollar is the unit, under the Sultan's authority; but the British Indian rupee circulates almost universally. The dollar is the standard unit of business value, and has a fixed value of 2 rupees 2 annas, and the rupee is worth 47 cents.

Stock Exchange.—An association of stockholders designed for organized speculation and investment in securities. The primary function of a stock exchange is to provide a regular market for stocks, bonds, and other securities, and to establish prices based on the most reliable and accurate information. The stock exchange exercises an enormous influence on commerce, both domestic and international, and is so highly organized and delicately adjusted that it reflects movements and influences from every corner of the globe. Furthermore, the leading exchanges of the world are so intimately related and interdependent that whatever affects one affects the others.

The modern stock exchange was foreshadowed in London nearly 200 years ago, when, during the South Sea Bubble in 1720, the London brokers carried on their work at Garraway's Coffee-house in 'Change Alley, and other temporary quarters. This association developed into the London Stock Exchange, whose records, however, do not date farther back than 1798. The Paris Bourse was established in 1724, Vienna in 1761, and the New York Stock Exchange in 1792. The first definite organization in America was really formed early in the eighteenth century, when a number of stockbrokers drew up and adopted a constitution in Philadelphia.

The membership of the London Stock Exchange is nearly 6,000, the entire body of members being re-elected annually. The qualification for membership is that the applicant must be a British subject, guaranteed by three members to the extent of £500 each. The Bourse at Paris, as at Berlin and Vienna, is restricted as regards trading membership; in the latter Exchange trading is confined to a *Sensale* consisting of 40 licensed brokers elected from the members of the stock exchange at large. The London Stock Exchange is the leading financial mart of the world. The transactions consist of (1) investments; (2) speculative purchases and sales of shares, on margins or "covers"; (3) speculation on the rise and fall of the quotation of shares, in which there is no expectation of actual delivery and payment; (4) "option" dealing, or trading in what are called in the United States "put" and "call," and "straddle" contracts, or "privileges."

As generally understood, a "stock exchange" is any place, even in the open air, where securities are bought and sold, but in the largest cities such transactions are carried on in a special building, or some part of one, occupied for that purpose.

The New York Stock Exchange is a voluntary association of about 1,100 members, and is not an incorporated stock company, like the London Exchange. It occupies one of the finest buildings in New York not many yards away from the cottonwood tree opposite No. 60 Wall Street, where on May 17, 1792, twenty-four brokers assembled and signed an agreement fixing the rates of commission, and creating a protective league. Subsequent meetings were held at the Tontine Coffee-house, Wall and Water streets, but not until 1817 was the New York Exchange organized on present lines. In 1827 it was housed at Merchants' Exchange on Wall Street on the site of the old Custom-house. Thence in 1854, after having been removed to 43 Wall Street and back again, it was located at William and Wall Streets; in 1856 at Lord's Court at William and Beaver Streets; and in 1865 on its present site.

By a decision of the New York Supreme Court, stock exchanges may enact such rules and regulations governing their affairs as seem necessary for the carrying on of their business, provided such rules and regulations are not contrary to the law of the land.

Stock Exchange Clearing House.—As actual deliveries to each and every broker caused much over-certification of checks, the "clearing-house" system was introduced for simplifying the delivery of securities sold between members of a stock exchange. This system was successfully operated in Europe before its introduction in America, and was established in Philadelphia and Boston before its adoption in New York in 1892.

The New York system is based on daily deliveries, the European on the "fortnightly settlement" plan.

Each stock exchange member at the close of a day's business delivers a "clearance sheet" on which his sales and purchases of active securities are recorded. That as little money as possible may be handled in the settlement, the clearing house reconciles all deliveries between different parties and adjusts the cash differences by paying or receiving the balances due, thus delivering all intermediate parties who are "even" in stock.

Each day a delivery price is fixed for each stock, the clearing house basing its reckoning thereon in assigning the receipts or deliveries. It is generally the even price, most nearly that of the last of the day for the stock in question.

Bonds are cleared only on special occasions.

For clearing each 100 shares of stock of $100 par value a charge of 2½ cents is made, and only 100-share lots or multiples thereof are cleared.

To facilitate the borrowing of money on the stock exchange is a very important duty of this clearing-house system. If Rice & Co. bought 500 shares of Labrador and Florida at 100, the next day they would, in the ordinary course of business, be obliged to pay perhaps $50,000 to take up the stock, and then make a loan with their bank, furnishing a margin of 20 per cent., thus necessitating a cash outlay of about $10,000. But they in turn, at an agreed rate of interest, loan these 500 shares to Travers & Co., the clearing house just offsetting the next day. As may be seen, no money changes hands in the transaction, and Rice & Co. are not obliged to first pay for the 500 shares of stock before loaning them to Travers & Co.

Stock Exchange Seat.—The interest in a stock exchange which enables a person to buy or sell securities thereupon is not called a share of stock, but a "seat," to own which one must be duly elected a member of the exchange, pay his initiation fee, and share in the exchange's assets and liabilities.

The business transacted naturally affects the demand for seats, which vary in price accordingly. The record price on the New York Exchange up to November 1, 1906, was $95,000; but the quotation was as low as $2,750 in 1871, and down to $13,000 in 1896. On this exchange

the initiation fee is $2,000; on the Boston Exchange, $500; up to January 1, 1907, the price for a seat on the latter was $37,500. By permission of the proper authorities the owner of a seat may transfer or sell to another person.

Commissions for the sale or purchase of securities can be charged by the owner of a seat only in accordance with the rules of the exchange. Between members rates are less than for others. If Alfred White owns a "seat" but does not wish to go upon the "floor" to personally buy or sell securities, he may employ some other member to act for him, paying him a reduced commission amounting to $200 for 100 shares; from which the term "two dollar man" originated.

Bond.—A coupon-bearing (or registered) note under seal. The instrument by which a government, municipality, or corporation contracts and agrees to pay a certain sum of money on a particular date, though sometimes reserving the right for earlier payment. Quarterly, semiannual, or annual interest is represented by the coupons. A note is simply a definite promise for the payment of money signed by the party bound without the formality of witnesses or seal, while a bond, according to the rule in many jurisdictions, must be witnessed in the same way as a deed or other formal conveyance of property, and requires a seal.

Usually a government or municipality simply issues its promise to pay under seal in the form of a bond, although to pay the principal or interest, or both, certain revenues are sometimes pledged; but it is unnecessary to mortgage property to secure the issue, as is generally done in the case of a "corporation bond."

When corporations have issued the limit of stock legally permitted, but require additional money; or when the issuing of stock at satisfactory prices does not bring in sufficient funds for the capital of the corporation, it issues "bonds." If a prosperous company earning and paying, for instance, 10 per cent. dividends upon its stock, requires more money for extensions and additions, and were to issue more stock, that would be the same as borrowing money at the rate of 10 per cent. But having found that the needed money can be raised by the issue of bonds bearing 5 per cent. interest, it makes such an issue, with the expectation that the increased capital will return earnings as great as that already invested, or 10 per cent. Therefore, the difference between the amount of the sale of bonds bearing interest at 5 per cent., and the anticipated earnings of the new capital, or 5 per cent., would result in increasing the rate of dividends upon the stock already issued.

Government Bonds.—Only the interest-bearing obligations of the United States were formerly understood by this term, but now it includes the government issues of Great Britain, Germany, Japan, etc. Our government bonds sell at a lower interest return—equivalent to a higher price—than those of any other nation. Of those bearing only 2 per cent. interest, the lowest rate of any issue, there are outstanding over $600,000,000, this being accounted for by the fact that the government maintains the standard of gold payments and is believed to be able to meet its obligations; that the bonds cannot be taxed by the government, state, or other municipality of the Union; and that national banks may deposit them with the government to secure circulation (the issuing of national bank notes).

Coupon and registered bonds are issued by the government. Registered bonds cannot legally be transferred into coupon bonds, but coupon bonds may be changed into registered bonds of the same loan. If this is to be done, send them to the "Secretary of the Treasury, Division of Loans and Currency." The conversion is made without charge by the department. The "transfer books" close on the 15th day of the month preceding interest payment on the 4 per cent. loans of 1925. In all other cases the books are closed during the whole month immediately preceding dates of interest payments. If bonds are not received for transfer before or on the day named for the closing of the books, the interest for that quarter will be paid to the parties whose name appears in the old bonds, as they cannot be transferred until after the books are reopened.

Whether the interest is held in the form of money, draft, or check, and whether the bonds are owned by a corporation or an individual, the interest upon United States government bonds is taxable, according to a decision to that effect handed down by the United States supreme court in 1906. Transactions in government bonds are carried on more largely through bankers than upon the stock exchange, the quotations in such cases varying somewhat from those upon the latter place.

If the low interest is no objection, government securities of the United States, Great Britain, and many other nations are probably the safest investment that can be made, as they are in constant demand among insurance companies, banking institutions, etc., and always afford a ready market. Furthermore, they are less affected than any other securities by industrial and political conditions.

By the financial bill which became law on March 14, 1900, the United States government for the first time in its history has issued bonds payable specifically in United States gold coin. Three classes of bonds, viz., those bearing interest (1) at 5 per cent. per annum payable on February 1, 1904; (2) at 4 per cent. per annum payable July 1, 1907, and (3) at 3 per cent. per annum payable August 1, 1908, were surrendered for exchange into 2 per cent. consols. The bonds issued by the United States government, outstanding on July 1, 1908, were as follows:—

Title of loan.	Authorizing act.	Rate of interest.	When redeemable.	Amount.
Consols of 1930	March 14, 1900	2%	After April 1, 1930	$646,250,150
Loan of 1908-1918	June 13, 1898	3%	After August 1, 1908	63,945,460
Loan of 1925	January 14, 1875	4%	After February 1, 1925	118,489,900
Panama Canal Loan	June 28, 1902, and December 21, 1905	2%	After August 1, 1916	54,631,980
Certificates of Indebtedness	June 13, 1898	3%	After November 20, 1908	14,186,500
Total				$897,503,990

Of the bonds above mentioned the consols of 1930 and the Panama Canal bonds are payable, principal and interest, in United States gold coin of the present standard value. The 3 per cent. bonds of 1908-1918, the 4 per cent. bonds of 1925, and the 3 per cent. certificates of indebtedness are payable in "coin."

INSURANCE.

Insurance in some form or other is probably as old as maritime commerce. Certain it is that the first risks to be insured against were incidental to the dangers of the deep. From insuring vessels against loss by fire, shipwreck, or piracy, marine insurance was extended to cover the lives of the mariners, and more particularly of the merchants, who in those days used generally to accompany their merchandise shipped to Mediterannean ports. These merchants before embarking would pay a premium to some underwriter to guarantee payment of their ransom in the event of capture by Moorish or other pirates. Gradually the field of insurance became widened, and a *policy* was issued to any person who paid the necessary *premium*.

One of the primary objects of insurance was to safeguard creditors, especially those who advanced money with which to purchase some lucrative post (for until comparatively modern times appointments were usually bought and sold). The Chamber of Insurance was founded in 1574 by royal patent for the purpose of regulating and registering all such contracts. This Chamber was destroyed in the great fire of London, 1666, and was succeeded by the "Office of Assurances." Policies could there be registered verbatim, but presumably the bulk of the transactions related to marine insurance.

I. Life Insurance. — The object of life insurance as a provision for wife and children does not seem to have prevailed before the beginning of the seventeenth century; and the earliest record of insurance with such an object is dated 1622. Life insurance seems to have been invariably underwritten by private individuals up to 1699, that being the year in which the first association was established, viz., "The Society of Assurance for Widows and Orphans." In 1705 another English society was founded, called "The Amicable Society for a Perpetual Insurance." This was to consist of 2,000 members, each of whom paid an entrance fee of ten shillings and a yearly subscription of £6, 4s. The same amount of premium was paid by each member irrespective of age, but no person was admitted under 12 or over 55. It was not till 1807 that varying rates of premium were introduced. This society was amalgamated with the "Norwich Union" in 1864. It is interesting to note that the Amicable was the only insurance society to survive the South Sea Bubble.

Life Insurance (or Assurance, as it is frequently called in England) is primarily to cover the pecuniary loss that would otherwise be occasioned by the death of the individual insured. It includes a saving or investment element known as endowment insurance. Life insurance computations differ radically from those of fire and marine insurance, for the following reason: while in fire and marine the risks of loss do not greatly change from year to year, and there may never be a loss, in life insurance the risk of loss, i. e., the chance of death, increases steadily, and the death loss is certain to occur within some definite period. To obviate the serious disadvantages of a premium that increases from year to year, the "level" premium is computed, i. e., a premium without change, so adjusted that the overpayments of the earlier years and their interest earnings make up the deficiencies of the later years. The fund thus set aside constitutes the reserve held against the policy and provides for whatever return is made to a policyholder who does not keep up his policy to the end. Whole life policies provide for the payment of the sum insured whenever death occurs; the premiums may be continuous during the existence of the policy, or commuted to a limited number of payments (say 10 or 20) of larger amount. Endowment policies provide for payment of the sum insured at a definite time, or before that time in case of death. Term policies only provide for payment on death within a stated period.

State supervision of insurance began about the middle of the nineteenth century. In 1849 the first general insurance act was passed by New York state, and its insurance department inaugurated in 1859, or four years later than Massachusetts had established its insurance department and adopted the Actuaries' Table of Mortality, based on the combined experience of seventeen British companies. In 1868 the New York Insurance Department adopted the American Experience Table of Mortality now in general use. State supervision and insurance departments are now general. In England and Canada a mortality table known as "Hm" or Twenty Offices Table has been used. The latest British authority is the "Om" (1893) Table.

According to the latest returns the life insurance in force in the United States (including assessment insurance) is $20,809,015,450; Great Britain, $4,426,124,000; Germany, $1,400,000,000; France, $727,673,358; Austria, $370,621,530; Scandinavia, $150,402,801; Switzerland, $144,412,854; Russia, $62,839,902. The assets of, and amount insured by, the principal American companies, January 1, 1908, were as follows:—

Companies.	Insurance in force.	Gross assets.
New York Life, N. Y.	$2,005,341,184	$516,762,763
Metropolitan, N. Y.	1,804,946,581	209,825,777
Mutual Life, N. Y.	1,452,752,408	510,379,976
Equitable Life, N. Y.	1,340,126,354	460,788,026
Prudential, N. J.	1,337,367,045	151,047,694
Northwestern Mutual, Wis.	881,563,592	236,035,222
Mutual Benefit, N. J.	440,742,990	112,497,404
Penn Mutual, Pa.	425,956,270	92,049,382
John Hancock Mutual, Mass.	273,116,166	49,421,304
Aetna Life, Ct.	271,027,574	86,703,239
Union Central, Ohio	256,564,566	62,264,653
Massachusetts Mutual	213,475,260	46,751,608
Provident Life and Trust, Pa.	191,986,786	60,964,095
Travelers' (Life Department)	180,335,420	46,151,632
New England Mutual	178,872,320	44,454,097
Connecticut Mutual	174,716,005	66,762,350
National Life, Vt.	151,779,282	40,692,155
State Mutual, Mass.	121,725,794	30,618,011
Fidelity Mutual, Pa.	119,452,264	15,404,601
Germania, N. Y.	114,589,963	39,622,162
Phœnix Mutual, Ct.	103,080,718	23,891,147
Home Life, N. Y.	86,193,297	20,669,963
Manhattan Life, N. Y.	69,066,914	20,421,876
Berkshire Life, Mass.	64,910,790	16,443,588
Union Mutual, Me.	62,842,507	13,771,872
Washington Life, N. Y.	57,859,321	19,118,046
Security Mutual, N. Y.	48,473,969	4,921,779
Connecticut General	36,427,869	7,332,210
Columbian National	35,500,886	4,284,832
United States, N. Y.	35,018,078	8,826,777

II. Fire Insurance.—Those taking out fire insurance may benefit by the following suggestions:—

That you may understand your rights, become familiar with the laws of the state under which you are insuring. No matter how much the insurance is above the value of the property, you can, in most states, collect only the amount of the actual damage; but in New Hampshire and some other states, in accordance with the "valued policy" in effect there, you may, should the buildings be totally destroyed by fire, collect the amount of the loss, without regard to the amount of insurance placed thereon; and so the company will most probably not insure the property for more than it is worth.

Permission must be obtained from the agent to allow premises intended for occupancy to remain vacant longer than is provided for in the policy.

If the foundation of a building is impervious to fire, or if it would be of no value to the insured should the building be destroyed by fire, the item of foundation may be specifically omitted from the policy.

An accurate list of all the furniture or personal property insured, giving the probable value of each article, should be made, and kept in a place secure against fire. By some people the bills of all articles of furniture and property covered by such an insurance are filed away, that, should a dispute arise over the adjustment of a claim, they may be produced as evidence. If a change is made in the location of furniture or movable goods covered by such an insurance, the agent must be notified.

The insurance policy should not be kept in the building insured therein.

Read the policy through, noting the date of expiration, as the agent may not at the time inform you that it has expired, and so your property may go unprotected. Make sure that it contains a clause permitting other insurance, and also a clause covering loss or damage from lightning.

Carefully fulfill the conditions of the policy.

Premiums should be paid promptly.

Notify the agent immediately in case of loss.

It is less expensive in the long run to take out a policy for some period like three years than one for a shorter time.

The policy should bear this or a similar indorsement if the property is mortgaged.

"Payable in case of loss to....., mortgagee, as his interest may appear."

The fire insurance statistics regarding companies doing business in the United States (1908) show that there were 347 stock and 271 mutual companies, with an aggregate capital of $88,560,679; assets, exclusive of premium notes, $565,677,747; net surplus, $175,726,623; cash premiums received during year, $316,810,104; total cash income during year, $342,268,242; paid for losses during year, $147,089,344; paid for dividends during year, $26,009,878; expenses other than losses and dividends during year, $108,688,988; total disbursements during year, $281,788,210; risks written during year, $32,000,000,000.

The condition of the principal joint-stock companies doing business in the United States is given as follows for 1908:—

Companies.	Admitted assets.	Capital.	Net surplus.
Home, New York	$20,862,698	$3,000,000	$6,703,211
Hartford, Ct.	18,882,806	2,000,000	3,189,005
Continental, New York	16,399,452	1,000,000	7,503,591
Aetna, Ct.	14,884,569	4,000,000	3,529,539
German-American, N. Y.	13,508,038	1,500,000	4,415,353
Liverpool, London & Globe	12,560,211	*200,000	4,401,167
Royal, England	11,894,083	*200,000	3,094,131
Ins. Co. of N. America	11,221,740	3,000,000	976,343
Phoenix, New York	8,719,795	1,500,000	849,462
Phoenix, Ct.	7,965,454	2,000,000	1,425,837
Fire Association, Pa.	7,840,675	750,000	1,786,785
National, Ct.	7,453,965	1,000,000	1,168,273
American, N. J.	7,230,738	750,000	1,601,615
Springfield F. & M.	7,204,959	2,000,000	862,399
Queen, New York	6,844,560	1,000,000	1,961,539
N. British & Mercantile	6,832,711	*200,000	2,698,689
Commercial Union, Engl.	6,744,997	*200,000	1,885,166
Pennsylvania Fire	6,462.117	750,000	1,615,284
Firemen's Fund	5,938,085	1,600,000	603,221
Connecticut Fire	5,817,424	1,000,000	1,042,596
Germania, N. Y.	5,185,650	1,000,000	949.261
American Central, Mo.	5,039,623	2,000,000	817,793
St. Paul F. & M., Minn.	4,994.843	500,000	1,048,519
Boston, Mass.	4,804,570	1,000,000	1,964,842
Firemen's, N. J.	4,701,069	1,000,000	2,148,371
Scottish Union & Nat'l.	4,663,344	*200,000	2,347,685
Northern, England	4,592,631	*200,000	1,335,196
Northwestern Nat'l, Wis.	4,533,883	1,000,000	1,153.694
New Hampshire Fire	4,500,404	1,100,000	1,314,363
Niagara Fire, N. Y.	4,326,789	750,000	785,090
Glens Falls, New York	4,267,271	200,000	2,020,893
Globe & Rutgers, N. Y.	4,163,182	400,000	1,098,732
Hanover Fire, N. Y.	4,114,164	1,000,000	854,091
Munich, Germany	3,893,267	*200,000	1,295,594
Sun, England	3,790,767	*200,000	1,051,989
Westchester Fire, N. Y.	3,635,089	300,000	907,460
London, England	3,261,453	*200,000	783,636
Phoenix, England	3,071,445	*200,000	903,571
Palatine, England	3,063,759	*200,000	1,049,547
Norwich Union, England.	2,987,740	*200,000	538,461

*The New York law requires a deposit of $200,000 from foreign companies with the insurance department. This is treated by the department as "deposit capital," and the surplus stated in the next column is "surplus beyond deposit capital" and other liabilities.

The following statement shows the annual property losses in the United States by fires from 1890 to 1908:—

Years.	Property loss.	Insurance loss.
1890	$108,993,792	$65,015,465
1891	143,764,967	90,576,918
1892	151,516,098	93,511,936
1893	167,544,370	105.994,577
1894	140,006,484	89,574,699
1895	142,110,233	84,689,030
1896	118,737,420	73,903,800
1897	116,354,570	66,722,140
1898	130,593,905	73,796,080
1899	153,597,830	92,683,715
1900	160,929,805	95,403,650
1901	174,160,680	106,680,590
1902	161,488,355	94,775,045
1903	145,302,155	87,900,000
1904	230,520,131	138,314,212
1905	165,221,650	109,236,420
1906	444,326,124	276,732,270
1907	215,671,250	114,646,335
1908	*237,000,000	*135,000,000
Total	$3,307,839,819	$1,995,156,882

*Estimated.

III. Assessment and Fraternal Insurance.—A very old form of insurance commonly maintained by Granges and secret orders. As each member is assessed for his proportion of the expense of the society and the death losses, the annual premium to be paid by the insured is not a fixed sum, but is subject to change. It is probably the cheapest kind of insurance, but also the most uncertain, many associations having failed, while the assessments are sometimes high. It is taken out principally in small amounts and by persons of limited means.

IV. Industrial Insurance.—Insurance for small amounts, payments on the premium being usually made each week, taken out by those who cannot or who do not wish to insure for so large a policy as, perhaps, $1,000. While it does not essentially differ from ordinary insurance, the cost is nearly double, and it is criticised by many as encouraging the insurance of children and infants, which is objectionable, especially among the very poor. In many cases a burial fund is provided by such insurance.

V. Accident Insurance.—By this form of insurance, taken out largely by travelers or by those whose work is perilous, the one taking a policy may, in case of accident to himself, recover from the company. The payment—according to the policy—is so much per week during the time of disablement, and is usually limited to a fixed number of weeks, or it is a given sum if death results from the accident, or smaller stated sums if the loss of sight or of a limb, or a lesser permanent injury, is suffered. The latter payments would be in addition to the weekly payments on account of disability.

Accident insurance in England owes its rise to the sudden development of railway traveling about the middle of the nineteenth century. In the United States it dates from the formation of the Travelers Insurance Company of Hartford, Connecticut, in 1863. Originally the premiums were uniform, regardless of age or occupation; but now all occupations are grouped into classes of varying degrees of risk. As a rule no person under 18 or over 65 is accepted for this form of insurance.

Accident insurance has been made an advertising feature by many periodicals, a fixed insurance covering the purchaser of the current issue until the appearance of the next number.

VI. Liability Insurance.—In regard to certain classes of securities, notably those of street railways, this subject should be considered by investors. Even though the corporation named is thought to be of good financial standing, accidents are quite likely to occur, especially where grades, curves, etc., are necessitated, and the company may be called upon to pay out for damages a sum equal to its earnings for some time to come, perhaps even suffering financial disaster. But unless there is special state legislation to the contrary, a mortgage has prior right over a claim for damages. In regard to a railroad the opposite is true. But most railroads are such large corporations that the loss resulting from accidents would scarcely be enough to cause them financial distress.

"Liability insurance" is quite generally carried by gas and electric light companies, and they do not, besides, offer much risk of accident to the public the responsibility for which would rest with the company.

A very desirable and not expensive class of insurance called "Employers' Liability Insurance" is carried by many corporations, insuring against loss to the company by accident to employees.

VII. Marine Insurance.—That form of marine insurance which is still practised under the name of "bottomry," and which is virtually the mortgage of a vessel, was well known to the Romans and is thought to have been in use among the Phoenicians and the Greeks. If the vessel failed to arrive safely the lender lost both the principal and the interest. Modern marine insurance is believed to have been introduced by the Lombards about the beginning of the thirteenth century, and still further developed by the merchants of the Hanseatic League in the fourteenth century.

The first legislation in England on the matter was an act of 1601 in Elizabeth's reign. The first English companies, viz., the London Assurance Corporation and the Royal Exchange Assurance Corporation, were chartered in 1720, previous to which the business was controlled entirely by private underwriters. The latter still continued to transact the greater part of the business, and underwriting was generally carried on at the coffee-houses of the day. The most famous of these coffee-houses was Lloyd's, in Tower Street, London, and marine insurance became so identified with its name that when an association of underwriters was organized about 1770, the name "Lloyd's" was permanently adopted. The association was reorganized in 1811, and incorporated in 1871. The Lloyd's policy is the form used in both Great Britain and the United States; Lloyd's agents are to be found in every part of the world frequented by merchant vessels, and Lloyd's classification is the one universally recognized in connection with the construction and seaworthiness of ships. Specific information regarding ships and shipping and various maritime matters is published annually in *Lloyd's Register of British and Foreign Shipping.*

The advisability of merchant vessels being well rated at Lloyd's has done much to improve their general construction and equipment; while the "Plimsoll mark" further safeguards the ship and crew. The Plimsoll mark is so-called from Samuel Plimsoll (1824-1898), whose trenchant attacks on shipowners led to the passing of the Merchants' Shipping Act in 1876 which made it compulsory for every sea-going vessel to have a mark painted on the outside of the hull indicating the maximum load-line. The Board of Trade is empowered to detain any vessel which is loaded in excess of the limit.

More than three quarters of the marine insurance in the world is underwritten in Great Britain. American sea-going ships are usually registered in Great Britain in order that they may secure British cargoes.

VIII. Average.—In maritime law and marine insurance the term "Average" denotes the equitable and proportionate distribution of loss or expenditure incurred by one or more parties in the interest of all persons concerned. In the event of any voluntary sacrifice being necessary in the interest of the common adventure the contribution levied on all interested parties is termed the *general average.* It is so called because it falls upon the gross amount of ship, cargo, and freight which are saved by the sacrifice. Originally the rule applied only to sacrifice by jettison, but has become extended to all voluntary losses made for the common interest. Marine insurance is really a transfer of liability from owners to underwriters for such contributions under the law of general average.

Particular average means the damage or partial loss happening to the ship, cargo, or freight

in consequence of some unavoidable accident; and is borne by the individual owner and not by the contributory interests in general. Examples of particular average are: accidental stranding or collision, capture of ship or cargo by an enemy, carrying away of masts by storm; the voluntary cutting away of a mast to save the ship would be "general average."

Petty average is a term applied to sundry small charges, such as pilotage, port charges, and the like, and which were formerly apportioned between the owners of the ship and the cargo, but which are now generally provided for in the bill of lading.

IX. Lloyd's Symbols.—Symbols used by Lloyd's Maritime Insurance Association are as follows:—

Wooden Ships.—The letters A, E, I, U indicate groups classified according to construction. Figures (1, 2, 3, 4) following the letter refer to equipment; e. g., A1 denotes that both hull and equipment are in first-class condition. Figures preceding the letter refer to the number of years for which the classification holds good, e. g., 12A1. In the event of A1 vessels receiving an extension (1 to 8 years) the symbol becomes 12A1-Cont. 6A1, showing that the 12 year classification continues for 6 years longer. Should the vessel be later restored it might still remain in the A1 class with the following symbol: 12A1-Cont. 6A1-Rest. 6A1. When the age limit has been reached, and if the vessel be still seaworthy for carrying perishable goods to all parts of the world, the A is marked *red*. If only fit to convey perishable goods on shorter voyages it is registered A in black.

Iron and Steel Ships.—A broad **A** is used to distinguish them from wooden ships. 100**A** to 90**A** inclusive designating ships that need surveying every four years. 85**A** and under require surveying every three years. Equipment is indicated in the same manner as in the case of wooden ships. The highest rating a ship can obtain is 100A1.

The classification of the German Lloyd's introduces some modifications of the above symbols. Wooden vessels of inferior construction are designated BI, B, CL, and CK; iron and steel ships **A**, **A**, **A**, with the numerals 100, 90, etc., prefixed, denoting the structural strength. The small figure under the crossbar of the **A** shows the number of years still to run before the ship is again surveyed.

SECURITIES.

I. Listed Securities.—Before a security may be traded in upon a stock exchange, it must comply with certain rules. A description of the security showing plainly every detail and particular of the property represented must be submitted to the officers of the exchange. Also, at regular intervals, each company whose securities have been listed must furnish a statement of its financial conditions and earnings. All applications for placing securities upon the "list" of the New York Stock Exchange are received and considered by the "Stock List Committee," which reports and makes recommendations concerning the same—giving full statement of the organization, indebtedness, resources, earning and capitalization—to the "Governing Committee," in charge of the arrangement and revision of the regular "list of securities." Therefore, to a certain extent, "listed" securities have the approval of the exchange, it being understood that the corporations represented are, as required, furnishing sworn statements of their earnings and financial condition to the exchange.

But in no way is the stock exchange surety for the real value of any security "listed" upon it, "listing" simply indicating that the public may inform itself of the facts and figures in regard to the security, and it does not follow that a security is any better if listed on an exchange than one not so listed.

II. Industrial Securities.—"Industrials." Securities which manufacturing companies issue. The consolidation of a number of firms formerly engaged in the same line of manufacturing causes the larger "industrials." But as yet, in proportion to their total valuation, bonds have not been issued upon industrial properties so largely as upon railways, perhaps because the foreclosure value of the former is uncertain. For their value depends greatly upon their successful conduct, the buildings and machinery being worth little for other use.

This, with the good will and patents, should be considered in investigating the assets of new "industrials," as none of these things are of value unless the corporation is prosperous. Its earning capacity should be definitely understood. Has the consolidation reduced expenses and increased the earnings; and what percentage are the latter of the total capitalization? If the company is carrying a "floating indebtedness," what is the reason? Is depreciation correctly charged? It is very easy to deceive the public by the way the books are kept. On an average, from year to year, one half the net earnings should be reserved as a surplus or used for permanent improvements, the other half being divided among the stockholders. In times of extended business and financial disaster, consumers do not hesitate to cancel contracts, and to enforce them to any great extent has not proved worth while. Therefore do not think seriously of the fact that orders are in hand for months ahead for the full capacity of the plant. What does deserve consideration is the value of the product of the plant to the community, and the necessity of continued operation; also to what extent the company can control its special line of business by the control of raw material or otherwise.

Beware of "over-capitalization" in considering stocks. The value of the property, above the bonds, if any, plus the necessary working capital, is usually the value of the preferred stock, while that of the common stock is the result of economies in operation from centralized management.

III. Railroad Securities.—Since the railroads are the transporters, not the producers, of wealth, their earnings are the best indication of existing business conditions; and the price of their stocks and bonds is governed very largely by the earnings.

The better grade railroad bond, safely considered, probably gives the best rate of interest return obtainable to-day; and the permanent solvency of such a corporation is reasonably assured, unless, in the future, the road is managed selfishly or poor financiering causes it to be overburdened with debt.

But the selection of a railroad bond is an in-

tricate problem, since it is easy to be deceived by such terms of bond issues as first consolidated, general mortgage, consolidated mortgage, and prior liens. Before investing, the real status of such mortgage should be clearly understood, issues not preceded by earlier mortgage to be preferred.

Be sure to learn whether or not the railroad company is keeping up and improving its physical condition, and for that purpose is making proper expenditures directly from the earnings. Roads which have not within the past ten years spent $10,000 per mile for such cause are considered behind the times, but those which have done so without thereby increasing their indebtedness should, if everything else is equal, be considered sound financially. Sometimes expenditures for improvements are met by increasing the capital account by the issue of new securities, and it is then understood in this country that the limit in the increase of per cent. of net earnings to capitalization has been reached.

Careful investigation should be made of competition or likelihood thereof, the importance of the terminals, the management of the property, its control, and the class of business tributary thereto. Find out if the freight rates are excessive, especially if the railroad is **not** doing an interstate business, and therefore not regulated by the railroad rate law. Study carefully the earnings of a railroad under construction.

In America, bonds are issued with a definite maturity, and although refunded and not paid when due, we yet consider what will be the value of property at the maturity of the loan. In England, irredeemable debentures are issued, making possible a careful analysis of the earning power of the road, that the interest rate may be permanent, as with stock. Possibly the English way is correct, for not considering that it may be bought by some other company, if a railroad under good management and normal conditions cannot earn its charges, its value is doubtful.

PUBLIC FINANCE.

Public finance is the science which deals with the receipts and expenditures of the state. It is intimately related to political science and political economy, drawing largely from both and yet contributing to both. The leading German authorities on the subject treat public finance as an integral part of political economy, although as a science the former is much older. Under medieval governments the methods were simple, for expenditures were met from the personal revenues of the ruler, or by gifts, fees, penalties, etc.; there being no separation of the income of the state from that of the sovereign. But as soon as a direct levy was made in order to secure a revenue for public needs beyond the upkeep of the royal household, public finance both as a science and an art began to be studied. The greatest impetus given to the subject previous to the nineteenth century was by the writings of the German Cameralists; but in England and France public finance was more or less neglected, the only section of the subject to receive any attention being taxation.

Public finance falls naturally under four heads, viz.: Public Expenditure, Public Revenue, Public Indebtedness, and Financial Administration.

I. Public Expenditure.—Expenditures may be classified as follows: (*a*) those for the common benefit, including the general expenditures for the support of the administrative and legislative departments, national defense and maintenance of order, education, construction of public buildings: and (*b*) those for the benefit of individuals. The second category may be subdivided into (1) expenditures conferring a special benefit on certain classes, because of their incapacity or dependence, and treated as common benefit, e. g., relief of poverty and sickness, old age pensions, care of the defective; (2) expenditures conferring a special benefit on some and a common benefit on all, e. g., the administration of justice, the postal service, and special rights such as copyrights and patent rights, the laying out of streets, building of roads, etc.; (3) those conferring a special benefit only on individuals, e. g., all of the great industries carried on by the state or by cities, all government and municipal monopolies and the like.

Under a federal government like that of the United States expenditures must be apportioned between the central and the state governments, and further between the latter and the local governments. The total expenditures of the United States government from its commencement in 1789 to 1908 have been: For civil and miscellaneous, $4,252,721,996; war, $6,364,523,657; navy, $2,327,207,151; Indians, $469,338,140; pensions, $3,893,433,740; interest, $3,191,817,866; total, $20,499,042,550. The following table shows the expenditures of the United States government by fiscal years from 1893 to 1908:—

Years ending June 30.	Civil and miscellaneous items.	War department.	Navy department.	Indians.	Pensions.	Interest on public debt.	Total ordinary expenditures.
1893	$103,732,799	$49,641,773	$30,136,084	$13,345,347	$159,357,558	$27,264,392	$383,477,954
1894	102,165,471	54,567,930	31,701,294	10,293,482	141,177,285	27,841,406	367,746,867
1895	93,279,730	51,804,759	28,797,796	9,939,754	141,395,229	30,978,030	356,195,298
1896	87,216,235	50,830,921	27,147,732	12,165,528	139,434,001	35,385,029	352,179,446
1897	90,401,267	48,950,267	34,561,546	13,016,802	141,053,164	37,791,110	365,774,159
1898	96,520,505	91,992,000	58,823,985	10,994,668	147,452,369	37,585,056	443,368,583
1899	119,191,256	229,841,254	63,942,104	12,805,711	139,394,929	39,896,925	605,072,180
1900	105,773,190	134,774,768	55,953,078	10,175,107	140,877,316	40,160,333	487,713,792
1901	122,282,003	144,615,697	60,506,978	10,896,073	139,323,622	32,342,979	509,967,353
1902	113,469,324	112,272,216	67,803,128	10,049,585	138,488,560	29,108,045	471,190,858
1903	124,944,290	118,619,520	82,618,034	12,935,168	138,425,646	28,556,385	506,099,007
1904	186,766,703	115,035,411	102,956,102	10,438,350	142,550,266	24,646,490	582,402,321
1905	146,952,549	122,175,074	117,550,308	14,236,074	141,773,964	24,590,944	567,278,913
1906	120,000,627	93,659,462	110,956,167	12,746,512	141,034,081	24,310,326	568,727,565
1907	124,117,119	101,671,881	97,606,595	15,140,292	139,290,910	24,482,524	578,360,592
1908	146,898,930	110,284,864	118,726,347	14,550,758	153,887,995	21,424,990	659,552,125

II. Public Revenue.—The main sources of public revenues are threefold: (*a*) taxes, that is, revenue collected from all the citizens by compulsion on the ground that what is necessary for and beneficial to all should be contributed to by all; (*b*) fees, that is, revenue collected by compulsion and which confers some special benefit upon the persons from whom it is levied; and (*c*) "prices," that is, contractual revenue or, in other words, wealth created by the state for itself. Revenue is also derived from gifts, property by reversion, fines and penalties, and the like, but these minor sources play a comparatively insignificant part in public finance.

In the days of feudalism the needs of the state were provided for without the use of money; but with the growth of public functions came the need of public revenues. At first extraordinary payments, that is, those beyond the receipts from domains, were of a voluntary nature, as is clearly shown by their names—*beden, benevolences, dona, petitiones*. As the requirements became permanent the demands grew also permanent and eventually became compulsory. This change has invariably been coincident with the growth of constitutionalism and popular representation; and the revenues, which originally were at the absolute disposal of the monarch, gradually passed under the control of the representatives of the people. Compulsion is now a universal feature of taxation, while the uniformity of the revenue systems of various countries is accounted for by the fact that the same principle underlies them all, viz., that common necessity and benefit beget common obligations. Modifications in the forms of taxation are owing to the search for new measures, but the justification remains the same. "Prices," as Professor Seligman calls them, represent the value of commodities or services made or rendered by the government expressed in terms of money. These contractual revenues or "prices" merely represent a change in form of the wealth already owned, the state converting into money privileges, services, and material things which it has brought into being.

In addition to a revenue system being adequately productive and capable of yielding a steady income, it must likewise be elastic, permitting of expansion in case of sudden need.

Under a federal form of government it is necessary that the constituent states should have independent revenues, for lack of financial independence tends to beget a loss of political independence. In the United States this is provided for by leaving direct taxation to the state and local governments, while customs duties, to a large extent excise duties, are left to the Federal government.

The total receipts of the United States from the beginning of the government, 1789, to 1908 have been: From customs, $10,623,877,484; internal revenue, $794,728,492; direct tax, $328,131,944; public lands, $391,960,383; miscellaneous, $1,781,736,077; total, excluding loans, $20,741,630,749. The following table shows the receipts of the United States government by fiscal years from 1893 to 1908:—

Years ending June 30.	Customs.	Internal revenue.	Sales of public lands.	Miscellaneous sources.	Total revenue.	Excess of revenue over ordinary expenditures.
1893	$203,355,017	$160,296,130	$3,182,090	$18,253,898	$385,818,629	$2,341,674
1894	131,818,531	147,111,232	1,673,637	17,118,618	297,722,019	*69,803,261
1895	152,158,617	143,421,672	1,103,347	16,706,438	313,390,075	*42,805,223
1896	160,021,752	146,762,865	1,005,523	19,186,061	326,976,200	*25,203,246
1897	176,554,126	146,688,774	864,581	23,614,422	347,721,905	*18,052,254
1898	149,819,594	169,943,040	1,243,129	84,845,631	405,321,335	*38,047,247
1899	206,141,225	272,486,648	3,070,137	33,324,840	515,652,666	*89,898,657
1900	233,164,871	295,327,927	2,836,883	35,911,171	567,240,852	79,527,060
1901	238,585,456	307,180,664	2,965,120	38,954,098	587,685,338	77,717,984
1902	254,444,709	271,880,122	6,261,927	29,891,476	562,478,233	91,287,376
1903	284,479,582	230,810,124	11,024,744	34,082,224	560,396,674	54,297,667
1904	261,274,565	232,904,119	9,283,342	37,169,723	540,631,749	*41,770,572
1905	261,798,857	234,095,741	7,017,011	41,363,076	544,274,685	*23,004,229
1906	300,657,413	249,063,868	7,585,524	37,607,910	594,914,715	26,187,141
1907	333,230,126	270,309,388	11,553,178	50,213,442	665,306,134	86,945,543
1908	285,680,653	250,714,008	12,715,709	50,785,393	599,895,763	*90,225,325

* Expenditures in excess of revenue.

United States Internal Revenue Taxes.

Schedule of articles and occupations subject to tax.

SPECIAL TAXES AND RATES.

Rectifiers of less than 500 barrels a year, $100; rectifiers of 500 barrels or more a year, $200.

Wholesale liquor dealers, $100; retail liquor dealers, $25.

Wholesale dealers in malt liquors, $50; retail dealers in malt liquors, $20.

Manufacturers of stills, $50; and for stills or worms, manufactured, each, $20.

Brewers: Annual manufacture less than 500 barrels, $50; annual manufacture 500 barrels or more, $100.

Manufacturers of filled cheese, $400; wholesale dealers in filled cheese, $250; retail dealers in filled cheese, $12.

Manufacturers of oleomargarine, $600; wholesale dealers in oleomargarine artificially colored in imitation of butter, $480; wholesale dealers in oleomargarine free from artificial coloration, $200; retail dealers in oleomargarine artificially colored in imitation of butter, $48; retail dealers in oleomargarine free from artificial coloration, $6.

Manufacturers of adulterated butter, $600; wholesale dealers in adulterated butter, $480; retail dealers in adulterated butter, $48; manufacturers of process or renovated butter, $50; manufacturers, packers, or repackers of mixed flour, $12.

DISTILLED SPIRITS, ETC.

Distilled spirits per gallon, $1.10; stamps for distilled spirits intended for export, each, 10 cents, except when affixed to packages containing two or more 5-gallon cans for export, 5 cents.

Case stamps for spirits bottled in bond, 10 cents.

Wines, liquors, or compounds known or denominated as wine, and made in imitation of sparkling wine or champagne, but not made from grapes grown in the United States, and liquors not made from grapes, currants, rhubarb, or berries grown in the United States, but produced by being rectified or mixed with distilled spirits or by the infusion of any matter in spirits, to be sold as wine, or as a substitute for wine, in bottles containing not more than one pint per bottle or package, 10 cents; same, in bottles containing more than 1 pint, and not more than 1 quart, per bottle or package, 20 cents (and at the same rate for any larger quantity of

such merchandise, however put up or whatever may be the package).

Grape brandy used in the fortification of pure, sweet wine, under an act approved June 7, 1906 (to be assessed), per gallon, 3 cents.

FERMENTED LIQUORS.

Fermented liquors per barrel, containing not more than 31 gallons, $1 (and at a proportionate rate for halves, thirds, quarters, sixths, and eighths of barrels); more than one barrel of 31 gallons, and not more than 63 gallons, in one package, $2.

TOBACCO AND SNUFF.

Tobacco, however prepared, manufactured, and sold, or removed for consumption or sale, per lb., 6 cents; snuff, however prepared, manufactured, and sold, or removed for consumption or sale, per lb., 6 cents.

CIGARS AND CIGARETTES.

Cigars of all descriptions made of tobacco or any substitute therefor, and weighing more than 3 lbs. per thousand, $3; cigars of all descriptions made of tobacco, or any substitute therefor, and weighing not more than 3 lbs. per thousand, 18 cents per lb., 54 cents; cigarettes weighing not more than 3 lbs. per thousand and a wholesale value or price of more than $2 per thousand, 36 cents per lb., $1.08; cigarettes weighing not more than 3 lbs. per thousand and of a wholesale value or price of not more than $2 per thousand, 18 cents per lb., 54 cents; cigarettes weighing more than 3 lbs. per thousand, $3.

OLEOMARGARINE.

Oleomargarine, domestic, artificially colored to look like butter, of any shade of yellow, per lb., 10 cents; oleomargarine, free from coloration that causes it to look like butter, of any shade of yellow, per lb., ¼ of 1 cent; oleomargarine, imported from foreign countries, per lb., 15 cents.

ADULTERATED BUTTER AND PROCESS OR RENOVATED BUTTER.

Adulterated butter, per lb., 10 cents; process or renovated butter, per lb., ¼ of 1 cent.

FILLED CHEESE.

Filled cheese, per lb., 1 cent; same, imported, per lb., 8 cents.

OPIUM.

Prepared smoking opium, per lb., $10.

MIXED FLOUR.

Mixed flour, per barrel of 196 lbs., or more than 98 lbs., 4 cents; half barrel of 98 lbs., or more than 49 lbs., 2 cents; quarter barrel of 49 lbs., or more than 24½ lbs., 1 cent; eighth barrel of 24½ lbs., or less, ½ of 1 cent. (Mixed flour imported from foreign countries, in addition to import duties, must pay internal revenue tax as above.)

CIRCULATION OF NOTES PAID OUT BY BANKS AND BANKERS.

Circulation issued by any bank, etc., or person (except a national bank taxed under Section 5214, Revised Statutes, and Section 13, Act March 14, 1900), per month, 1-12 of 1 per cent.

Circulation (except national banks) exceeding 90 per cent. of capital, in addition, per month, 1-6 of 1 per cent.

Banks, etc., on amount of notes of any person, state bank, or state banking association, used for circulation and paid out, 10 per cent.

Banks, etc., bankers, or associations, on amount of notes of any town, city, or municipal corporation paid out by them, 10 per cent.

Every person, firm, association, other than national bank associations, and every corporation, state bank, or state banking association, on the amount of *their own notes* used for circulation and paid out by them, 10 per cent.

Every such person, firm, association, corporation, state bank, or state banking association, and also every national banking association, on the amount of notes by any person, firm, association, other than a national banking association, or of any corporation, state bank, or state banking association, or of any town, city, or municipal corporation, used for circulation, and paid out by them, 10 per cent.

PLAYING CARDS.

Playing cards, per pack, containing not more than 54 cards, 2 cents.

TAXES NOT PAYABLE BY STAMPS.

Tax on deficiencies in production of spirits—on excess of materials used in production of spirits; on circulation of banks and bankers; on notes paid out by banks and others; on brandy used in the fortification of wine. Penalties of 50 per cent. and 100 per cent.

III. Public Indebtedness.—Public indebtedness consists of both funded and unfunded debts. A funded debt is one which provides capital for permanent needs or for purposes of war, and covers a longer period. An unfunded or floating debt is generally for some temporary need, such for instance as the payment of the current dues of the treasury, and is of relatively shorter duration. No sharp line, however, can be drawn between these two classes.

A state may borrow in only two ways: (*a*) by compelling people to lend, (*b*) by offering terms to which people assent. The first may be termed forced debts; these are mostly obsolete, but irredeemable paper money is commonly spoken of as a "forced loan." The second may be styled contractual debts, which may be divided into two groups, viz., contracts containing provisions intended to insure additional confidence, and those where confidence is so assured that no such provisions are taken. The first group may be subdivided into two classes: (1) where confidence rests upon the fact that the loans are not expended but are detained to meet the debt charges; such as voluntary deposits with and without interest, statutory deposits including guarantee funds of various kinds with and without interest, insurance, deposits of coin or bullion to secure circulating notes, and estates in hands of the courts pending litigation; (2) where confidence rests on the fact that definitely specified revenues are set aside for the payment of the debt, based either on the revenues of a particular period, or on prices, fees, or special taxes. The second group comprises contracts which call for (*a*) repayment of the principal only, e. g., redeemable notes not legal tender and not assured by any deposit; (*b*) payment of principal and interest, e. g., bonds and annuities, and (*c*) payment of interest only, e. g., perpetual bonds and permanent annuities. As a rule the leading nations are able to secure loans without resorting to any special method of gaining confidence, their credit alone being sufficient. The greater part of European debts consists of "perpetual bonds," which fix no date at which they mature, but are redeemable whenever the debtor state chooses.

The first debts of the United States were in the form of simple perpetual bonds with no limitations. After the war of 1812, a time limit was set within which it was promised not to redeem the bonds. The "limited option" debt was introduced by the United States government in 1862, the bonds being made "redeemable at the pleasure of the United States after five years, and payable twenty years from date of issue." These were termed "five-twenties." A like plan was followed in the so-called "ten-forties." Next in importance to perpetual bonds are the "terminable annuities"; but life and other terminable annuities are being replaced by perpetual bonds. The favorite European form of public debt is that of lottery loans, but as this partakes of the nature of gambling it is a form which finds no favor in Great Britain or the United States.

Local governments usually raise loans to provide means for some productive enterprise, such as water works, street railroads, gas or lighting plant, etc. These are called "productive loans," and the enterprises so financed are in

themselves an additional security. Sometimes national governments have "invested" debts of this kind. Prussia's debt for instance was almost entirely contracted for the purchase of railroads, which provide both the interest and the sinking fund.

PUBLIC DEBT OF THE UNITED STATES.

The following classification of the public debt is taken from an official statement dated November 1, 1908:—

Interest-bearing debt		$897,253,990.00
Debt on which interest has ceased since maturity		3,738,235.26
Debt bearing no interest		392,665,652.78
Aggregate of interest and non-interest bearing debt		$1,293,657,878.04
Certificates and Treasury notes offset by an equal amount of cash in the Treasury		1,344,315,869.00
Aggregate of debt, including certificates and Treasury notes		$2,637,973,747.04
CASH IN THE TREASURY.		
Gold certificates	$850,817,869.00	
Silver certificates	488,793,000.00	
Treasury notes of 1890	4,705,000.00	
		$1,344,315,869.00
National bank 5 per cent. fund	$23,400,117.40	
Outstanding checks and warrants	11,009,147.08	
Disbursing officers' balances	68,561,127.36	
Post office department account	3,573,193.11	
Miscellaneous items	2,761,975.58	
		109,305,560.53
Reserve fund	$150,000,000.00	
Available cash balance	166,882,253.18	
		316,882,253.18
Total		$1,770,503,682.71
Cash balance in the Treasury November 1, 1908, exclusive of reserve and trust funds		$166,882,253.18

	Jan. 1.		Jan. 1.		July 1.
1792	$77,217,924.66	1833	$7,001,698.83	1873	$2,234,482,993.20
1793	80,352,634.04	1834	4,760,082.08	1874	2,251,690,468.43
1794	78,427,404.77	1835	37,513.05	1875	2,232,284,531.95
1795	80,747,587.39	1836	336,957.83	1876	2,180,395,067.15
1796	83,762,172.07	1837	3,308,124.07	1877	2,205,301,392.10
1797	82,064,479.33	1838	10,434,221.14	1878	2,256,205,892.53
1798	79,228,529.12	1839	3,573,343.82	1879	2,340,567,232.04
1799	78,408,669.77	1840	5,250,875.54	1880	2,128,791,054.63
1800	82,976,294.35	1841	13,594,480.73	1881	2,077,389,253.58
1801	83,038,050.80	1842	26,601,226.28	1882	1,926,688,678.03
1802	86,712,632.25		July 1.	1883	1,892,547,412.07
1803	77,054,686.30	1843	32,742,922.00	1884	1,838,904,607.57
1804	86,427,120.88	1844	23,461,652.50	1885	1,872,340,557.14
1805	82,312,150.50	1845	15,925,303.01	1886	1,783,438,697.78
1806	75,723,270.66	1846	15,550,202.97		Dec. 1.
1807	69,218,398.64	1847	38,826,534.77	1887	1,664,461,536.38
1808	65,196,317.97	1848	47,044,862.23	1888	1,680,917,706.23
1809	57,023,192.09	1849	63,061,858.69	1889	1,617,372,419.53
1810	53,173,217.52	1850	63,452,773.55	1890	1,549,206,126.48
1811	48,005,587.76	1851	68,304,796.02	1891	1,546,961,695.61
1812	45,209,737.90	1852	66,199,341.71	1892	1,563,612,455.63
1813	55,962,827.57	1853	59,803,117.70		Nov. 1.
1814	81,487,846.24	1854	42,242,222.42	1893	1,549,556,353.63
1815	99,833,660.15	1855	35,586,858.56	1894	1,626,154,037.68
1816	127,334,933.74	1856	31,972,537.90	1895	1,717,481,779.90
1817	123,491,965.16	1857	28,699,831.85	1896	1,785,412,640.00
1818	103,466,633.83	1858	44,911,881.03	1897	1,808,777,643.40
1819	95,529,648.28	1859	58,496,837.88	1898	1,964,837,130.90
1820	91,015,566.15	1860	64,842,287.88	1899	2,092,686,024.42
1821	89,987,427.66	1861	90,580,873.72	1900	2,132,373,031.17
1822	93,546,676.98	1862	524,176,412.13	1901	2,151,585,743.89
1823	90,875,877.28	1863	1,119,772,138.63	1902	2,175,246,168.89
1824	90,269,777.77	1864	1,815,784,370.57	1903	2,218,883,772.89
1825	83,788,432.71	1865	2,680,647,869.74	1904	2,304,697,418.64
1826	81,054,059.99	1866	2,773,236,173.69	1905	2,293,846,382.34
1827	73,987,357.20	1867	2,678,126,103.87		Dec. 1.
1828	67,475,043.87	1868	2,611,687,851.19	1906	2,429,370,043.54
1829	58,421,413.67	1869	2,588,452,213.94		Nov. 1.
1830	48,565,406.50	1870	2,480,672,427.81	1907	2,492,231,518.54
1831	39,123,191.68	1871	2,353,211,332.32	1908	2,637,973,747.04
1832	24,322,235.18	1872	2,253,251,328.78		

PRINCIPAL OF THE PUBLIC DEBT.

The preceding table shows the outstanding principal of the public debt of the United States on January 1 of each year from 1792 to 1842 inclusive; on July 1 of each year from 1843 to 1886, inclusive; on December 1 of each year from 1887 to 1892, inclusive; on November 1, from 1893 to 1907, inclusive, except December 1, 1906.

BONDED DEBTS OF STATES.

The bonded debts and assessed valuations of states and territories according to the latest returns are as follows:—

States and Territories.	Total assessed valuation.	Per ct. actual value.	Tax rate per $1,000.	Bonded debt.
Alabama	$450,529,553	60	$6.50	$16,194,000
Arizona	80,637,541	40	7.50	1,012,000
Arkansas	302,181,563	50	6.75	1,250,500
California	1,994,511,229	100	4.00	(*g*) 1,726,500
Colorado (*d*)	465,000,000	....	4.50	2,300,000
Connecticut	(*k*) 791,769,979	Full	....	876.100
Delaware	(*c*) 76,000,000	....	....	756,785
Dist. Columbia	278,814,423	67	15.00	11,103,750
Florida	(*a*) 142,018,871	....	7.50	601,567
Georgia	(*f*) 699,536,879	65	5.00	7,136,000
Idaho	115,680,056	....	4.34	1,364.000
Illinois	1,126,663,157	Full	5.00	None.
Indiana	1,767,815,487	60	3.36	1,389,615
Iowa	599,385,589	25	4.00	None.
Kansas	2,453,691,859	90-100	.90	623,000
Kentucky (*b*)	644,489,000	....	5.00	26,000
Louisiana (*a*)	459,271,270	....	5.00	11,108,000
Maine (*b*)	366,514,014	Full	2.50	(*h*) 1,095.000
Maryland	765,109,228	....	1.60	(*i*) 5,978,926
Mass. (*a*)	4,503,426,621	....	....	105,796,662
Michigan (*a*)	1,654,371,892	80	2.41	None.
Minnesota	1,037,017,413	50	....	550,000
Mississippi (*d*)	222,847,525	....	6.00	2,887,026
Missouri	(*f*) 1,621,771,213	33⅓	1.70	None.
Montana	(*f*) 251,850,860	100	2.50	None.
Nebraska	391,735,464	20	6.25	None.
Nevada (*a*)	44,464,997	....	....	613,000
N. Hampshire	244,972,264	100	....	706,700
New Jersey (*d*)	918,418,741	....	....	.....
New Mexico (*a*)	43,242,746	20	14.00	965,123
New York	9,173,566,245	....	8.64	26,230,660
N. Carolina (*a*)	(*f*) 575,370,313	75	4.30	6,880,950
North Dakota	(*f*) 227,000,000	20	5.20	692,000
Ohio (*e*)	2,113,806,168	60	1.35	None.
Oklahoma (*a*)	96,625,604	25	6.50	None.
Oregon (*b*)	188,058,281	33	5.45	None.
Pennsylvania	5,769,777,327	....	....	(*j*) 72,334
Rhode Island	488,978,107	75	1.80	3,650,000
S. Carolina (*a*)	(*f*) 267,438,067	40	4.50	6,685,774
South Dakota	283,696,268	....	3.00	(*e*) 250,000
Tennessee (*a*)	(*f*) 474,866,640	100	3.50	14,236,767
Texas (*b*)	1,139,022,730	....	3.80	3,989,400
Utah (*a*)	146,204,050	60	5.00	900,000
Vermont	183,188,070	Full	1.30	(*b*) 135,500
Virginia (*d*)	423,842,680	....	4.00	24,363,795
Washington	573,070,528	60	6.70	1,000,000
West Virginia	850,000,000	80	.85	None.
Wisconsin (*b*)	1,384,580,775	75	11.27	2,251,000
Wyoming	67,580,051	25	6.20	182,000

The returns for the fiscal year 1908, except when otherwise indicated. (*a*) Fiscal year 1907; (*b*) fiscal year 1905; (*c*) fiscal year 1903; (*d*) fiscal year 1902; (*e*) floating indebtedness; (*f*) including railroads; (*g*) floating indebtedness, $230,660; (*h*) October 10, 1906; (*i*) net debt, $562,901; (*j*) net debt; (*k*) exclusive of railroad, telephone and telegraph property.

IV. Financial Administration.—Financial administration is concerned with the preparation of the budget, the control of the public funds and expenditures, and the collection of the revenues. The importance of correct methods of fiscal administration has been more generally recognized in Europe than in the United States or Great Britain, where the subject has been largely left to publicists and jurists.

The most conspicuous feature of modern fiscal systems is the establishment of the budget, and the right of the people's representatives to vote taxes and appropriations. In America comparatively little advance has been made beyond the

first fiscal methods that were established. But in European countries the budget has reached a higher development, due largely to conflicting interests of the legislature.

In England the fiscal year commences April 1, and ends March 31. Each administrative department prepares its "Estimates" for the coming year in the fullest detail, and upon these minute statements the Chancellor of the Exchequer bases his estimate for presentation to Parliament; he at the same time presents a brief showing how he expects to raise revenues to meet the proposed expenditures, and what new taxes, etc., if any, are needed. This statement forms the budget. Neither directly nor indirectly can Parliament increase the appropriations requested by the Ministry, nor can it add new appropriations.

In the United States the reports of the administrative officers, the president, and the secretary of the treasury, are made to Congress, but no formal budget is presented as in England. The finances are regularly dealt with by two separate committees, viz., the "Committee on Ways and Means" and the "Committee on Appropriations," dealing respectively with taxation and appropriations. There is no constitutional control of these committees, nor is there anything theoretically to prevent any member of the House from presenting an entirely new set of bills on his own account without reference to the committees.

Since the establishment of a protective policy the United States government has been in possession of large funds which are independent of the expenditures. The revenue laws are necessarily sundered from appropriations. The system has its advantages, but it entirely prevents any systematic supervision of the finances as a whole, and permits of no gauging of the relative proportions of the various appropriations. Unlike England, where credits expire at the end of the fiscal year, in the United States they usually remain in force until the whole sum is used up or till the object is attained. The chief advantage of the American system is that it permits greater scrutiny by the legislature of the specific items of each appropriation.

In England after the budget has been voted the funds are deposited with the Bank of England, subject only to the order of the comptroller and auditor general. No payment can be made without (1) an act of Parliament, (2) a requisition by the treasury issued to the comptroller general, (3) a credit-grant for the amount authorized by the act, (4) a treasury order, for the money to be transferred to the paymaster general of the service. When the expenditures have been made, the various accounts, with their vouchers, are examined by the Parliament Committee of Public Accounts.

In the United States the executive officers hold direct control of the funds, subject to the orders of Congress. The original system of control, audit, and record was very complicated and was changed by the Act of Congress of July 31, 1894. Six auditors are now appointed: (1) For the Treasury Department, (2) for the War, (3) for the Interior, (4) for the Navy, (5) for the State, etc., (6) for the Post Office. This division of accounts is a distinct gain both in speed and simplicity.

CUSTOMS DUTIES.

These duties are levied upon commodities when they cross the national frontier, or enter within a customs area. Duties on goods entering a city are called *octroi*, and are more of the nature of excises. Originally customs duties were levied both on imports and exports. With the exception of Turkey, European nations have almost altogether abolished duties on exports; Russia, Italy, Austria, and Switzerland still retain a few export duties on indigenous products. The German customs duties yield nearly 27 per cent. of the gross receipts, the English 25 per cent., the French and the Italian 15 per cent. The purposes of customs duties are both fiscal and political. The difference between a protective tariff and a revenue tariff may be described as follows: A *protective tariff* is primarily designed to prevent importation, entirely or partially, and to raise the prices of imported commodities so as to protect and encourage the native product. A *revenue tariff* is fixed so as not intentionally to leave any trace upon native industries, and is based on principles like those of the excise, the duties being laid upon commodities of great consumption and tax-bearing capacity. Strictly speaking, however, there is no such thing as a tariff for revenue only, for the effect of all customs duties on trade is very far-reaching. With the exception of England, Holland, Belgium, Switzerland, Norway, and Denmark, the protective principle is generally applied to every customs tariff.

In fixing the protective tariff there is always the danger that if the duties are so high as to afford absolute protection, loss of revenue will result from the foreign commodities which perforce are excluded. As soon as it is found that the importation of any article begins to fall off is is a sure indication that the tariff has exceeded the highest revenue-producing limit. The revenues will then be diminished, while the subsidy to the producer will be increased. In effect this subsidy is paid by the consumers within the country in the form of higher prices; while the duties themselves are generally paid by the consumer and not by the foreign shipper. The foreigner pays the entire tax only in cases where the home market is well supplied, and where the country from which the commodity is exported is overstocked. In certain other cases conditions are such that the foreigner pays the tax temporarily or pays it only in part.

The customs tariff was the only source of tax revenue which the new Federal government had after the War of Independence. The first tariff act was passed July 4, 1789. Until 1812 the tariffs were virtually revenue and not protective tariffs. New industries then began clamoring for protection and from 1816 onward a protection sentiment was sedulously fostered. The only serious reaction against this policy was in the so-called free-trade period from 1846 to 1860. The duties on classified articles ranged from 5 per cent. to 100 per cent. *ad valorem*, but many of these duties were reduced in 1857. On March 2, 1861, Congress passed the Morrill tariff, which increased protective duties, particularly on woolen goods and iron. On the outbreak of the war a series of new tariffs was

made, imposing duties upon commodities hitherto free, and raising the protective duties as compensation. The limit was reached by the act of 1864, which enumerated nearly 1,500 articles, and fixed an average rate of almost 50 per cent. The character of this tariff was not appreciably changed until 1883. The only noteworthy changes down to 1894 were attempted reforms of 1870, 1873, and 1883, and the McKinley Tariff of 1890, which removed the duties on purely revenue articles but increased the protective features. The Wilson bill introduced by the Democratic party became a law August 27, 1894, without the signature of the president. It made a reduction in many duties removed the duty on wool, and provided for an income tax. The latter feature was declared unconstitutional by the Supreme Court, business depression caused a falling off of imports, and the measure was pronounced a failure. The Dingley Act of 1897 followed the leading provisions of the McKinley bill. The duties, especially on wool, woolen goods, pottery, and cutlery, were made higher than in the Act of 1890. Lumber was again made dutiable, and hides were taxed for the first time. The Payne Act of 1909 removed the duties on hides and reduced those on lumber and other articles. Many rates remained unchanged; others were increased,—the average being a slight reduction.

UNITED STATES CUSTOMS DUTIES.

A TABLE OF LEADING ARTICLES IMPORTED, GIVING RATE AT ENTRY BY THE TARIFF ACT OF 1909.

N. e. s. indicates "when not elsewhere specified." P. c. ad val. indicates "per cent. ad valorem."

ARTICLES.	TARIFF RATE.
Alcohol, absolute	$2.60 per gal.
Alcohol, amylic, or fusel oil	¼c. per lb.
Barley, bushel of 48 lbs	30c. per bu.
Beads (strung)	60 p. c.
Beads (not strung)	35 p. c. ad val.
Beans	45c. per bu.
Beef, mutton, pork, and venison	1½c. per lb.
Beer, ale, not in bottles	23c. per gal.
Beer, porter, and ale, in bottles	45c. per gal.
Bindings, cotton	45 p. c. ad val.
Bindings, flax	60 p. c. ad val.
Bindings, wool	50c. per lb. and 60 p. c. ad val.
Blankets	22c. per lb. and 30 p. c. ad val.
Blankets, value 40c. to 50c.,	33c. per lb. and 35 p. c. ad val.
Blankets, wool, value over 50c. per lb.,	33c. per lb. and 40 p. c. ad val.
Bonnets, silk	60 p. c. ad val.
Books, charts, maps, sheet music	25 p. c. ad val.
Bronze, manufactures of	45 p. c. ad val.
Brushes	40 p. c. ad val.
Butter, and substitutes for	6c. per lb.
Buttons, sleeve and collar, gilt	50 p. c. ad val.
Canvas for sails	45 p. c. ad val.
Caps, fur	50 p. c. ad val.
Carpets, treble ingrain,	22c. per sq. yd. and 40 p. c. ad val.
Carpets, two-ply	18c. per sq. yd. and 40 p. c. ad val.
Carpets, tapestry Brussels,	28c. per sq. yd. and 40 p. c. ad val.
Carpets, velvet and tapestry velvet,	40c. per sq. yd. and 40 p. c. ad val.
Carpets, Wilton, Axminster, Saxony, moquette,	60c. per sq. yd. and 40 p. c. ad val.
Cattle (over one year old)	27½ p. c. ad val.
Cheese, all kinds	6c. per lb.
Cigars and cigarettes	$4.50 per lb. and 25 p. c. ad val.
Clocks, n. e. s.	40 p. c. ad val.
Clothing, ready-made, cotton, n. e. s.	50 p. c. ad val.
Clothing, linen	70 p. c. ad val.
Clothing, silk	60 p. c. ad val.
Clothing, wool	44c. per lb. and 60 p. c. ad val.
Coal, bituminous	45c. per ton
Confectionery, all sugar,	50 p. c. ad val. (if more than 15c. per lb.)
Copper, manufactures of	45 p. c. ad val.
Cotton curtains	50 p. c. ad val.
Cotton gloves	50 p. c. ad val.
Cotton handkerchiefs, hemmed	45 p. c. ad val.
Cotton handkerchiefs, hemstitched	55 p. c. ad val.
Cotton hosiery	75c. to $2 per doz. pairs and 15 p. c. to 55 p. c. ad val.
Cotton plushes, unbleached,	9c. per sq. yd. and 25 p. c. ad val.
Cotton shirts and drawers	60c. to $2.25 per doz. pairs and 15 p. c. to 50 p. c. ad val.
Cotton webbing	45 p. c. ad val.
Cutlery, more than $3 per doz.,	20c. per piece and 40 p. c. ad val.
Cutlery, razors, over $3 per doz.,	$1.75 per doz. and 20 p. c. ad val.
Cutlery, table knives	14c. each and 15 p. c. ad val.
Diamonds (uncut, free), cut and set	60 p. c. ad val.
Diamonds, cut, but not set	10 p. c. ad val.

ARTICLES.	TARIFF RATE.
Drugs (crude, free), not crude,	¼c. per lb. and 10 p. c. ad val.
Dyewoods, extracts of	⅛c. per lb.
Earthenware, common	25 p. c. ad val.
Earthenware, porcelain, plain	55 p. c. ad val.
Earthenware, porcelain, etc., decorated	60 p. c. ad val.
Eggs	5c. per doz.
Extracts, meat	35c. per lb.
Firearms	$1.50 to $6 and 25 to 35 p. c. ad val.
Fish, smoked, dried	¾c. per lb.
Flannels	22c. per lb. and 30 p. c. ad val.
Flannels, value 40c. to 50c.,	33c. per lb. and 35 p. c. ad val.
Flax, manufactures of, n. e. s.	45 p. c. ad val.
Flowers, artificial	60 p. c. ad val.
Fruits, preserved in their own juice,	1c. per lb. and 35 p. c. ad val.
Fruits, apples, pears, cherries, plums	25c. per bu.
Fruits, oranges, limes, grape fruit	1c. per lb.
Fruits, lemons	1½c. per lb.
Fur, manufactures of	35 p. c. ad val.
Furniture, wood	35 p. c. ad val.
Glassware, plain and cut	60 p. c. ad val.
Glass, polished plate, not over 16x24	10c. per sq. ft.
Glass, silvered, not over 16x24	11c. per sq. ft.
Glass bottles, over 1 pint	1c. per lb.
Gloves, "glace," women's or children's,	$1.25 to $4.75 per doz. prs.
Gloves, "glace," men's	$3 to $4 per doz. prs.
Gloves, other surfaces	$2.50 to $4.75 per doz. prs.
Glucose	1½c. per lb.
Glue, value not over 10c per lb	2½c. per lb.
Gold, manufactures of, not jewelry	45 p. c. ad val.
Hair, curled for mattresses	10 p. c. ad val.
Hair, manufactures, n. e. s.	35 p. c. ad val.
Hair, human, unmanufactured	20 p. c. ad val.
Hams and bacon	4c. per lb.
Hay	$4 per ton
Hemp cordage	2c. per lb.
Honey	20c. per gal.
Hoops, iron or steel, baling	3-19c. per lb.
Hops	16c. per lb.
Horn, manufactures of	35 p. c. ad val.
Horses, mules	$30 per head
India rubber, manufactures of	30 p. c. ad val.
India rubber, vulcanized	35 p. c. ad val.
Instruments, metal	45 p. c. ad val.
Iron, manufactures of, n. e. s.	45 p. c. ad val.
Iron screws, ½ inch or less in length	10c. per lb.
Iron, tinned plates	1⅛c. per lb.
Ivory, manufactures of, n. e. s.	35 p. c. ad val.
Jewelry	60 p. c. ad val.
Knit goods, woolen apparel,	44c. per lb. and 55 p. c. and 60 p. c. ad val.
Knit goods, silk	60 p. c. ad val.
Lard	1½c. per lb.
Lead, pigs, bars	2½c. per lb.
Lead, type metal	2½c. per lb.
Leather manufactures, n. e. s.	40 p. c. ad val.
Linen manufactures, n. e. s.	45 p. c. ad val.
Linen, wearing apparel	70 p. c. ad val.
Lumber, sawed	$1.25 per M. ft.
Macaroni	1½c. per lb.
Malt, barley	45c. per bu.

United States Customs Duties.—*Continued.*

Articles.	Tariff Rate.
Matches, friction, boxed	6c. per gross.
Matting, cocoa and rattan	6c. per sq. yd.
Meerschaum pipes	60 p. c. ad val.
Milk, fresh	2c. per gal.
Milk, condensed	2c. per lb.
Molasses less than 40°	20 p. c. ad val.
Molasses 40° to 56°	3c. per gal.
Molasses above 56°	6c. per gal.
Muffs, fur	50 p. c. ad val.
Musical instruments	45 p. c. ad val.
Nails, cut	4-10c. per lb.
Nails, horseshoe	1½ c. per lb.
Oil, olive, n. e. s.	40c. per gal.
Oil, olive, n. e. s.	40c. per gal.
Oil, whale and seal, foreign, n. e. s.	8c. per gal.
Oilcloth, value over 25c., 8 to 20c. per sq. yd. and 15 p. c. to 20 p. c. ad val.	
Onions	40c. per bu.
Opium, liquid preparations	40 p. c. ad val.
Opium, crude and unadulterated	$1.50 per lb.
Paper manufactures, n. e. s.	35 p. c. ad val.
Pepper, cayenne, unground	2½ c. per lb.
Perfumery, alcoholic	60c. per lb. and 50 p. c. ad val.
Photograph albums	35 p. c. ad val.
Photograph slides	25 p. c. ad val.
Pickles	40 p. c. ad val.
Pineapples	$8 per M.
Pins, metallic	35 p. c. ad val.
Pipes of clay, common, 40c. per gross	15c. per gross
Poultry, dressed	5c. per lb.
Potatoes	25c. per bu.
Pulp wood, for paper-makers	1-12c. per lb.
Quicksilver	7c. per lb.
Railroad ties, cedar	10 p. c. ad val.
Rice	2c. per lb.
Rugs, oriental	10c. per sq. ft. and 40 p. c. ad val.
Salmon, dried or smoked	¾ c. per lb.
Salmon, prepared or preserved	30 p. c. ad val.
Salt, 11c. per 100 lbs., packages; 7c. per 100 lbs., bulk	
Sauces, n. e. s.	40 p. c. ad val.
Sausages, other than bologna	25 p. c. ad val.
Sealskin sacques	50 p. c. ad val.
Silk, spun in skeins	35 p. c. ad val.
Silk laces, wearing apparel	60 p. c. ad val.
Skins, tanned and dressed	15 p. c. ad val.
Slates, manufactures of, n. e. s.	20 p. c. ad val.
Smokers' articles, ex. clay pipes	60 p. c. ad val.
Soap, castile	1¼ c. per lb.
Soap, toilet, perfumed	50 p. c. ad val.
Soda, bicarbonate	⅝ c. per lb.
Spirits, except bay rum	$2.60 prf. gal.
Stockings, hose, half hose, cotton	35 p. c. ad val.
Stockings, hose, half hose, woolen, 44c. per lb. and 60 p. c. ad val.	
Straw manufactures, n. e. s.	35 p. c. ad val.
Sugars, not above 16 Dutch standard	.95-100c. per lb.
Sugars, above 16 Dutch standard	1.9c. per lb.
Swine	$1.50 per head
Tin plates	1.2c. per lb.
Tobacco, cigar wrappers, not stemmed	$1.85 per lb.
Tobacco, if stemmed	$2.50 per lb.
Tobacco, all other leaf, stemmed	50c. per lb.
Tobacco, unmanufactured, not stemmed	35c. per lb.
Umbrellas, silk or alpaca	50 p. c. ad val.
Vegetables, natural, n. e. s.	25 p. c. ad val.
Vegetables, prepared or preserved	40 p. c. ad val.
Velvets, silk, 75 p. c. or more silk, $1.50 per lb. and 45 p. c. ad val.	
Watches and parts of	40 p. c. ad val.
Wheat, bushel of 60 lbs.	25 p. c. ad val.
Willow for basket-makers	25 p. c. ad val.
Willow manufactures, n. e. s.	45 p. c. ad val.
Wines, champ., in ½ pint bottles or less	$2.40 per doz.
Wines, champ., in bottles, ½ pt. to 1 pt.	$4.80 per doz.
Wines, champ., in bottles, 1 pt. to 1 qt.	$9.60 per doz.
Wines, still, in casks containing more than 14 p. c. absolute alcohol	60c. per gal.
Wood pulp	1/10 c. per lb.
Woods, cabinet sawed	$1.25 per M. ft.
Wool, 1st class	11c. per lb.
Wool, 2d class	12c. per lb.
Wool, 3d class, n. e. s., above 13c. per lb.	7c. per lb.
Wool or worsted yarns, value not over 30c. per lb., 27½ c. per lb. and 45 p. c. ad val.	
Wool or worsted yarns,, value 30c. per lb., 38½ c. per lb. and 40 p. c. ad val.	
Woolen or worsted clothing, 44c. per lb. and 60 p. c. ad val.	
Woolen manufactures, n. e. s., 44c. per lb. and 60 p. c. ad val.	

HAWAII AND PORTO RICO.—Articles of merchandise entering the United States from Hawaii and Porto Rico and entering those possessions from the United States are exempt from duty.

PHILIPPINE ISLANDS.—The act of Congress, approved August 5, 1909, provides (Sec. 5): "That there shall be levied, collected, and paid upon all articles coming into the United States from the Philippine Islands the rates of duty which are required to be levied, collected, and paid upon like articles imported from foreign countries, except all articles the growth or product of or manufactured in the Philippine Islands from materials the growth or product of the Philippine Islands or of the United States, or of both, or which do not contain foreign materials to the value of more than 20 per centum of their total value, upon which no drawback of customs duties has been allowed therein, coming into the United States from the Philippine Islands shall hereafter be admitted free of duty, except rice, and except, in any fiscal year, sugar in excess of 300,000 gross tons, wrapper tobacco and filler tobacco when mixed or packed with more than 15 per centum of wrapper tobacco in excess of 300,000 pounds, filler tobacco in excess of 1,000,000 pounds, and cigars in excess of 150,000,000 cigars; and that there shall be levied, collected, and paid, in the United States, upon articles, goods, wares, or merchandise coming into the United States, from the Philippine Islands, a tax equal to the internal-revenue tax imposed in the United States upon the like articles, goods, wares, or merchandise of domestic manufacture."

UNITED STATES TREASURY.

The United States Treasury department was founded by act of Congress, September, 1789. The Secretary at its head has control over the administration of the finances of the currency. Formerly the post office and land office were under the treasury department; but now in addition to finance and currency the department supervises the national banks, public health, and marine hospital service, life-saving service, secret service, etc. Originally the secretary used to report direct to Congress and not to the president, but President Jackson in 1833 established presidential control over the secretary of the treasury. The secretary is assisted by three assistant secretaries. The business of the department is distributed among the following offices and bureaus: the comptroller of the treasury, six auditors, the treasurer, the register, the comptroller of the currency, the commissioner of internal revenue, the bureau of engraving and printing, the marine hospital service, and the mint. Since 1894 the comptroller of the treasury has had the aid of an assistant comptroller. The director of the mint supervises the mints and assay offices all over the country. The bureau of engraving, founded in 1874, has charge of the preparation of designs, bank notes, stamps, bonds, and other national securities.

The national treasury has considerable influence not only on finance but on all branches of industry and commerce. The banking transactions of a country are largely affected by those of the treasury. National treasuries vary in different countries. The British Exchequer is limited in its fiscal functions; those of France and Germany have a national bank associated

with them; while in the United States the treasury combines within itself both fiscal and banking functions. Considered as a bank the United States Treasury, with its branches all over the Union, is the largest banking institution in the world.

The available funds in the United States Treasury, exclusive of the $100,000,000 gold reserve, were as follows:—

Year.		Agency account.	Net balance in Treasury.	Total.
March 1,	1889	$64,502,445.02	$165,846,471.10*	$230,348,916.12
March 1,	1893	38,365,832.90	24,084,742.28	62,450,575.18
March 1,	1897	44,523,338.35	112,690,293.73	157,213,632.08
March 1,	1901	80,351,890.37	148,844,437.53	229,196,327.90
March 1,	1905	88,715,872.49	140,649,999.94	229,365,872.43
June 30,	1908	118,678,993.54	239,541,671.48	358,220,665.02

*Including the fund for the redemption of notes of national banks "failed," "in liquidation," and "reducing circulation."

Sub-Treasury.—The first was established in 1846, in Wall street, New York, where it is still located. There are now nine, established in Boston, New York, Philadelphia, Baltimore, New Orleans, St. Louis, Cincinnati, Chicago, and San Francisco.

The larger proportion of the Government's money transactions with the people are conducted through the New York sub-treasury, which is in direct charge of the Assistant Treasurer of the United States. Among its many duties are the redemption of mutilated paper money, refunding and redeeming Government bonds, payment of checks issued in settlement of government bond interest, pension expenditures.

Money from the custom-houses, post offices, and other departments of the Government are received by the sub-treasuries. By telegraphic transfers of money from one part of the country to another they are of great service. Gold deposited at one sub-treasury may be credited by telegraph to a person at another sub-treasury point. For sudden needs, currency may be so transferred. For such accommodation the Government makes a charge.

Australian gold is often used by London in payment of its own debts in New York, since when received at San Francisco it may, through the sub-treasuries, be immediately credited to persons in New York.

SUMMARY OF THE LEADING FINANCIAL EVENTS.

1860 B. C. Money is mentioned as a medium of commerce in Genesis xxiii., when Abraham purchased a field as a sepulcher for Sarah.
1491 B. C. Jews were permitted to receive usury from strangers, but were forbidden to receive it from their brethren.
c. 700 B. C. Egibe's bank at Babylon mentioned.
690 B. C. The coinage of money is ascribed to Lydians, possibly about this date.
594 B. C. Taxes levied by Solon, the Athenian legislator.
480 B. C. Darius levied a land tax by assessment.
445 B. C. The law of 1491 B. C. enforced by Nehemiah.
350 B. C. Livy first mentions the *argentarii* or Roman dealer in money.
269 B. C. The Romans gave their silver the name of "moneta."
808 A. D. Bank in Italy said to have been established by the Lombardy Jews.
928. Athelstan enacts regulations for the government of the mint.
994. England. One pound equals three of modern money.
Three principal taxes in Anglo-Saxon times were (1) the "ship-geld," a tax imposed on each shire, for naval purposes; (2) the "danegeld" (see 1068); (3) the "fumage," or "hearth tax."
1067. England. Taxes in specie are introduced by William I.; he raises them arbitrarily.
1068. England. The danegeld tax is revived; land is taxed at one shilling; this tax disappeared after 1163.
1108-1137. France. Under Louis VI. the communes are freed from court interference on the payment of a tax.
1125. England. Henry I. takes severe measures against false coining.
1133-1322. Tax called "scutage," or "land tax," rose with Henry III., of England; fell into disuse, 1322.
1157. Founding of the Bank of Venice; this bank was destroyed by the French invasion in 1797.
1173. The public funding system originated in Venice.
1188. England. Taxes on movables began with the "Saladin title"; this tax was one tenth of rent and movables, paid by all except crusaders.
1189-1334. Tax on rents and movables continued in England.
1194. Insurance first used in Italy.
1194. Richard I. of England levied a tax on all plowed land, known as the "carucage," i. e., the amount of land that could be covered by one plow (caruca) in a season.
1224. England. Tax of 1194 merged in the tax on movables (see 1188).
1257. The English gold coin first appears.
1275. "Ancient customs" toll slightly raised; granted Edward I. of England by parliament.
1312-1327. England. Tallage was tax collected from tenants of the royal demesne, on occasions of unusual expense.
1334. England. Fifteenths and tenths tax.
1341. English parliament prohibits usury.
1345. Founding of the Bank of Geneva.
1345. Failure of the Florentine bankers for large sums, including 1,500,000 gold florins owed them by Edward III. of England.
1350. France. Philip VI. enforces the gabelle tax (salt tax).
1350-1354. France. John II. debases the coinage.
1377. The first poll-tax imposed in England.
1377. England. Tallage of groats, a tax of four pence, granted the king by parliament.
1382. France. The malleteers revolt against a bread tax.
1401. Founding of the Bank of Barcelona (the earliest existing bank).
1407. Founding of the Bank of Genoa.
1483. Charles VIII. of France made the "taille" (tallage) permanent; this tax was both real and personal.
1483. "Vingtiemes," or twentieths, a tax which was first used with the taille; the former disappeared with Charles VIII. of France.
1504. The true English shilling first coined by Henry VII.
1522. Loans for the public service were raised by Wolsey in England; and again in 1825.
1523. Insurance policies first used in Florence.
1545. England. The coin is debased; the rate of interest fixed at 10 per cent.
1548. France. Bordeaux revolts against the salt tax.
1556. England. Founding of the Royal Exchange, London; opened (1687).
1560. Insurance first used in England. First life insurance company, The Amicable; established 1706.
1560. A shilling is struck in Ireland worth nine pence; but it is to be current at twelve.
1574. In Holland money is made of pasteboard.
1587. The Banco di Rialto established in Venice. This marks the inauguration of modern banking.
1601. First law of insurance in Britain enacted.
1609. The Bank of Amsterdam founded. This was probably the first modern bank to undertake the custody of depositor's money on a larger scale.
1619. The Banco di Rialto was absorbed by the Banco del Giro. The latter loaned 5,000,000 ducats to the government of Venice.
1619. Founding of the Bank of Hamburg, the oldest bank in Germany. Modeled on the Bank of Amsterdam.
1621-1664. In New York taxation under the West India Company first took the form of indirect taxes on goods imported and exported.

1623. Word *interest* first used in an act of parliament of James I. for a lawful increase as compensation for the use of money lent. Rate fixed by this act was £8 for the use of £100 for a year in place of usury at £10 before taken.
1634. General Court of Massachusetts established following principle: towns shall have respect to levy every man according to his estate; poll taxes came into use later.
1635. Founding of the Bank of Rotterdam.
1640. The first louis d'or pieces are struck in France.
1651. Commonwealth lowers the yearly rate of interest in England to £6 on £100.
1656-1658. Cromwell, advised by Samuel Lamb, establishes a public bank.
1660. England. Interest rate of 1651 confirmed.
1661. The Bank of Sweden issued bank notes to avoid the transportation of copper coin. This is the first recorded instance of the use of bank notes in Europe.
1662. Milled shillings coined in England.
1663. England. Guineas first coined from gold brought from Guinea.
c. 1663. A goldsmith, Francis Child, opens a bank in England.
1667. First run on London bankers.
1667. Insurance against fire in London, began the year after the great London fire.
1672. England. Charles II. closes the Exchequer, and seizes £1,200,000; a commercial panic follows.
c. 1680. Hoare's Bank begun, England.
1688. Window tax established in England.
1689. England's public debt was £664,263.
1689. Ireland. James orders the issue of a coinage of brass money.
1690. Paper money first issued in the American colonies by Massachusetts.
1690. Rise of the English funding system.
1692. Establishment of a permanent land tax in England.
1694. Bank of England projected by William Paterson, a Scotch merchant, to meet the difficulty experienced by William III. in raising the supplies for the war against France; this date marks the establishment of the national debt of England.
1695. England. A recoinage act is passed; causes a commercial panic.
1695. Founding of the Bank of Scotland with an original capital of £100,000 sterling.
1695. France. A variable tax of the ancient monarchy was the "capitation," or system of poll taxes; was continued up to the Revolution.
1696. Office for insuring buildings opened in England.
1696. Run on Bank of England.
1696. First regular insurance office in London, the Hand-in-Hand.
1702. England's national debt £16,394,702.
1708. Bank monopoly established in England by forbidding a company exceeding six persons to act as bankers.
1710. Sun fire-office established in England.
1710. Louis XIV. of France revived the vingtieme, as a war tax; it remained up to the Revolution.
1710-1720. South Sea Bubble.
1713. Rate of interest in England reduced to £5 (yearly) on £100.
1716. The Sinking Fund Act is passed to redeem the debt to the Bank of England.
1716. Oldest county bank, Wood's at Gloucester, England, opened.
1716. The first bank of issue was established in France by John Law. This bank survived only until 1721.
1718. France's shares in Law's Mississippi scheme rise from £500 to £18,000.
1718. Law's Bank becomes the Royal Bank of France, with exclusive authority to coin money, and to receive all taxes and government imports.
1720. France. Failure of the Mississippi scheme; Royal Bank suspends payment; panic follows.
1720. First marine insurance companies are the Royal Exchange and the London Insurance.
1720. First fire-office in Scotland.
1721. Irish house of commons rejected a bill to establish a national bank.
1727. Establishment of the Royal Bank of Scotland at Edinburgh.
1728. First insurance in the colonies was at Boston by the Sun. (English Company.)
1733. England. Fifty tons of half pence and farthings are sent from the Tower to Ireland.
1736. Founding of the Bank of Copenhagen.
1738. Bank post bills issued in England.
1741. New Exchange at Bristol is erected.
1745. England. Run for gold upon rebellion in the North.
1746. British Linen Company incorporated as a bank by royal charter.
1749. France. Tax is levied of one twentieth of all incomes including those of the privileged orders.
1750. First fire-office in Germany.
1752. Insurance done in Philadelphia.
1765. Founding of the Bank of Berlin.
1775. Continental paper money issued during the American Revolution; first issued.
1775. Establishment of the London Clearing House.
1776. Founding of the Bank of Caisse d'Escompte, France.
1776. Louis XVI. suppressed the Corvees; taxes which were both real and personal; they were re-established but disappeared in 1793.
1780. Founding of Bank of North America in Philadelphia.
1781. France. Necker's "Compte Rendu," the first public exposition of the revenue and expenses of the state, is published.
1783. Establishment of Bank of Ireland at St. Mary's Abbey.
1784. Founding of the Bank of Massachusetts.
1784. Founding of the Bank of New York.
1786. Establishment of the double standard in the United States with a ratio of 1 to 15.25.
1786. Founding of the Bank of St. Petersburg.
1787. Founding of the Bank of the East Indies.
1787. First savings bank instituted at Berne, Switzerland.
1789. United States. The first customs tariff act, July 4.
1790. First United States refunding act approved. Under it the state debts and the foreign and domestic debt of the nation were consolidated and refunded in three classes of bonds.
1790. The taille is suppressed in France.
1791. The First Bank of the United States is chartered by Congress with an authorized capital of $10,000,000, one fifth of which is subscribed by the government.
1792. Adoption of the ratio of 1 to 15 and establishment of a mint with free and gratuitous coinage in the United States; the silver dollar equal to 371¼ grains fine, the eagle to 274½ grains fine.
1792. Duties laid on spirits distilled within the United States, followed by an act further regulating these duties and imposing a tax on stills.
1792. Savings bank opened in Basel, Switzerland.
1793. £10 notes issued in England.
1794. First fire insurance policy issued in the United States at Hartford, Ct.
1794. France. The "maximum," fixing the prices of commodities, is repealed.
1794. The execution of the laws of 1792, imposing a tax on spirits and stills, leads to the Whiskey Rebellion.
1797. Cash payments suspended by the Bank of England.
1797. £1 and £2 notes issued in England.
1797. Bank Restriction Act in England.
1798. The first direct tax in the United States is levied upon the 16 states.
1798-1806. Income tax introduced; set aside in 1816; restored in 1842 as a substitute for the indirect taxes.
1799. A "Benevolent Institution" begun by Rev. Joseph Smith of Wendover.
1801. Stock Exchange in Capel court, London, established.
1803. The Bank of France founded; establishment of the double standard on the basis of the ratio of 1 to 15½, notwithstanding the fact that the market ratio is then about 1 to 15.
1803. Bi-metallic currency recommended for Germany.
1803-1804. A "Charitable" bank instituted at Tottenham.
1807. Prussia. Establishment of general industrial freedom; new industries were taxed; this tax was called the "industry tax."
1807-1812-1822-1824. United States. Efforts to refund.
1809. Bramah's machine for numbering notes adopted in England.
1810. Introduction of the silver standard in Russia on the basis of the ruble of 17.99 grams of fine silver, followed in 1871 by the coinage of imperials, or gold pieces of 5 rubles, of 5.998 grams; therefore, with a ratio of 1 to 15. This ratio was changed by the increase of the imperial to 5 rubles, 15 kopecks, and later to 1 to 15.45.

1811. Prussia. A poll tax of one half thaler from every person over 12 years of age was instituted for the meal tax in all places except the larger towns.
1814. Bank opened at Edinburgh, Scotland.
1815. Great depreciation of paper money in England, reaching 26½ per cent. in May. Course of gold, £5 6s. and of silver, 71½d. per ounce standard. In December the loss was only 6 per cent.; gold at this period was quoted at £4 3s., and silver at 64d.
1816. Abolition of the double standard in England, which had had as its basis the ratio of 1 to 15.21, and adoption of the gold standard on the basis of the pound sterling at 7.322 grams fine in weight. Coinage of divisional money at the rate of 66d. per ounce. Extreme prices, £4 2s. for gold and 64d. for silver; in January £3 18s. 6d., and 59¼d. in December. Substitution for the ratio of 1 to 15.5 in Holland, established by a rather confused coinage of the ratio of 1 to 15⅞.
1816. First fire-office in France.
1819. Abolition of forced currency in England. Price of gold, £3 17s. 10½d., and of silver, 62d. per ounce in October, against £4 1s. 6d. and 67d. in February.
1820. Prussia. The tax of 1811 developed into a classified poll tax.
1825. Great commercial panic in England, following which a law was passed permitting country banks, outside of a radius of 65 miles from London, to organize joint stock companies, with the right to issue bank notes.
1827. First fire-office in Russia.
1832. Introduction of the monetary system of France in Belgium, with a decree providing for the coinage of pieces of 20 and 40 francs, which, however, were not stamped. Silver, 59¾d.
1834. Substitution of the ratio of 1 to 16 for that of 1 to 15 in the United States by reducing the weight of the eagle, ten-dollar gold piece, from 270 grains to 258 grains.
1834. Establishment of joint-stock banks in England.
1835. Introduction of the company rupee, a piece of silver weighing 165 grains fine, in India, in place of the sicca rupee. Creation of a trade coin—the mohur, or piece of 15 rupees—containing 165 grains of fine gold. Silver, 59$\frac{11}{16}$d.
1837. The fineness of the United States gold coins was raised from .899,225 to .900 and the silver coins from .892,4 to .900, giving a ratio of 1 to 15.988, and fixing the standard weight of the silver dollar at 412½ grains. Silver, 59$\frac{11}{16}$d.
1844. Peel's bank charter act in England.
1844. Introduction of the double standard in Turkey, with the ratio of 1 to 15.10. Silver 59½d.
1847. Discovery of the gold mines of California.
1847. Abolition of the double standard in Holland by the introduction of the silver standard on the basis of a one-florin piece 0.945 grams fine, the coinage of which had already been decreed in 1839. Silver, 59$\frac{11}{16}$d.
1847. Commercial panic in England.
1848. Replacing the ratio of 1 to 16 in Spain, which had been in force since 1786, by that of 1 to 15.77.
1848. Coinage in Belgium of pieces of 10 and 25 francs in gold, a shade too light. These pieces were demonetized and withdrawn from circulation in 1884. Silver, 59½d.
1850. Introduction of the French monetary system in Switzerland without any actual coinage of gold pieces. Silver, 60$\frac{1}{16}$d.
1851. Discovery of the gold mines of Australia.
1851. Prussia. Introduction of an income tax placed on all persons having an income of over 1,000 thalers.
1851. There were 574 savings banks in Great Britain.
1852. England. Gold bullion in the bank (resulting from the discovery of gold in Australia), £21,845,390.
1853. Lowering of the weight of silver pieces of less value than $1 to the extent of about 7 per cent. in the United States, and limitation of their legal tender power to $5. Silver, 61½d.
1853. Maximum of the production of gold reached in California when it amounted to $65,000,000.
1854. Modification of the ratio of 1 to 15.77 in Spain by raising it to 1 to 15.48, and by lowering the piaster from 23.49 grams to 23.36 grams fine.
1854. Introduction of the silver standard, as it existed in the mother country, in Java, in place of the ideal Javanese money, and coinage of colonial silver pieces.
1854. Introduction of the gold standard in Portugal. Before this period the country had the silver standard, with a rather large circulation of gold coins stamped, on the basis of 1 to 15½ in 1835 and 1 to 16½ in 1847. Silver, 61½d.
1854. Founding of the New York Clearing House.
1857. Conclusion of a monetary treaty between Austria and the German states, in accordance with which 1 pound of fine silver (one-half a kilogram) was stamped into 30 thalers, or 52½ florins of South Germany, or 45 Austrian florins, resulting in 1 thaler equaling 1¾ German florins or 1½ Austrian florins. Silver, 61¾d.
1861. Law decreeing the coinage of gold pieces of 10 and 20 francs exactly equal to French coins of the same denominations is passed in Belgium. Silver, 61¾d.
1861. Reform of the land tax in Prussia; building tax was separated from it, all old taxes of a similar sort were merged in the new one; in the cities this tax is assessed according to the rental of the buildings, and in the country according to the size of the lands connected with the houses.
1861. Post office savings bank established by the British parliament; interest at 2½ per cent.
1862. Adoption of the French monetary system by Italy. Silver, 61$\frac{7}{16}$d.
1863. First accident insurance company established in United States was the Traveler's, of Hartford, Ct.
1863. United States enacted a law authorizing the formation of a system of National banks. This act was recast on June 3, 1864.
1865. Formation of the Latin Union including France, Belgium, Switzerland, and Italy on the basis of a ratio of 1 to 15½. Silver, 61$\frac{7}{16}$d.
1865. First appearance of assessment system of life insurance in the United States.
1865. Founding of the Bank of Italy.
1866. Failure of the banking house of Overend, Durney & Co., London, for £19,000,000.
1867. An international monetary conference held at Paris; adoption of the gold standard.
1867. Failure of the Crédit Mobilier, and disappearance of the capital.
1868. Adoption of the French monetary system by Roumania, with the exclusion of the 5-franc silver piece, which was, however, stamped in 1881 and 1883. Silver, 60½d.
1868. Admission of Greece into the Latin Union. The definite and universal introduction of the French monetary system into the country was effected only in 1883.
1868. Adoption of the French monetary system, with the peseta or franc as the unit, by Spain. The coinage of gold alphonses d'or of 25 pesetas was made only in 1876.
1870. Alaskan gold mining successfully commenced.
1871. Establishment of the double standard in Japan with the ratio of 1 to 16.17 by the coinage of the gold yen of 1.667 grams and of the silver yen of 26.956 grams, both with a fineness of .900.
1871. Replacing of the silver standard in Germany by the gold standard. Coinage in 1873 of gold pieces of 5, 10, and 20 mark pieces, the latter weighing 7.168 grams fine. Silver, 60½d.
1873. Increase of the intrinsic value of the subsidiary coins of the United States. Replacing of the double standard by the gold standard. Reduction of the cost of coinage of gold to one fifth per cent., the total abolition of which charge was decreed in 1875. Creation of a trade dollar of 420 grains with a fineness of .900. Silver, 59¼d.
1873. Suspension of the coinage of 5 franc pieces in Belgium.
1873. Limitation of the coinage of 5 francs on individual account in France.
1873. Suspension of the coinage of silver in Holland.
1873. Formation of the Scandinavian Monetary Union. Replacing of the silver standard in Denmark, Sweden, and Norway by that of gold on the basis of the krone. Coinage of pieces of 10 and 20 kroner, the latter weighing 8.961 grams, with a fineness of .900.
1873. Check bank in aid of persons not having a banker, opened in Pall Mall, England.
1873. The unrestricted coinage of silver suspended in the countries termed the Latin Union.
1874. Introduction of the system of contingents for the coinage of 5-franc silver pieces in the Latin Union. Silver, 58$\frac{7}{16}$d.
1875. Suspension of the coinage of silver on individual account in Italy. Silver, 56⅞d.

1875. Introduction of the double standard in Holland on the basis of the ratio of 1 to 15.62 by the creation of a gold piece of 10 florins, weighing 6.048 grams fine, with the maintenance of the suspension of the coinage of silver.
1875. The Imperial Bank (Reichsbank) of Germany was established with the right to issue notes not covered by bullion in the vaults, to the amount of $62,500,000.
1876. Great fluctuations in the price of silver, which declined to 46¾ d., representing the ratio of 1 to 20.172 in July. Recovery, in December, to 58½ d. Average price, 52¾ d.
1877. Coinage of 5 franc silver pieces by Spain continued later, notwithstanding the decline of silver in the market. Silver, 54¾ d.
1877. Replacing of the double standard in Finland by that of gold on the basis of the mark or franc.
1878. The first international monetary congress meets.
1878. Act of United States Congress providing for the purchase, from time to time, of silver bullion, at the market price thereof, of not less than $2,000,000 worth per month as a minimum, nor more than $4,000,000 worth per month as a maximum, and its coinage as fast as purchased into silver dollars of 412½ grains. The coinage of silver on private account prohibited. Silver, 52 9/16 d.
1878. Meeting of the first international monetary conference in Paris. Prolongation of the Latin Union to January 1, 1886.
1879. Suspension of the sales of silver by Germany. Silver, 51¼ d.
1881. Second international monetary conference in Paris. Silver, 51⅛ d.
1882. International monetary conferences opened at Cologne.
1884. Stockbrokers' rents to the city of London abolished; took effect, 1886.
1885. Introduction of the double standard in Egypt. Silver, 48⅜ d.
1885. Great commercial depression in France; attributed to government prodigality.
1885. Prolongation of the Latin Union to January 1, 1891.
1885. International monetary conference opens at Paris.
1886. Great decline in the price of silver, which falls in August to 42d., representing a ratio of 1 to 22.5, and recovery in December to 46d. Modification of the coinage of gold and silver pieces in Russia. Silver, 45⅝ d.
1887. Retirement of the trade dollars by the government of the United States in February. Demonetization of the Spanish piasters, known as Ferdinand Carolus, whose reimbursement at the rate of 5 pesetas ended on March 11. New decline of silver in March to 44d., representing the ratio of 1 to 21.43. Silver, 44⅝ d.
1888. The bimetallic league hold a conference at Manchester.
1888. France. Panama Canal shareholders resolve to issue bonds for 340,000,000 francs to complete the canal.
1889. France. The Banque Parisienne assumes the entire cost of the issue of the bonds and construction of the new Panama Canal shares.
1889. The Comptoir d'Escompte, supported by Messrs. Rothschild and other bankers, is organized.
1889. March 8. France. A financial panic occurs; the Bank of France advances 100,000,000 francs to the Comptoir d'Escompte to meet the withdrawal of deposits; 75,000,000 francs are taken out of the bank.
1889. France. The Société des Métaux stops payment; copper drops heavily in Paris, London, and New York.
1889. France. The Tribunal of Commerce decides the Panama Canal Company to be a commercial company.
1889. France. A fall occurs in the shares of the Comptoir d'Escompte through speculations in copper.
1889. A monetary congress held at Paris.
1890. United States. Repeal of the act of February 28, 1878, commonly known as Bland-Allison law, and substitution of authority for purchase of 4,500,000 fine ounces of silver each month, to be paid for by issue of treasury notes payable in coin (Act of July 14, 1890). Demonetization of 25,000,000 lei in pieces of 5 lei in Roumania in consequence of the introduction of the gold standard by the law of October 27. Silver, 47 7/16 d.
1891. Introduction of the French monetary system in Tunis on the basis of the gold standard. Coinage of national gold coins and bullion. Silver, 45 7/16 d.
1891. Reform of the "Industry" and "Income" taxes in Prussia.
1891. The impending failure of Baring Brothers of London, and the consequent financial disaster, was averted by the timely help of the Bank of England.
1892. Replacing of the silver standard in Austria-Hungary by that of gold by the law of August 2. Coinage of pieces of 20 crowns, containing 6.098 grams fine. The crown equals one half florin. Meeting of the third international monetary conference at Brussels. Production of gold reaches its maximum, varying between 675,000,000 and 734,000,000 francs. Silver, 39 1/16 d.
1892. Annual meeting of the bimetallic league.
1893. Silver panic in the United States; the government was ultimately forced to sell bonds to the value of nearly $300,000,000 in order to meet the demands for gold.
1893. Prussia. Surrender of land, building, and industry taxes as royal taxes, rendering possible the reform of local taxation.
1893. Suspension of the coinage of silver in British India and of French trade dollars on individual account. Panic in the silver market in July in London, when the price fell to 30½ d., representing the ratio of 1 to 30.92. Repeal of the purchasing clause of the act of July 14, 1890, by the Congress of the United States.
1893. The Commons rejects bimetallism.
1893. France. The liquor tax voted to be separated from the budget.
1894. France. New Panama Canal shares are issued to the amounts of 30,000,000 francs.
1895. A bimetallic league formed in Paris.
1895. Adoption of the gold standard by Chile.
1895. Russia decides to coin 100,000,000 gold rubles in 1896.
1895. The Gold Standard Defense Association founded.
1895. Irish Banking Act.
1896. Costa Rica adopts the gold standard.
1896. Russia decides to resume specie payment.
1896. International monetary conference at Brussels, respecting bimetallism, proposed by the United States.
1896. England proposes a conference with foreign powers regarding bimetallism.
1897. Japan adopts the gold standard.
1897. Adoption of the gold standard by Russia and Japan.
1897. Peru suspends the coinage of silver and prohibits its importation.
1898. Ecuador limits the tender of silver coins to the amount of 10 sucres.
1899. India adopts the gold standard at the rate of 15 rupees to 1 pound sterling (British standard).
1900. United States adopts the gold standard.
1900. Ecuador adopts the gold standard.
1901. San Domingo adopts United States gold as standard.
1902. Siam adopts the gold standard.
1903. Colombia adopts gold standard.
1903. Philippines adopt the gold standard.
1904. Panama adopts gold standard.
1905. Mexico adopts the gold standard.
1907. Panic in New York (October 22); financial disturbances began in March; shortage of currency throughout the country results.
1908. Barcelona (Spain) depression; attributed to anarchist terrorism and extraordinary inducements offered by Americans for gold, April 26.
1908. German reform bill provided estimates annual revenue of $119,000,000, November 3.
1908. Chancellor of Great Britain estimates deficit of $100,000,000 by end of next fiscal year; various recommendations proposed for preventing same, November 20.
1908. Investors of France hold bonds of other countries to the amount of about $19,614,200,000, December 5.
1909. Tax increase in Buenos Aires causes strike of workmen, shopkeepers, bankers, etc., February 8.
1909. France. Threatened deficit of $45,600,000 for 1910 reported, March 12.
1909. Great Britain. Deficit of $60,000,000 reported impending, March 20.
1909. Michigan (United States). Shortage reported impending by August 1,—March 29.

FINANCES OF THE NATIONS.

United States.—The revenues of the United States in 1908 were $599,895,763, derived from many sources, but mainly from customs ($285,680,653), internal revenue ($250,714,008), and postal revenues ($191,478,663.41). The expenditures amounted to $659,552,125, mainly devoted to the civil establishment ($146,898,930), military and naval support ($229,001,211), Indian service ($14,550,758), pensions (153,887,995), interest on debt ($21,424,990), and the postal service ($208,351,886.15).

Great Britain.—The revenues of the United Kingdom for 1908-1909 amounted to $771,750,300; and for 1907-1908, $782,688,445, derived as follows:—

Customs	$162,450,000
Excise duties	178,600,000
Property and income tax	161,900,000
Estate duty	95,350,000
Post office	89,400,000
Telegraph service	$22,100,000
Stamp fees	39,850,000
Land tax	3,650,000
House duty	9,800,000
Crown lands	2,600,000
Suez Canal dividends	5,947,055
Fee and patent stamps	5,120,000
Miscellaneous	5,921,390

The total expenditure for the year 1908-1909 amounted to $770,545,000. The two great divisions of expenditure are the Consolidated Fund, consisting largely of the national debt, civil list, and salaries; and the Supply, comprising the army, navy, customs, post office, and civil service. The Consolidated Fund expenditure (1907-1908) amounted to $157,358,575, and the Supply expenditures (1907-1908) to $545,925,000 (including army $135,575,000, navy $155,705,000, civil service $150,900,000, post office $87,635,000).

Nation.	Revenue and Expenditures.			Debt.		
	Year.	Revenue.	Expenditure.	Year.	Total.	P.C.int.
Argentina	1906	101,915,035	98,379,638	1906-7	444,440,067	4½-5
Australia: Commonwealth of	(e)					
Australia, States	1904-5	165,748,231	164,971,284	1905	1,128,632,767	3-5
New Zealand	1905-6	37,229,202	34,660,868	1906	306,059,246	3-5
Austria-Hungary:	1906	72,008,078	72,008,078	1906	1,092,863,255	3-4
Austria	1906	369,865,472	369,265,569	1906	818,096,120	3-5½
Hungary	1906	261,981,691	262,995,860	1905	1,102,742,776	3-4½
Belgium	1906	107,860,738	109,366,961	1906	621,640,286	2½-3
Bolivia	1906	4,963,773	5,575,441	1906	2,977,924	(c)
Brazil	1906	118,388,586	113,427,944	1906	542,213,359	4-6
Bulgaria	1906	22,764,900	22,764,000	1906	73,452,805	5-6
Canada	1905-6	78,006,599	54,061,325	1907	253,997,742	2½-4
Central America: Costa Rica	1905-6	3,401,391	3,401,391	1906	20,962,242	2½-5
Guatemala	1905	2,673,200	3,562,935	1906	14,148,366	4-8
Honduras	1905	1,420,875	1,436,842	1905-6	104,335,589	5-10
Nicaragua	1905	1,632,800	1,342,600	1905	6,330,739	4-6
Salvador	1905	3,764,571	4,430,027	1906	4,602,361	4-5
Chile	1906	56,549,978	56,549,978	1905	95,720,654	4½-5
China	1905	25,841,699	25,841,699	1906	597,192,000	4-7
Colombia	1906	10,632,389	10,632,389	1905-6	19,541,567	3-10
Cuba	1905-6	29,609,746	18,997,663	1907	47,695,350	5-6
Denmark	1906-7	22,919,541	23,016,117	1906	64,231,713	3-4
Ecuador	1906	5,931,300	6,417,500	1906	14,737,291	4-7
Egypt	1906	67,382,304	64,886,665	1906	468,314,391	3-4½
France	1906	715,074,344	715,874,069	1906	5,655,134,825	3-3½
Algeria	1906	18,440,642	18,421,431	1905	6,323,838	3
Tunis	1906	14,948,227	14,929,509	1907	46,263,300	3-3½
French East Indies	1905-6	24,603,417	24,603,417	.....	.....	....
German Empire:	1906-7	570,563,137	572,600,260	1905	855,963,454	3-3½
States	1903-4	1,081,271,985 (a)	1,014,632,056 (b)	1905	2,957,356,846	3-4
Colonies	1906-7	3,138,700	3,424,300	.....	.....	....
Greece	1906	19,743,277	19,540,468	1906	167,052,145	2½-5
Haiti	1905-6	4,278,860	4,214,415	1906	24,810,673	2½-6
India (British)	1905-6	412,825,000	404,260,000	1905	1,127,923,363	2½-4½
Italy	1905-6	470,565,700	440,503,700	1905	2,767,911,940	3-5
Japan	1906-7	246,362,944	246,362,944	1906	932,445,798	4-6
Formosa	1906-7	12,833,510	12,833,510	.....	.....	....
Kongo Free State	1906	5,684,376	6,610,404	.....	.....	....
Korea	1906	3,727,388	3,967,759	.....	.....	....
Luxemburg	1906-7	3,286,690	3,375,257	1906	2,316,000	3½
Mexico	1905-6	51,269,008	48,314,646	1906	222,058,181	3-5
Netherlands:	1906-7	71,451,788	74,760,449	1907	458,069,211	2½-3
Dutch East Indies	1906	61,109,136	64,957,370	.....	.....	....
Dutch Possessions in America	1906	1,720,158	2,261,250	.....	.....	....
Norway	1905-6	26,821,673	26,911,111	1906	91,764,945	3-3½
Paraguay	1906	2,126,746	1,873,304	1906	12,303,592	3
Persia	1904-5	7,056,000	7,056,000	1906	16,737,500	5
Peru	1906	12,197,327	12,555,720	1905	15,266,000	1
Portugal	1905-6	62,064,000	63,096,000	1906	864,701,627	3-4½
Portuguese Colonies	1905-6	10,165,000	10,242,000	.....	.....	....
Roumania	1906-7	46,110,834	45,883,673	1906	278,247,239	3½-7½
Russia	1905	1,451,308,000	1,650,448,000	1906	4,038,199,722	3-6
Finland	1905	20,660,819	23,246,364	1906	27,073,900	3-3½
Santo Domingo	1905	2,427,802	2,399,811	1906	30,236,731	2½-4
Servia	1905-6	17,216,965	17,208,864	1905	88,971,135	4-5
Siam	1905-6	16,085,871	15,861,925	1906	4,886,500	4½
Spain	1906	172,767,678	165,674,506	1906	1,829,265,995	2½-5
Sweden	1906-7	51,826,000	51,826,000	1906	102,059,388	3-3⅜
Switzerland	1905	24,955,530	22,526,223	1906	19,787,648 (d)	3½
Turkey	1905-6	14,212,326	14,212,326	1906	458,603,213	3½-5
Uruguay	1906-7	18,931,770	18,819,027	1906	125,585,243	3½-5
Venezuela	1904	10,721,363	10,214,626	1906	45,160,402	3

(a) Does not include $134,771,300 contributed to Imperial Treasury. (b) Does not include $131,466,154 transferred by Imperial Treasury to various states. (c) Internal debt only; foreign debt has been taken over by Chile. (d) does not include railroad debt. (e) Included in budgets of states.

DICTIONARY OF BUSINESS AND FINANCIAL TERMS.

Comprising Those Used in Stock and Trade Transactions.

ACCEPTANCE. When a person against whom a time draft is drawn is presented therewith before due it is given to him for "acceptance." This he does by writing across the face of the draft the word "Accepted," followed by his signature. The draft is then said to have been honored, and has become a proof of indebtedness against him, in much the same way as a promissory note. Similarly, the person drawing the draft has become the indorser. Therefore, if the "drawer" has been granted use of the money by his bank, which is to collect the draft, or if it is negotiated in the interim, and the "acceptor" fails to pay, the "drawer" must make it good. Usually, when a draft is "accepted," it is dated, and a place of payment named. If that is not done, the draft is payable at the "acceptor's" place of business.

ACCOMMODATION PAPER. Instruments which the maker, drawer, acceptor, or indorser signs as an accommodation to another, with no financial consideration, unless, as is sometimes the case, a commission is paid. That is, a person signs such an instrument for the purpose of loaning his credit to another, without expectation of return. Corporations cannot legally give "accommodation paper."

ACCOUNT SALES. A statement of an account given to a customer by a broker, agent, or commission merchant.

ACCOUNTS PAYABLE. Open accounts, showing the sums due to others, but not proved by notes or acceptance, or other written obligation.

ACCOUNTS RECEIVABLE. Open accounts against customers, which are on the books of a firm, corporation, etc., but which are not shown by written forms of indebtedness.

ACCRUED DIVIDEND. Sold only in case of "guaranteed stocks" or stocks where the dividend is certain and fixed. Bears the same relation to a stock as "accrued interest" does to a bond.

ACCRUED INTEREST. If a bond is sold by the person holding it before the date when interest is due, the buyer gives the value of the bond, together with the amount of interest then due. This is made up to him when the interest is paid by the issuant of the bond. Terms used in the same sense as "accrued interest" are "with interest," "and interest," or "interest added." The legal rate of interest in the state where the note is made payable is understood if no rate is mentioned in a note drawn payable "with interest."

ACKNOWLEDGMENT. A certificate given by the proper officer, showing that the maker of a written instrument has declared before him that such instrument is his willful act and deed.

ACTIVE ACCOUNT. Brokerage accounts which show many transactions; bank deposits against which checks are frequently drawn.

ACTIVE PARTNER. Distinguished from "silent partner" and "special partner" as one who is actively engaged in the business, and who incurs full liability.

ACTIVE STOCKS or **BONDS.** Securities which frequently change hands.

ACTUARY. One skilled in the theories and mathematical calculations on which life insurance is founded and conducted. His most important work is the study of death rates and the measuring of probabilities based on these calculations. He also computes mathematically the reserve upon policies, premiums, surplus, and dividends.

ADMINISTRATOR or **ADMINISTRATRIX.** One who takes charge of the goods and estate of a person dying without a will. Appointed by the Probate Court or other proper authority.

ADMITTED TO QUOTATION. When a security is admitted to quotation, it is allowed to be dealt in upon the Unlisted Department of the Stock Exchange. The term "listed" is used in place of "admitted to quotation" when a security is placed upon the regular list by the Governing Committee.

ADVANCE. A rise in prices is signified in the expressions, "the market has advanced," "rent has been advanced." The word is also used to indicate that a payment has been made or that money has been loaned.

ADVICE. If a check is sent to some bank, with a letter containing the words "for the credit and advice of Anthony Thompson," the bank is directed to credit the amount to Anthony Thompson and notify him (send him "advice") that it has done so.

AGENT. A person who represents, acts for, or in behalf of another, who is called his "principal." A "special agent" is one whose duties and authority are restricted to a single transaction. A "general agent" is "one appointed to do acts of a class" (definition given by United States Supreme Court); for instance, one employed to purchase writing paper at wholesale, without restriction as to where or of whom he should buy. To avoid personal liability on the part of the agent, he should sign any negotiable instrument or contract under seal with the name of his principal, by himself as agent. For instance, "Edward Willis, by Oscar Larned, Agent"; not "Oscar Larned, Agent, for Edward Willis."

AGIO (spelled in various ways). The rate of exchange between the moneys of two countries. In the same country, the percentage of difference in values between two different moneys. For example, in some countries a paper currency may not be accepted at its face value in exchange for metallic currency, and the percentage by which the latter exceeds the former in value is called "agio." "Disagio" is the percentage in value at which the paper currency is accepted below the metallic currency; the premium upon a better currency being represented by "agio," and a discount upon a depreciated currency, by "disagio." The latter term is used also for the wear and tear or "abrasion" of a metallic currency.

ALLONGE. A slip of paper attached to negotiable instruments, such as checks or promissory notes, to receive further indorsements when the back of the original paper is entirely covered with indorsements.

ALL OR NONE. A condition imposed by the bidder for an issue of securities, recognizing that, if his bid is accepted, he is to take the entire issue—no lesser amount. Or the seller may impose the same condition upon the successful bidder.

ANCILLARY RECEIVER. When property is situated in some other state than that in which the "receiver" (principal one) gets his authority, it may be managed by a second or assistant receiver, called "ancillary receiver."

ANNUAL INTEREST. Interest payable once a year. Interest payable semiannually or quarterly is considered more desirable.

ANTI-STOCK WATERING LAWS. That a dollar shall be invested for every dollar of stock issued is required by these laws.

APPRAISED VALUE. Value an appraiser sets upon a property.

APPRAISEMENT. The value set upon a property or the placing of a value upon it.

APPRAISER. A person appointed by law or named by an individual to estimate values.

ARBITRAGE. Purchasing a security in one market and selling for a better price in another. When advantage of the difference in current quotations of two markets is taken by purchasing a security in one and selling the same in the other, the difference, less certain expenses, is called the "arbitrageur's" profit. At times the sale is made in one market before the purchase in the other. "Arbitrage" business is carried on between London and New York, chiefly by "international banking houses"; between different American markets; and between New York Stock exchanges.

ARBITRARY. On the theory that a branch road delivering freight to a main line is entitled to more than its mileage proportion of the through rate, a fixed sum, or "arbitrary," is paid for by a main line of railway to a branch or connecting line, for freight originating on the latter, without regard to its proportion of the through rate on such freight.

ASKED PRICE. The price asked for a security or commodity—the price at which it may be purchased.

ASSAY OFFICE. A branch of the United States Mint next to the Sub-Treasury on Wall street, New York City. (Assay offices are found also in other parts of the country.) Here gold or silver, presented in any form, is assayed, parted, refined, and gold and silver bars are manufactured. The government stamp certifying to weight and fineness is given to all such

that pass through the ''assay office.'' Work for others than the government must be paid for.

ASSAY OFFICE BAR. A bar of fine gold or silver manufactured at a government ''assay office'' for the United States government; so named to distinguish it from a ''commercial bar,'' i. e., one made without government regulation.

ASSENTED STOCKS or **BONDS.** When a corporation is reorganized and the security holders are asked to give ''assent'' to a certain plan; if stock is ''assessed''; or in like cases where the consent of each share or bondholder is desired, it is customary to choose some banking house or trust company to receive the securities and to stamp on each the fact that the holder has ''assented'' to the plan or paid the ''assessment.'' Should more than one assessment be required, ''first assessment paid,'' ''second assessment paid,'' etc., will be stamped on the security. The above are briefly referred to in financial columns and stock exchange sheets as ''ass't pd.,'' ''1st ass't pd.,'' etc.

ASSESSED VALUATION. Value fixed for taxation upon the property of a municipality by authorized officials. Rules for fixing the assessment vary in different states. In Massachusetts, property is assessed for nearly its marketable or real value; but in many Western states the assessment is based upon about one third, or even less, of the real value.

ASSETS. Cash and debts receivable, property, real estate, patent rights, trade-marks, machinery, merchandise, material, and stock being manufactured—everything of any supposed value belonging to a person, business, or corporation—are called ''assets.''

ASSETS CURRENCY. A proposed issue of bank notes secured by the general assets of the issuing bank instead of by government bonds.

ASSIGN. To convey in writing any right or interest. Term commonly used when a merchant, unable to pay his debts, transfers his property to another for apportionment among his creditors.

ASSIGNAT. Paper currency issued in France during the Revolution of 1789, the security being confiscated church land, all the national domains, and other property. Over 45,000,000,000 francs were issued.

ASSIGNEE. Person to whom some right or interest is transferred by writing. When a merchant voluntarily conveys his property to another for changing into cash and apportionment among his creditors, that other is called an ''assignee for the benefit of creditors.'' When a state court under the state insolvency law, appoints a person to take possession of the property of an insolvent debtor, sell it for cash, and distribute it among the creditors, that person is called an ''assignee in insolvency.''

ASSUMED BONDS. When a corporation passes into the control or ownership of another company the bonds that have been issued by the first are assumed by the second, which becomes responsible for the payment of the principal and interest of these bonds now called ''assumed bonds.'' ''Divisional issues'' is the term used of such securities in railroad finance. When referred to as ''guaranteed bonds,'' the guarantee appears upon the bonds themselves.

AT THE MARKET. An order to buy or sell at the best market price offered, without actual price limit.

AT THE OPENING. An order to buy or sell, without actual price limit, at the best market price offered immediately after the opening of the exchange.

ATTORNEY IN FACT. Person who acts under the authority conveyed by power of attorney.

ATTORNEY'S OPINION. Written statement or approval given by a lawyer in regard to bonds which have been examined by him before their issue. All bonds should be so attested, the attorney thoroughly describing the bonds and stating clearly that he has not only examined and approved all the papers necessary to establish the legality of the issue, but one of the executed bonds as well.

AU BESOIN. Frequently appears in bills of exchange where a person is named who may be referred to for payment if the original person (drawee) refuses. Literal meaning, ''in case of need.''

AUCTION SALES. Auction sales of securities, having no connection whatever with the stock exchange, are held in auction salesrooms of private banking firms, when any one may be present. There is no restriction as to securities which may be offered for sale in this way, and many securities not listed upon the stock exchanges are sold, in addition to those which the law provides must be sold at auction.

AUDITOR. A person whose profession is to audit or examine and report upon the accounts of a firm, corporation, etc., to compare charges with the vouchers, prepare a balance sheet, and certify whether the financial condition is, or is not, as represented.

AVAILABLE ASSETS. Property not previously given as security for an indebtedness, which is available for sale or use.

AVERAGING DOWN. To buy at a lower price than the previous purchases in order to lower the average cost to the stockholder.

AVERAGING UP. To buy or sell more of a certain stock as the market advances and so increase the average price of the whole.

AWARD. The acceptance of a proposition to buy. A term customarily used in reference to some issue of bonds for whose purchase bids have previously been submitted.

BAD DELIVERY. A security not complying with the regulations of the stock exchanges regarding ''good delivery.''

BALANCE. Difference between the debits and the credits of an account. The sum due from one party to another after settling accounts.

BALANCE OF TRADE. When we have sold to the merchants of Great Britain merchandise of more value than they have sold to us, the ''balance of trade'' is in favor of the United States. If the condition is a temporary one, the natural result is the selling in the United States of ''exchange'' on Great Britain at a discount, or the shipment of gold to adjust the balance. As other factors, such as interest and principal due on account of securities of one country held in the other, are to be considered, the ''balance of trade'' does not always determine the debtor country.

BALANCE SHEET. A statement showing the balances of the open accounts of a business. On one side of the account are the assets; on the other, the liabilities and capital invested. The two sides should foot up equally, in other words, should balance.

BANK ACCOUNT. Having chosen your bank, find out the smallest sum of money which it will receive on deposit. Obtain an introduction to one of the bank's officers. Tell him, or the person to whom he may assign you, the amount you will probably keep on deposit, whether you will wish to borrow from the bank at intervals, and the kinds of loans. As a rule, large banks do not wish small accounts. Next present your deposit to the receiving teller, together with a ''deposit slip'' or ''ticket,'' which is furnished by the bank. Be sure the blanks are filled out, showing the character, amount, date, etc., of the deposit, and that your name is written at the top. The teller will give you a ''pass book,'' showing on the debit side the sum deposited. Before you leave his window notice if this is correct. The pass book should be returned to the bank the first of every month. When given back to you with the canceled checks be very sure to check it up yourself to see if the amount of your deposit is equaled by the addition of the total amount of the checks paid, the balance reported by the banks to your credit, and the sum of the checks drawn and not yet presented to the bank for payment. Canceled checks should be saved. A check book is generally furnished at the bank's expense. That your checks may be identified, you will sign in a book or on a signature card, kept for the purpose. If acting as agent, trustee, or attorney for some other person or persons, do not open a bank account in your own name for their benefit unless you have formal proof of the relationship.

BANK BALANCE. The sum of one's credit in a banking institution; also a bank's debit or credit at ''clearing.''

BANK BOOK or **PASS BOOK.** This book is proof of the bank's indebtedness to a depositor. In it is made by the bank a written entry of each sum deposited by a customer. It should be returned to a savings bank once or twice a year; to a national bank, ''bank of deposit,'' or trust company, once a month. All changes or additions must be made by the bank, none by the depositor. Formerly a list of all checks paid during the month was entered on the credit, or right-hand page of the book. Now it is customary to write the list on a separate sheet of paper, entering on the credit page only the total amount. The deposits are entered on the left-hand or debit page. These are added, the total amount of the checks paid deducted, and the remainder, or balance, entered upon the credit page. This gives the sum of money to the credit of the depositor at that time, and is carried

forward to the left-hand page, and added in with the next period's deposits. The total amount of deposits should be equaled by the sum of the checks paid and the amount still to the credit of the depositor, who, when the book is returned to him, should satisfy himself that no mistake has been made by the bank. To do this he checks off what has been paid during the period, a process facilitated by a comparison of check numbers with the stubs. In this way may be easily noted the checks drawn by the depositor but not yet presented to the bank; and their total amount added to the sum total of the checks paid as given by the bank. When these are added to the balance still to the depositor's credit, all together should equal the sum of the deposits for the period; due allowance being made for interest (if any) and for collection charges.

BANK COMMISSIONER. A person appointed by the state to examine into the affairs of chartered banks and to have certain supervision over them. The duty of the bank commissioner and his assistants, which is to see that the savings banks and trust companies within the state are complying with the laws that regulate them, is accomplished by examinations into the affairs of each institution, at stated intervals. Questions, such as whether a particular investment may be legally bought, may be submitted by banks and trust companies to this board of commissioners, whose broad powers include the authority to pass upon and decide such difficulties.

BANK DISCOUNT. Simple interest, reckoned upon the face value of a note or other obligation, paid to one who loans money, in advance.

BANK DRAFT or **BANKER'S DRAFT.** A ''draft'' which one bank or banker draws against another.

BANKER. A custodian of the funds of others. Term should not be used in regard to those whose exclusive business is note broking, stock broking, etc., nor in cases where custodianship of money is not involved.

BANKER'S BILLS or **BILLS OF EXCHANGE.** Drawn by a banker in one country against one in another, with whom he has credit. Distinguished from ''commercial bills'' or ''bills of exchange,'' which are drawn by shippers of merchandise.

BANKER'S CHECK. A check which one banker draws upon another.

BANKER'S NOTE. A promissory note of a banking firm not incorporated, or of a private banker.

BANKER'S STERLING. ''Exchange'' on Great Britain bought at some bank or banking house. To be distinguished from regular ''bills of exchange'' held, with bills of lading, by sellers or exporters to show the sum due them.

BANK NOTE. A substitute for real money. A promissory note issued by a bank payable in lawful money to bearer on demand.

BANK OF DEPOSIT. By this term bankers understand an institution which receives deposits subject to check, but allows no interest on the account, in contrast to trust companies, savings banks, and similar institutions, which do allow interest on deposits. The former class is represented by state and national banks.

BANK OF DISCOUNT. A bank whose deposits and other funds are, to a great extent, used to discount bills of exchange, notes, etc. Of this kind are national banks, but not savings banks.

BANK OF ISSUE. Money of its own in the form of ''bank notes''—paper money which circulates as currency—may be issued by those banks given authority under the law to do so. Such a bank is called a Bank of Issue. Of this kind are national banks. Until 1865 ''State Bank Notes'' were issued by state banks, but at that time an act taxing such notes 10 per cent. was passed by Congress, with the result that they were quickly retired.

BANKRUPT. One who according to the laws of bankruptcy has been judicially declared unable to meet his liabilities. When advantage is taken of the National Bankruptcy Law, the debtor gives up all his property to be divided among his creditors, thus compelling them to make a settlement. When this is done he is given a legal discharge, absolving him from further liability. If it is afterwards discovered that the ''insolvent'' person has concealed property, thus defrauding his creditors, the law as a rule allows the latter to take possession. The forcing of an insolvent person into bankruptcy by creditors is called ''involuntary bankruptcy.'' But a ''wage-earner'' or a ''person engaged chiefly in farming or the tillage of the soil'' cannot be so forced. Also, the insolvent person cannot be declared a bankrupt in an involuntary proceeding unless he owes debts amounting to at least one thousand dollars, has committed an act of bankruptcy, and the fair valuation of all his property is less than the sum of his debts. The action of ''voluntary bankruptcy'' is brought about by the debtor or the ''insolvent,'' who may, unless a corporation, take advantage of the present Federal law to be adjudged a bankrupt.

BANK STATEMENT. A tabulated statement of their condition made usually once a week by banks in the larger cities belonging to the Clearing House Association. The New York Bank Statement, awaited with great interest by financial men, is issued to the public each week. A statement is tabulated by each national and state bank in the city belonging to the Clearing House Association, showing the average of each item for the period covering all the preceding business days of that week and the last business day of the previous week. These averages are received by the Clearing House manager, who obtains in like manner the average of each item for the combined statement. The ''bank statement'' never gives the actual conditions at the date of issue, since only the averages for the time covered are given. ''Non-member banks,'' that is, banks which, although not members of the Association, ''clear'' through those which are, issue a separate statement. Since trust companies and their resources are not directly included in the ''bank statement,'' its value is greatly lessened, and the true condition of the banking institutions **is not obtainable.** At times sudden withdrawals, or deposits, by the trust companies—large moneyed firms and institutions carrying accounts with the Clearing House banks—are made on purpose to render the statement misleading, in order to influence the loaning rates of money, and to affect the prices of stocks through a change in loaning rates.

BARGAIN. In England a term signifying a transaction between two members of the London stock exchange.

BAR GOLD. Gold in the form of bars of the British standard is 11-12 fine. The mint value of gold per ounce is 77s. 10½d., and the Bank of England is compelled by law to pay 77s. 9d. per oz. for all gold offered. It obtained, on September 20, 1906, the record price of 78s. 1d. for £200,000 bar gold. Gold imports are favored by the difference when the market price of ''bar gold'' falls below 77s. 10½d. in London. To make gold imports permissible in America, the fall of ''sterling exchange'' here must be greater the more the price of gold advances in London.

BARING PANIC. When, after a period of riotous speculation on the London Stock Exchange during the fall of 1830, the banking house of Baring Bros. was on the verge of collapse, dismay spread throughout the entire financial world; for untold misery would be caused by the failure of this great firm, with the many other moneyed institutions which would be carried down therewith. Such a world panic was averted by the wise and prompt action of Mr. Lidderdale, then Governor of the Bank of England, who obtained a loan of gold from St. Petersburg and the Bank of France. Against this the Bank of England, to temporarily accommodate the public, made an issue of paper money. Many leading bankers of London were persuaded by the Governor to write and subscribe a large guarantee fund, taking over the total assets of Baring Bros. The Bank of England liquidated, and ultimately a large surplus was returned to Baring Bros.

BAROMETER STOCKS. Daily, except on Sundays and stock exchange holidays, the average price of certain stocks is taken, and the rise and fall is a good indication of the trend of the market.

BAR SILVER. Silver that has not been and may never be minted into coin, but which comes from the smelter in the form of bars. The commercial value of the 371¼ grains of fine silver in a silver dollar was 72½ cents in 1907. ''Bar silver'' is bought and sold in London as a hedge against business transactions. The lowest price of silver in the world's history was 21 11-16 pence (about 43 cents) per oz., when it dropped to that in London on November 27, 1902. In New York, on September 3, 1890, the price was $1.21.

BEAR. One who sells stocks or securities for future delivery in anticipation of a fall in the market. A person is a ''bear'' on the particular security whose price he believes is about to fall, but is not necessarily so on others. The ''bear,'' while naturally a seller, may be so for the purpose of buying at a lower price later on.

BEAR CLIQUE. A combination formed to depress market prices in general or the price of one security in particular.

BEARING THE MARKET. A forcing down, or depressing, of prices by artificial means.

BEAR MARKET. A "bear market," or general fall of prices, is the result of a predominating influence of the "bears."

BEAR PANIC. "Bears" on a certain stock and those who have gone "short" of it, when its price suddenly and rapidly advances, try frantically to "cover" or buy in what is needed to fill their contracts.

BEAR RAID. If there is much "long" interest at the same time that those who are "short" of the market wish to "cover," advantage may be taken by the "bears" to "sell short," and so force prices down that those who are "long" will of necessity sell. This will permit the "shorts" to "cover," or buy in, at a profit.

BELOW PAR. Below the face value.

BELT LINES. Short, connecting lines of railroad between one railway terminal and another. To connect railroads approaching a city from different directions, it has usually been necessary to follow a circular or belt course around a certain section of the city, and so the name "belt line" originated. If one belt system encircles another, they are often distinguished by the terms "inner belt" and "outer belt."

BERLIN DISCOUNTS. The discounting rates of good "commercial paper" at Berlin.

BETTERMENT or IMPROVEMENT. The cost of additional rail or other improvements on a road is as a rule charged first to a "betterment account" or "improvement account." It depends much upon the financial condition of the company, how it is treated at the end of the fiscal year. By a prosperous one it would probably be charged directly to "operating expenses," while by a company of limited financial resources it might be charged to "capital account" or "construction account." That the capitalization of a "betterment" should be only in proportion to the increased earning ability which the "betterment" has conferred upon the property is the opinion of many experts.

BIDDING UP. Bidding each time a little more than the previous actual sale, so as to create an advance in prices.

BID PRICE. The price bid or offered for any security.

BIDS AND OFFERS. A modern name for "puts" and "calls." In the New York Stock Exchange all offers to buy or sell securities are, unless otherwise stated, for 100 shares of stock or for $10,000 par value of bonds. Rules for the making of bids and offers are as follows: for delivery upon the day of contract, "Cash"; for delivery upon the business day following the contract, "Regular way"; for delivery upon the third day following the contract, "At three days"; not less than four nor more than sixty days is the limit for "buyer's" or "seller's options." If made without stated conditions, bids and offers are considered to be in the "regular way." A smaller variation than one eighth of one per cent. is not permitted in making bids and offers. If the par value of the securities is ten dollars or less per share, the bid and offer shall be in dollars or fractions thereof; if higher, bids and offers shall be made on the basis of a percentage of the par value of the securities dealt in. That the purchase money be paid on delivery may be rightfully required by the party delivering. Payment may be required at the time and place of transfer, if the deliveries are made that way. Under the Illinois statutes, transactions of "bids and offers" are prohibited.

BIG FOUR. Cleveland, Cincinnati, Chicago, and St. Louis Railway Company.

BIG KATY or KITTY. Missouri, Kansas, and Texas Railway Company preferred stock.

BIG NPR. (NIPPER). Preferred stock of the Northern Pacific Railway Company.

BIG STEEL. United States Steel Corporation preferred stock.

BIG THREE. The New York Life Insurance Co., The Equitable Life Assurance Society, and The Mutual Life Insurance Co., of New York—the three largest life insurance companies of New York City.

BIG UNION. Preferred stock of the Union Pacific Railway Company.

BILL. "Bill of Exchange." Bank bills or government notes are referred to by "bill" in the language of the clearing house. The expression is used also of promissory notes, the ordinary statement of a creditor's claim, as a butcher's bill, etc., or of any paper requiring money settlement.

BILL AT SIGHT. Same as "Draft" or "Sight Draft."

BILL-BOOK. Record of drafts, notes, etc., by a bank.

BILL BROKER. Sometimes called "bill merchant." In England, one whose business is to handle "bills of (inland) exchange," promissory notes, etc.

BILL OF CREDIT. Paper money issued by authority of the Government, and designed to circulate as money. As provided by the Constitution of the United States only the United States legislature, and none of the constituent states shall have the power to borrow money and "limit" bills of credit.

BILL OF EXCHANGE. Said to have been invented by Jews or Lombards in the fourteenth century in order to withdraw their property from the countries from which they were expelled. A written order from one person to another, requiring the latter to pay on demand or at a stated time, a certain sum of money "to order" or "to bearer," and charge to the account of the drawer. The order generally expresses that it is drawn for value. A bill of exchange is commonly termed a "draft."

BILL OF LADING. A written receipt for goods accepted for shipment by land or water transportation companies.

BILL OF SALE. A paper conveying from one party to another interest or right in personal property.

BILLS PAYABLE. Unpaid evidences of a person's indebtedness such as acceptance, notes, etc., held by others against him. From his standpoint they are bills "payable"; from the standpoint of those to whom they are due, they are "bills receivable." When, instead of a cash payment for a sum due, a promissory note, or some such instrument is given, they become "notes payable," or "notes receivable."

BIT. Used upon the Pacific Coast to indicate 12½ cents, the common term for a "quarter" or 25c. being "two bits."

BLACK FRIDAY. On September 24, 1869, Wall Street had one of the greatest upheavals it has known. A "corner" in gold, manipulated by Jay Gould and his partner, James Fisk, till it reached 162½, was suddenly broken by the Government purchasing with gold $4,000,000 of its own bonds. May 11, 1866, is also known as "Black Friday," because of the failure of the large London banking house of Overend & Gurney, and the disaster which followed.

BLANKET MORTGAGE. A rather vague term usually meaning a mortgage covering several different properties or a collection of properties, given to secure a single debt. It may also be given to secure indebtedness previously created in different forms. An underlying lien (indebtedness having prior claim) is usually implied by such a mortgage. This term is sometimes improperly used as synonymous with "general mortgage."

BLIND POOL. A name sometimes given to a corporation whose operations are known only to its own officials, and withheld from the stockholders and the public. Also, a "blind pool" is formed when, for a definite time, a group of corporations, or individuals, place certain specific interests in the control of one person, usually one of the group, and it is agreed that their interests shall be conducted by that one with no instructions from the others except those set forth at the beginning.

BLOCK. A large number of shares in a stock company bought or sold in a lump is called a "block of shares" or a "block of stock."

BLOTTER. First or temporary transactions are recorded in the "blotter," or book of original entry, and later "posted"—transferred—into books of more permanent record.

BONDED DEBT. Bonds comprising the fixed indebtedness of a municipality or an incorporated company. What bonded indebtedness may be placed upon a property with fairness to both shareholders and bondholders is a question worthy of serious consideration. That the property of a corporation should only be mortgaged to the extent of the minimum value placed thereon in a time of public adversity—its "unchangeable value"—is the general opinion. With such exceptions as those of some communities in the

Far and Middle West, where the assessed valuation in proportion to the marketable value of the property is very much less than in the East, no municipality should ever have a net indebtedness of more than 5 per cent. of its assessed valuation.

BOND OF INDEMNITY. When a corporation has issued a new security in place of one lost, it is protected against the finding and presentation of the first security at some future date by a "bond of indemnity." It is the business of "guaranty and indemnity" companies to furnish such bonds, at a reasonable price, when the loss of the security has been satisfactorily proved. This bond is really a form of insurance. A bond of indemnity is used to protect an employer against loss from the handling of funds, securities, etc., by an employee—as the cashier or treasurer of a bank.

BOND RESERVE. As bonds are supposed to be quickly convertible into cash in case of necessity, banks have, of late years, invested some portion of their funds in such securities. "Bond reserve" is the term used for an investment of this kind.

BONUS. This term is most generally used of stock thrown in with the sale of bonds or other stock. It is also used of a premium given for a loan or a charter or other privilege granted to a corporation; or an extra dividend to the shareholders out of accumulated profits.

BOOM. A strong advance in the market price of any security or commodity, accompanied by much excitement.

BOTTOMRY. The mortgage of a vessel as security for the repayment of a loan negotiated for the use of the ship.

BOURSE. In continental Europe, a market or exchange for a specific kind of merchandise, such as cotton, grains, etc.; or for securities generally. The Paris Bourse, or Stock Exchange, was established in 1726.

BREAK. "Break in the market," a decline in prices both great and unexpected.

BREAK EVEN. To come out just even. A transaction completed without profit or loss.

BROKER. A middleman who negotiates purchases, sales and contracts for others and receives a fixed fee or "brokerage." He generally contracts in the name of his principals instead of his own. There are various kinds of brokers—stock, real estate, oil, etc.

BROKERAGE. The "commission" or "fees" paid to a broker.

BUCKET SHOP. An office or place where facilities are given for gambling small amounts in "margins" (q. v.) and run by unreliable brokers, not permitted to be members of a stock exchange. However, the stock itself is rarely purchased or sold for the customer. Should the order be actually executed upon a bona fide exchange, an order for the same amount is put in by the bucket shop. For instance, the bucket shop would buy an amount equivalent to the customer's sale, or would sell an amount equivalent to his purchase. In other words, the customer wagers his money upon a given stock going up or down, and the bucket shop accepting the wager gambles the other way; and, as is almost invariably true, the gambling establishment—in this case the bucket shop—wins in the long run. As it is natural for the average person to buy with the expectation that stocks will go up, the bucket shop thrives best on a declining market. The daily transactions of this unwholesome business, centering in New York, are sometimes almost as large as those of the New York Stock Exchange itself; it is surmised that a few unscrupulous financiers control a large percentage of this business, and that under their management orders are received at a common center from branch offices throughout the country.

BULL. A person operating in anticipation of a rise in prices, or with a view to bring about such a rise.

BULL CLIQUE. Persons who unite in mutual efforts to advance market prices in general or the price of one or more securities.

BULLION. In discussions relating to currency, this term signifies both coined and uncoined metal when reckoned by weight. For export purposes and in general use, uncoined gold or silver usually in bars or ingots is understood.

BULLION VALUE. Should a gold five-dollar piece be worn so that its weight has been reduced to $4.75 worth of fine gold, the latter is its bullion value, the term signifying the commercial value of the precious metals as distinguished from the face value of coined money.

BULL MARKET. A "bull market" exists when the influence of the "bulls" is predominant in the market.

BUSINESS PAPER. "Commercial paper" or "paper" are terms used of all classes of acceptances, notes, bills of exchange, etc., no matter for what purpose given. Several other terms used to designate particular kinds of "promises to pay" have come into general use. "Business paper" signifies the notes, acceptances, etc., taken in exchange for goods delivered, in distinction from notes given in exchange for money to use in business. "Business receivables" and "trade paper" are terms often used in reference to "business paper."

BUY AT THE OPENING. An order to purchase at the lowest possible price as soon as the stock exchange opens.

BUYER'S OPTION. Under such a contract the buyer of a security has, by giving the seller one day's notice, the right to demand delivery any time within the period covered by the contract, but need not receive delivery until the end of the specified time. "Buyer 5," "buyer 18," etc., briefly express the understanding, the number of days provided for in the agreement being indicated by the figures. The time must not be less than four nor more than sixty days, according to the rules of the New York Stock Exchange.

BUYING ORDER. An order to buy certain securities, with or without price limit, given to a broker and good only for the date for which it is given unless specified differently.

CALL. A notice that the amount of a bond will be paid; a demand for the payment of money, or for subscriptions to stocks or bonds. By this kind of contract, its possessor may at a fixed price and within a stated time, demand from the signer thereof a certain amount of stock (grain or other commodity). In New York, this privilege may be exercised any time within the life of the "call"; in London, only upon the last day of the time limit. Calls are dealt in much more extensively in London than in America. If the rights of the call are exercised, the stock is accompanied by all dividends paid upon the stock in the meantime.

CAPITAL ACCOUNT. If expenditures upon a property result in the increased earning capacity of the corporation, they may be paid for from increased capitalization; if not, they should be paid for from the earnings of the company, and charged to operating expense." For instance, should a stone building replace a wooden one, but the business of the corporation be not increased thereby, the expenditure should be charged against the earnings of the property, as it represents a "replacement." But if additional buildings are erected and the earning capacity of the corporation is increased by their use, the expenditure may be properly met by further capitalization, as it is an "improvement."

CASH DIVIDEND. Money or its representative given in payment of a dividend.

CASHIER'S CHECK. A check, signed usually by the cashier, which is drawn by a bank against itself and payable when presented at the bank drawing the same. One would use a cashier's check when for the case in hand the check of a known bank would be accepted more readily than his own. Or a person unable to draw a check because without a bank account of his own may obtain a cashier's check by paying the amount in cash, plus, perhaps, a small sum charged by the bank for the accommodation. By the bank itself this check is used in payment for supplies, expenses, in discounting notes, paying for securities, bills of exchange, etc., and also for dividends to stockholders, but a special form may be used for this purpose.

CERTIFICATE OF DEPOSIT. The written acknowledgment of a bank that the person named therein has placed with them a stated amount of money on deposit. It may be made payable either at a specified time or on demand, and usually draws interest. Declared by the courts of California to be a negotiable instrument in substance and effect the same as a promissory note. The money so deposited cannot be withdrawn by check, but the "certificate of deposit" must be presented by the holder thereof or by some one to whom it has been properly indorsed. Like a money order or cashier's check, this certificate may be used to transfer funds from one point to another.

CERTIFIED CHECK. That the person who draws a check has sufficient funds on deposit in the bank to pay it when presented is certified when an expression such as "Accepted," "Good when properly indorsed," or "Good through the Clearing House," followed by his official signature and the date, is written across the check by some competent bank officer. When a check is so certified, the amount of the check is deducted from the sum to the credit of the depositor. If not used, a certified check may be returned to the bank and canceled. The bank is under no obligation to certify checks, but does so merely to accommodate. Except in the case of a "raised check," a bank may be held for payment after certification. National banks are prohibited from "over-certifying" checks; that is, certifying, as an accommodation, that a depositor has to his credit more money than is the case, with the expectation that the depositor will make good the deficit sometime during the day.

CHATTEL MORTGAGE. A mortgage given and recorded in much the same way as a mortgage on real estate, but distinguished therefrom as being a mortgage on live stock, movable goods, or personal property.

CLEARING HOUSE BALANCES. The amount needed to settle the differences between all banks "clearing" through a certain association. The transaction between the clearing house and one bank is referred to as "balances."

COLLATERAL or COLLATERAL SECURITY. Something deposited with the evidence of debt to satisfy the claim of the lender should the borrower fail to meet the indebtedness when due. A security for the payment of money or for the performance of agreements. The collateral is usually about 20 per cent. more in value than the amount of the loan, such additional value being termed the margin. If the value of the collateral decreases to the amount of the loan, and the debtor is unable to pay off part of the loan or deposit additional security, or if the debtor is unable to make payment when the loan matures, the lender has the right to sell the collateral and deduct from the proceeds the amount due for principal and interest, the borrower receiving the balance, if any.

COLLATERAL LOAN. When a corporation or individual has deposited with the holder of a note certain securities which may be sold by the latter if the note is not paid when due, a "collateral loan" is made. If the securities are sold, the creditor retains sufficient to liquidate the debt, and the balance, if any, is handed to the debtor.

COLLATERAL NOTE. When mortgages, stocks, bonds, or other securities are given to secure a promissory note, it becomes a "collateral note." Such may be given by corporations, firms, or individuals, and among many railroad companies they are a common form of borrowing.

COMMERCIAL AGENCIES. Bradstreet's and Dun's, the two principal "commercial agencies" of this country, have their main offices in New York. Books giving the credit standing or rating of practically all the business men, firms, etc., who might possibly need credit throughout the United States and also in other parts of the world, are furnished to subscribers by these agencies. Special information in regard to any person in any part of the territory covered will be supplied to subscribers. In addition to all this, they give the public general information in regard to crop and business conditions, the number of failures during a certain period, etc. The first mercantile agency was established in New York in 1841.

COMMERCIAL PAPER. Many kinds of acceptances, notes, bills of exchange, etc., are covered by this very general term. Note brokers further distinguish the various kinds of "commercial paper" as "business paper," "mercantile paper," "corporation paper," etc.

COMMISSION. The brokerage or compensation given to an agent for his services as a middleman. The New York Stock Exchange has fixed rules for commission charges: (1) All commissions must be reckoned on a par value of securities; (2) transactions for parties or partners not members of the Exchange, or for firms of which the Exchange member or members are special partners only, not less than one eighth of one per cent. commission shall be charged; (3) on business for members of the Exchange, if a principal is given up, the commission must be not less than one fiftieth of one per cent., otherwise, not less than one thirty-second of one per cent. The committee on commissions, with the aproval of the governing committee, fixes, from time to time, the rates on mining shares and subscription rights charged to both members and non-members. The foregoing rules do not apply to government or municipal securities.

COMMISSION HOUSE. A firm which does not speculate on its own account but transacts business wholly on a commission basis.

COMMON CARRIER. One who, for hire or reward, transports from place to place the goods of those who wish to employ him. The term includes all transportation companies engaged in the passenger, freight, or express business. Pipe lines for the transportation of oil or other commodity except water or gas also come under this heading in the "Rate Bill" passed by Congress.

COMMON STOCK. That portion of the capitalization of a corporation on which dividends may be paid after the requirements of the bonds, floating debt, and "preferred stock," if any, have been met. It is the equivalent of the English "ordinary stock." Common stock generally carries voting power.

COMPTROLLER OF THE CURRENCY. The chief officer of that bureau of the Treasury to which is intrusted the execution of all the laws passed by Congress relating to the issue and regulation of a national currency secured by United States bonds, and who really has control of all national banks.

CONSOL CERTIFICATES. Ownerships in the "Consols" of Great Britain and Ireland are represented by these certificates, issued by the National City Bank of New York, and traded in in America in place of the original "consols," thus greatly simplifying such transactions.

CONSOLIDATED EXCHANGE. A distinct association from the New York Stock Exchange, although situated in the same city. Its proper title is "The Consolidated Stock and Petroleum Exchange of New York" and the membership is about 1500. Two thousand dollars is approximately the price of a seat. The rate of commission is one half that of the New York Stock Exchange, that is, 1-16 per cent. instead of 1-8 per cent. and the transactions amount to probably not much more than 10 per cent. of those on the larger exchange.

CONSOLIDATED FIRST MORTGAGE. The same as "first and consolidated mortgage," in its common use in relation to bond issues.

CONSOLIDATED MORTGAGE BONDS. A corporation bond whose security is a mortgage on the entire property formed by the consolidation of several smaller properties. This mortgage may be a first mortgage upon the property so consolidated. If previous mortgages have been issued by one or more of the companies, it would be a general mortgage bond as well as a consolidated mortgage bond. In the case of a railway company, consolidated mortgage bonds are to be distinguished from divisional bonds—mortgages upon the separate properties consolidated. The term is commonly used for an issue which is to refund (take the place of) other issues not yet due, but having a prior lien, it being expected that the funded indebtedness of the company will be finally consolidated by the new debt. In such a case, the new issue is not only large enough, as a rule, to retire the prior indebtedness, but also to furnish money for necessary improvements.

CONSOLS. A contraction of *consol*idated annuities; the name given to the leading Government securities of Great Britain known as "Consolidated Threes" or "Three Per Cent. Consolidated Annuities." The right to pay the principal at its pleasure is reserved by the Government. The fund dates from 1757, and the account is kept at the Bank of England. The stocks are transferable and their market value constantly fluctuates, the price being regarded as a criterion of national prosperity and public confidence. "Two Per Cent. Consols" is the name given to the United States Government 2 per cent. bonds redeemable after 1930.

CONSTRUCTIVE MILEAGE. A relatively greater mileage allowance granted by a main line to a branch connecting line of railway in connection with freight originating on the latter and destined to some through point on the main railroad.

CONVERTIBLE BOND. A bond which is, under certain conditions, convertible at the will of the holder into other securities—usually stocks—and which is generally issued by the same corporation. The annual interest charge becomes contingent instead of fixed if the stock is "converted."

CONVERTIBLE PAPER MONEY. Paper money which the holder has the right at any time to present for redemption at its equivalent in metallic money.

CO-OPERATIVE BANKS. The one great difference between ''building and loan associations'' and ''co-operative banks'' is that from the latter a member has the right, by giving due notice—perhaps thirty days—and upon certain other conditions, of withdrawing the accumulations upon his unpledged shares.

COPPER or **COPPERS.** The product of the mine is called ''copper.'' Shares of stock in the various copper companies are referred to as ''coppers.'' These are also distinguished by the expressions ''copper the metal'' and ''copper the stock.'' The copper industry of the world is dominated by the entire production, including what we have from adjoining countries. The average price is 15.70 cents per pound, and for 1906 our estimated production was about 413,834 tons. ''Coppers'' is a name often given to our pennies.

CORN. The commission for corn is the same as on other grains, but its margin is about three cents a bushel, and 5,000 bushel lots is its trading unit for future delivery.

CORNER. A buying up of the whole, or the available part of any stock or commodity, so as to control the selling price, as a ''corner'' in cotton.

CORPORATION. An association of persons for the purpose of carrying on some business or enterprise, who are exempt by law from personal liability beyond the amount already invested. The different ownerships are represented by shares of stock. Semi-public enterprises such as electric lighting, gas, street railways, etc., must be conducted lawfully by incorporated companies in order that the state may have some control. To form a corporation, a charter must be obtained from the legislature of a state, or from such officers as may be authorized to grant charters or even, under certain conditions, from Congress. With some exceptions companies may incorporate under the laws of a state other than the one in which the business is conducted. Many states have enacted laws conveying great privileges in the charters, and receive a large revenue from them, since corporations, as a rule, select that state which grants the most privileges. The three ''charter bartering states'' most liberal in the range of the charters granted, conveying upon corporations rights to do things in other states often prohibited by the laws of those states, are New Jersey, West Virginia, and Maine. It is necessary to name a resident ''attorney in fact,'' given the usual powers of such attorneys, when companies organize under a different state than the one in which their business is conducted. That the principal office, containing the stock and transfer books, etc., of any company incorporated therein shall be located within its confines is required by some states. A ''certificate of incorporation,'' following the form used by the state where the corporation is organized, and usually accompanied by a copy of the constitution and by-laws, must be filed with the secretary of state or some other properly designated person.

COTTON. Five hundred pounds is the average weight of a contract bale, the buying and selling unit being 100 bales, or 5,000 pounds. ''Points'' is the term used to record fluctuations, there being 100 ''points'' in a cent. If it declines fifty ''points,'' it means one half cent per pound, or $2.50 on each bale, and $250 on the 100 bales. Members of the New York Cotton Exchange are charged a commission of $7.50 per 100 bales for the ''round turn,'' i. e., buying and selling; non-members are charged $15. The usual margin charged by brokers is one half cent per pound, or $250 on each 100 bales. But this varies according to circumstances.

COUNTRY BANKS. Not located in a ''reserve'' or ''central reserve'' city, and not allowed to hold the ''reserve'' of any other national bank. Their reserve need be only 15 per cent. of their net deposits, two fifths of which must be kept in their own vaults. With the approval of the comptroller of the currency, the balance may be deposited with a bank in either a ''reserve'' or ''central reserve'' city.

COUPON. The small certificate attached to the part of the bond which represents the principal sum, the interest upon the bond for a certain period being represented by each coupon. Enough coupons are attached to represent the interest for the entire length of time before the bond matures. As the coupons, or certificates, severally become due, they are cut off and presented at the place named for payment.

COUPON BONDS. Those which have attached interest coupons or notes made payable to the bearer, to be presented for payment at stated intervals as the interest becomes due.

COUPONS, COLLECTION OF. Care should be taken in transmitting coupons from one point to another, for, like a five dollar bill, good in the hands of any one, they are usually made payable to ''bearer.'' As banks have the safest and most thorough systems for coupon collecting, the best thing for an individual to do is take the coupon to his local bank about a week before it matures, and request them to collect it for him.

CREDIT. Transfer of property or goods in expectation of future payment; also the time allowed for such deferred payment, as a short credit, or a long credit. In bookkeeping, credit for money received or its equivalent is entered on the credit or right hand side of the account.

CREDIT CURRENCY. Called so when the general assets of a bank are the only security for the currency which it issues, as is true of the Bank of France. As against all additional notes above a certain fixed amount issued by the Bank of England there is a deposit of gold coin and bullion, such notes are substantially ''gold certificates.'' The nearest approach to real money that is not actual money are the United States ''gold'' and ''silver certificates,'' as each one is represented by an equal sum of gold or silver deposited to secure it.

CUMULATIVE. Generally used in reference to preferred shares of stock. Common or other stocks can receive nothing until the unpaid dividends on the preferred, which have accumulated from year to year, are paid. The chances of dividends upon common shares is naturally lessened by a ''cumulative issue.''

CURB. A market in the open (on the curb) where are handled new securities not yet listed upon the large exchange, or securities not traded in there; although any security may be dealt in upon the ''curb.'' Many regular stock exchange houses in New York conduct a ''curb'' department. Marginal transactions in only the very best ''curb'' securities are permitted by most houses. There is no fixed rate for commissions on ''curb transactions.''

CURB BROKER or **CURBSTONE BROKER.** One who transacts business upon the ''curb'' or by going from office to office, and who is usually not a member of the stock exchange.

CURTAILING A NOTE. This is done by making a partial payment upon a note when due, or by giving a new note for the lesser amount after such a payment has been made. The same effect would be gained by making partial payments from time to time upon a ''demand note.''

DAILY BALANCES. Deposits of a certain amount are encouraged by this method. Depositors whose ''daily balances'' are over a certain amount—perhaps $300 or more—are allowed interest on them by most trust companies and occasionally by other banking institutions. That is, if it is found at the close of a business day that the total amount which a depositor has had to his credit unchanged for the preceding 24 hours equals $300, or whatever the amount agreed upon may be, interest for the day is allowed upon such an amount on sums evenly divisible by $100, but not for the fractional amounts above the even hundreds. No interest is allowed for the day if the deposit is less than the agreed amount.

DEBENTURE. Although the security ordinarily understood by this term is ''debenture bond,'' it is used of municipal issues such as we call ''bonds'' throughout Great Britain and her colonial possessions in general. Where there is no ''trust deed'' securing the issues of railroads in Great Britain they are called ''debenture issues.'' In Canada ''debenture'' is used of a municipal issue, ''bond'' of a corporation security.

DEBENTURE MORTGAGE. Comparatively few of these investments are dealt in at present. Formerly, if a ''farm mortgage company'' wished to issue ''debentures,'' it would place with some trust company, perhaps $110,000 par value of mortgages upon real estate, and then issue ''debentures'' (or ''debenture mortgages'') worth $100,000, with a rate of interest smaller than that upon the original mortgages. In buying one of these, the investor was supposed to run less risk than in purchasing any specific mortgage.

DEED. In law, any instrument bearing a seal. In common usage, a sealed document (ordinarily a printed form filled out in writing) whereby the title of real estate is transferred from one to another. There are two kinds of deeds generally used in conveying real

estate. By a ''quitclaim deed,'' the one giving it transfers only his own right and interest in the property, and in no way holds himself responsible for any defects in the title. By a ''warranty deed'' the property conveyed is guaranteed by the party giving the deed to be free from any defects of title, and if any such are found, the one accepting the deed is entitled to recover.

DEFERRED DIVIDEND. One not payable until the end of a certain time or until some definitely named event has occurred. Used by life insurance companies of the dividends kept by the company and paid to the policyholders at intervals of perhaps twenty years.

DELIVERIES. Upon the New York Stock Exchange, securities sold for ''cash'' must be delivered before 2.15 P. M. on the day sold, except on the half holidays observed by the Exchange, when the time limit is 11.30 A. M. They must be delivered before 2.15 P. M. on the following business day, if sold in the ''regular way.'' Should the securities or any portion thereof not be delivered before the time specified, they may be brought ''under the rule.'' If the buyer refuses until the following day a delivery offered after hours, interest for the extended time may not be demanded by the seller.

DEMAND LOAN or **CALL LOAN.** With this form of note or promise to pay, the lender has the right to demand payment at any time, and the borrower has equal right in making payment. In each case Sundays and legal holidays are excepted and payment will presumably not be made nor required on the same day the note is given. In New York notice that payment is to be made or demanded is usually given before 1 P. M. and payment made before 2.15 P. M. on the same day. Friday loans generally hold over until Monday. A ''demand note'' is payable without ''grace,'' and bears legal interest after payment has been demanded, unless otherwise stated in the note.

DEMURRAGE. The per diem charge made when a car, vessel, or any such vehicle of transportation is delayed beyond the time allowed, for either loading or unloading.

DEPOSIT. Made when a person gives into the safekeeping of an individual, bank, or other corporation, securities, money, titles to money, or anything of value. ''Pay to the order of the Third National Bank of Springfield, Mass.,'' followed by the signature of the depositor, is the simplest form of indorsing checks for deposit. Those who carry a deposit ''subject to check'' should beware of an ''overdraft.'' Banks usually credit checks to the depositor at once, even though not able to collect them for several days, but sometimes they are unable to collect them at all, and then the checks are returned and charged against the depositor's account.

DEPOSITS (''BANK STATEMENT''). Money itself is not necessarily understood by ''deposits'' as referred to under ''Bank Statement.'' The increase in deposits following an expansion of loans is explained by the fact that the amount a depositor wishes to borrow from his bank is accredited to his account, instead of being paid to him in cash. Credit is the base of such proceedings, and its importance in connection with financial and business affairs should be kept continually in mind. The amount to the credit of the government, itemized as ''United States Deposits,'' is shown separately by the statement of the associated banks of New York, enabling the ''reserve'' required to be estimated. When not so divided, everything to the credit of others which may be withdrawn is included in ''deposits.''

DEPRECIATION. The falling off in the value of property, on account of wear and tear, or through machinery becoming antiquated, or in the case of a mine, etc., reduction in the life of a property. Some manufacturing concerns set aside from their profits each year 10 per cent. of the cost value of all the machinery and 6 per cent. of the cost value of the buildings to cover depreciation. The location, etc., of real estate regulates the amount written off for depreciation. Unless the depreciation of the property is counterbalanced by some way of setting aside each year a definite amount for that purpose, it will be found by the share and bond holders of the corporation that their dividends and interest have not been the actual profits of the corporation, but a payment, bit by bit, of their principal sum.

DISCOUNT. A deduction made for interest in purchasing a security not yet due; the difference between the price given and the par or face value. When it is necessary to give for one dollar in gold more than that sum in paper money, the latter is said to be ''at a discount.'' The face value of a note less the ''discount,'' is termed the ''proceeds'' or ''net avails.'' The term ''discount'' is used in Great Britain and continental Europe in much the same way as our ''time money.''

DIVIDEND. A distinctive sum of money, share, or percentage. The term is used in many ways. The profits received by the owners of stock in a corporation, that is, the proportion of its earnings which they receive, are called dividends, and are distributed in proportion to the par value of the stock. The payments received by the creditors of a bankrupt are known as dividends, as are also payments made from time to time to the depositors or shareholders of a bank in liquidation. A certain amount of ''undivided profits'' is usually held as a reserve or ''surplus fund,'' which is virtually equal to an increase in the capital stock. Corporations generally declare dividends at stated intervals, say the first of January and the first of July of each year. A company is said to have ''passed its dividend'' if none is declared at an appointed time.

DRAFT. A written order from one person to another to pay to the order of a third person, a stated sum of money; or bill of exchange. The writer of the order is called the ''drawer''; the one who is to pay the money, the ''drawee,'' and the bank or other party to whom the promise to pay is made, the ''payee.'' Drafts are often made payable to the drawer, when the word ''myself'' is used. If that is done the drawer must indorse it in order to render it negotiable. By indorsement a draft may pass from hand to hand like a note. There are two kinds of drafts, ''time'' and ''sight'' (or demand). If the former, they are presented to the party against whom they are drawn for ''acceptance.'' If ''grace'' is allowed for a ''sight'' draft, it must be presented for acceptance; but an ordinary ''sight'' draft is payable on presentation. The laws of the state where the draft is payable regulate its payment.

EARMARKED. A term used in England to denote gold deposited with the Bank of England for safe custody, but which the Bank may not employ for any purpose of its own. ''Earmarked'' gold is held on behalf of the government of India, as well as of the National Bank of Egypt, and notes are issued both in India and Egypt against this security.

EXCHANGE. A method of settling accounts or making payments between parties residing at a distance from each other. When the instrument is drawn in one country and payable in another, it is called ''foreign exchange''; when drawn and payable in the same country it is termed ''domestic exchange.'' In England the latter is known as ''inland exchange.'' In the State of Michigan the term ''foreign exchange'' applies to all bills drawn or payable in any other state of the Union, as well as in any foreign country. A in New York owes B in London $1,000. B in London draws a ''bill of exchange'' on A in New York and deposits it with his London banker. Suppose on the other hand, C in London wishes to remit $1,000 to D in New York; by purchasing in effect the order drawn on A, the transaction is simplified, one debt being made to offset the other. In practice the London banker would forward the bill drawn by B to his New York agent for collection, the agent holding the sum at the London banker's disposal. C therefore would be given an order against the New York agent for $1,000, so there would be no necessity for any actual money being shipped at all. The price of ''exchange'' is determined by supply; if there is too much, ''exchange'' is at a discount; if too little it is at a premium. The final adjustment of ''exchange'' is made by gold; that is, when more money is to be remitted than is covered by available bills of exchange, bullion is shipped to make up the difference. London is the chief financial center for international business, and if, for instance, a merchant in New York wished to make a payment to a firm in China or Brazil, he would purchase a bill of exchange on London. ''Exchange'' quotations are recorded in the newspapers; e. g. ''Sterling 4.87¾'' signifying that $4.87¾ must be given in order to purchase ''exchange'' on London for one pound sterling. ''Domestic'' business is conducted in much the same manner, New York being the common financial center for ''domestic exchange.''

EXPRESS MONEY ORDERS. This method of remitting money by mail differs from ''postal money orders'' in several ways, no written application is

needed. They may pass from one person to another by continual indorsement, as they are unlimited in number, and if not presented within one year are still valid. Without the necessity of a duplicate being forwarded by the issuing office, they are payable upon presentation and at all offices of the company—not as by government method, at some special office. The rates are practically the same as those of the United States Post Office and sums up to $100 may be sent by one money order.

FACE VALUE. The principal. The value of a security as it appears in the security itself, without regard to any coupons.

FEE SIMPLE. Term used of a landed estate which belongs to the owner, his heirs, and assigns forever.

FIAT MONEY. Money issued by a government having the supposed power of forcing its acceptance in payment of debts within its own dominions, or which it declares shall be accepted as legal tender at its face value. ''Fiat money'' as commonly understood has no real value, or at the most is not worth its face value, in which case the ''fiat money'' is the difference between the real and the face value.

FIDUCIARY. Involving trust or confidence, especially of a financial nature. Banks, trust companies, etc., are ''fiduciary institutions.''

FINANCE. To furnish the funds required for an enterprise is to finance it.

FINANCIAL BILL. Called also the ''Currency Act'' and the ''Gold Standard Act.'' This Act of Congress, approved March 14, 1900, included in its purposes the refunding of the public debt; maintaining the parity of all forms of money coined or issued by the United States; the defining and fixing of a standard of value, which last was declared to be the dollar, consisting of twenty-five and eight tenths grains of gold, nine tenths fine, all other forms of money coined or issued by the United States to be maintained at a parity of value with this standard under the jurisdiction of the secretary of the treasury.

FINE GOLD. That free from impurities. The United States Mint price of an ounce of fine gold is $20.672, which equals its value in England of 84s. 11.45d.

FIRST AND GENERAL MORTGAGE BONDS. An issue secured by a ''first mortgage'' on part of the property and a ''general mortgage'' on all of it.

FIRST MORTGAGE. A mortgage having prior claim or preference over others that may be placed upon the same property.

FIRST MORTGAGE BOND. A bond secured by a first mortgage and having first claim upon the earnings of a corporation.

FIRST MORTGAGE TRUST BOND. Under certain conditions this form of ''collateral trust bond'' may be indirectly a first mortgage; for it is one whose security is a deposit of other bonds, they, in turn, being secured by a first mortgage.

FIRST UNITED STATES BANK. In 1791, Congress granted a charter authorizing a United States Bank, its object being to take public money on deposit, regulate the currency, and act as official agent of the government. Its capital was $10,00,000, and at one time its circulation was about $4,500,000 and its deposits about $8,500,000. The government held one fifth of the capital, the public at home and abroad, the balance. The foreign holders were not allowed to vote by proxy, and so, although in the majority, could not obtain control. The right of inspection was held by the secretary of the treasury. So long as notes were kept repayable in coin, they could be received for public dues. The main office was in Philadelphia, branches being established in most of the important cities. The charter, obtained through the efforts of the first secretary of the treasury, Alexander Hamilton, was for only twenty years, and although the bank was a very successful institution, its constitutionality had been questioned, political opposition to its return was excited, and the renewal defeated. The bank, liquidating, returned to the shareholders $434 for each $400 share.

FIVE TWENTIES. Bonds subject, at the pleasure of the issuer, to redemption after five years from date of issue, but not due until twenty years therefrom.

FIXED CHARGES. As generally understood, the ''fixed charges'' of a corporation include rentals, taxes, insurance, interest upon its bonds and floating debt, and sinking fund, if any, although this last may be shown under a separate heading. Occasionally the first three items are given under a separate heading, but unless they are included in ''operating expenses'' this should not be done. Insurance is placed by railroad companies under ''general expenses.'' By some prominent accountants only ''bond interest, taxes, and rentals'' are considered as ''fixed charges''; but on permanent property at least, fire insurance and ''sinking fund'' should be included.

FLOOR. Where trading is done; used in connection with an exchange.

F. O. B. Stands for ''free on board,'' meaning that no extra charge will be made for packing or for delivery on board a vessel or car.

FORCED LIQUIDATION. Used on the stock exchange when, to obtain necessary funds, owners of stock are compelled to convert the same into cash.

FORCED SALE. The compulsory sale of a debtor's property by a creditor, or mortgagee; the amount received being its ''forced sale value.''

FORECLOSURE. If the interest or principal of a debt secured by a mortgage is not paid by the ''mortgagor,'' or if some other condition set out in the mortgage is not fulfilled by him, the property so secured may be taken and sold to cover the debt. After the foreclosure expenses, the indebtedness secured by the mortgage, and other liens have been satisfied, the ''mortgagor'' receives the balance if any. The power to sell is contained in the mortgage itself in most states, but in a few such a sale is prohibited, and an order from the court must be obtained.

FOR THE ACCOUNT. In England securities purchased for delivery on ''account day,'' as the ''fortnightly settling-days.'' ''For money'' is the term used of a security bought for immediate delivery.

FULLY PAID or **FULL PAID.** Further payment may not be legally demanded; there is no more due. When a stock has been issued in exchange for its face value in cash, property, or other equivalent, it is fully paid.

FUNDING. Providing a fund for the payment of the interest or principal of a debt—usually of the unbonded debt of some public body. For instance, if a city cannot pay its outstanding debts, which are in the form of notes due at different times, it must either renew or extend them, which is expensive, or else it may issue bonds, and pay off the notes by this method of ''funding.'' A saving to the city will be made, as the money is usually obtained at a lower rate of interest.

GARNISHMENT (GARNISHEE). Called in Massachusetts ''trusteeing.'' This term is used when property or credits of a debtor held for or owed him by some one else are attached for payment. If Smith has been unable to collect a sum owed him by Grant, by a legal process he attaches the latter's bank account for the amount due; in other words, he ''garnishees'' the account.

GOLD BANKS. None of these are in existence today, owing to the Act of February 14, 1880, which authorized the conversion of ''gold banks'' into ''currency banks.'' But under the National Banking Act, associations called ''Gold Banks'' or ''National Gold Banks,'' to issue bank notes payable in gold, may be and have been formed. Following the rule for taking out ordinary circulation, such banks must deposit with the treasurer of the United States interest-bearing bonds, *payable in gold*, but not more than 80 per cent. of the par value of the bonds deposited. These notes are redeemable in gold coin of the United States and are payable in the same upon presentation at the bank of issue.

GOLD BASIS. In a country that is on a ''gold basis,'' the monetary standard is gold, and values are measured in the same way.

GOLD BONDS. This term is used in America of bonds that may be paid in United States gold coin of the fineness and weight of the present standard.

GOLD CERTIFICATES. The secretary of the treasury has been authorized by the United States government to receive deposits of gold coin or bullion of $20 or over, for which he issues certificates, or receipts, each equal to not less than $10, and which the treasurer and all assistant treasurers of the United States may redeem in gold. If the amount of gold coin and gold bullion in the treasury reserved for the redemption of United States notes falls below one hundred million dollars, the issue of gold certificates must be suspended by the secretary of the treasury, who may also suspend such issue when and for as long as the aggregate amount of United States

notes and silver certificates in the general fund of the treasury is greater than $60,000,000. To take care that at least one fourth of all outstanding certificates are in denominations of $50 or less is also the duty of the secretary of the treasury. The gold certificates in circulation amounted to $7,963,900 in 1880, $200,733,019 in 1900, and $788,464,309 in 1908. These may be used as a part of a national bank's reserve; are receivable for taxes, customs, and all public dues, but are not legal tender.

GOLD COIN OF THE UNITED STATES. Redeems Gold Certificates, Treasury Notes of 1890, and United States Notes. Issued by the treasurer of the United States and all assistant treasurers. If not below the standard weight and limit of tolerance prescribed by law, it is legal tender at its face or nominal value for all public and private debts. It is legal tender in proportion to its weight, if below the standard and limit of tolerance.

GOLD COINAGE. No charge is made for the coinage at any of the United States mints, for the benefit of the depositor, of gold bullion of standard equality. If it is not standard, a charge for refining, parting, copper alloy, etc., is made. Gold bullion of practically any amount is received for coinage by the mints, although legally they may refuse less than $100 worth.

GOLD EXCHANGE. Organized in 1864 as a result of speculation in gold during the Civil War. The memorable collapse known as "Black Friday," caused by a bull movement in gold, took place in the "Gold Room" as it was called.

GOLD PRODUCT OF THE UNITED STATES. The production of gold increased from 3,892,480 ounces, valued at $80,464,700, in 1904, to 4,265,742 ounces, valued at $88,180,700, in 1905, and to 4,565,333 ounces, valued at $94,373,800, in 1906, and decreased in 1907 to 4,374,827 ounces, valued at $90,435,700, a loss in 1907 of 190,506 ounces in quantity and of $3,938,100 in value.

GOLD PRODUCT OF THE WORLD. The production of gold since the discovery of America is estimated as follows:—

Years.	Gold.	Years.	Gold.
1492–1520	$107,931,000	1892	$146,298,000
1521–1560	204,697,000	1893	157,494,800
1561–1600	189,012,000	1894	181,175,600
1601–1640	223,572,000	1895	198,763,600
1641–1680	239,655,000	1896	202,251,600
1681–1720	313,491,000	1897	236,073,700
1721–1760	580,727,000	1898	286,879,700
1761–1800	511,675,000	1899	306,724,100
1801–1810	118,152,000	1900	254,576,300
1811–1820	76,063,000	1901	262,373,300
1821–1830	94,479,000	1902	296,737,600
1831–1840	134,841,000	1903	325,961,500
1841–1850	363,928,000	1904	346,892,200
1851–1860	1,332,981,000	1905	380,288,700
1861–1870	1,263,015,000	1906	401,973,200
1871–1880	1,150,814,000	1907	410,436,600
1881–1890	1,059,892,000		
1891	130,650,000	Total,	$12,491,839,300

GOLD RESERVE. With a view to preserving the equality of all forms of governmental money, and being in a position to redeem all the government legal tender notes at par on presentation, a "gold reserve" of $150,000,000 is kept by the secretary of the treasury in accordance with an Act of Congress, 1900. United States Government Bonds would be issued to replenish the reserve should it fall below $100,000,000.

GOOD WILL. The prospective material value of a business as a profit-producing enterprise, the future turnover being gauged by the results to date and the likelihood of their continuance. Defined by some as the benefit or advantage, beyond the mere value of capital, funds, or property used, acquired by an establishment. The bonded debt of a plant less its valuation at forced sale is another definition.

HEAVY. The market is heavy when owing to a steady advance too many securities are offered and so cause a fall in price.

HEDGE. To lessen a risk by speculating or wagering on two opposite chances; to reduce anticipated loss by selling or buying.

HIGH FINANCE. Extensive jugglery with other people's money.

HOLDING COMPANY. A financial combination "holding" or owning the shares of another company or companies, in order that through the ownership of their stock it may control the "sub-companies," each of which keeps its individual existence, but with managing officials appointed by the "holding company." Maine, New Jersey, and West Virginia have enacted laws especially to attract such companies, and they are generally incorporated in one of these states. The object, as a rule, is to practically consolidate two or more companies where it would not be possible to bring about actual consolidation by acquiring all the outstanding stock, or where a direct consolidation would be illegal.

IMPROVEMENT MORTGAGE BONDS. Commonly understood to refer to a "junior mortgage." An issue of bonds to provide funds for additions, betterments, improvements, etc., is secured by an "improvement mortgage." The issue is usually large enough to replace earlier mortgage bonds and also to provide for future improvements. The term "improvement bonds" is often used of "street improvement" and "public improvement" bonds among municipal issues.

INACTIVE ACCOUNT. A bank account not often credited with deposits, and against which checks are drawn at long intervals. Also used of a broker's account showing that the customer's purchases and sales are infrequent.

INACTIVE STOCKS OR BONDS. Securities difficult for the public to find the market value of, as they are bought and sold very irregularly, and are hardly ever quoted.

INCOME. In finance, the term is usually restricted to the yearly monetary return from investment; and interest return from real estate, mortgages, stocks, bonds, or from any money invested outside of one's own business.

INDORSE. The "payee" is the person to whom a draft, note, or check is made payable. To make any one of these of value to some other person, the "payee" indorses it by writing his name on the back exactly as it is written on the face. If the check is made payable to "J. Stanley Bridge," the back must be signed that way, and not "James S. Bridge" nor "J. S. Bridge." Should the face of the note give the wrong initial or otherwise be in error, and a new check issued in the right form be not easily obtainable, the "payee" may sign his correct name in addition to the one as given on the face of check. A check drawn to "Mrs. Frank Allen" should be similarly indorsed by her and her own name "Bertha Allen" written underneath. Should the holder of a check that has passed through the hands of several people, having been indorsed by each in turn, find upon presentation at the bank for payment that there is no deposit to meet it, he may fall back upon any one of the previous indorsers, not necessarily upon the one immediately preceding. For it must be remembered that the indorser of a check, draft, etc., may be held liable for its amount, unless he has added the words "without recourse," which may sometimes, but not always, be done.

INDORSEMENT IN BLANK. Only the name of the indorser is written upon the back of such an instrument, making it good in the hands of any legitimate holder. By writing the name directly above the indorsement the holder may make it payable to himself or to any one he wishes.

INDORSEMENT IN FULL. On the back of this instrument is written the name of the party to whom it is indorsed for payment, followed by the name of the indorser.

INDORSER. A person who becomes liable for the payment of a note, check, etc., by writing his name across the back, thus indorsing it.

INHERITANCE TAX. A state tax upon property imposed on inheritance. Upon assuming the duties of their offices, executors and administrators should at once, in states where an inheritance tax has been established, examine the laws in regard thereto, or take competent legal advice concerning them. The two kinds of such taxes are "direct inheritance" and "collateral inheritance." Property descending directly to a child or other lineal descendant, or to very near relatives such as father, mother, brother, husband, or wife, is subject to "direct inheritance tax," while all other inheritances come under the "collateral inheritance tax." The latter is in force in most of our

states, while the former is in force in England and is being rapidly adopted here. As a rule, the tax increases with the distance in relationship and with the amount of property inherited. Legacies to educational, charitable, and religious institutions within the state which imposes the tax are usually exempted.

INSTALLMENT. The payment made upon a security at regular intervals until the full amount is satisfied.

INTEREST. Premium paid for the use of money is called the "interest," and is generally expressed in percentage, based upon a year. If the use of $100 for six months brings $2.50 interest, that is the same as $5 for one year, and is expressed as "5 per cent." or "5%." The New York method of computing interest is as follows: the actual number of days elapsed is taken in reckoning the time. An interest table based on 365 days in the year is used; that is, the rate for one day is found by dividing the yearly interest rate by 365. By the Boston method, as it is called in that city, an interest table based on there being 360 days in the year is used, the time elapsed being computed as so many months and so many days,—30 days reckoned to each month; the rate for one month is 1-12 the yearly rate. The employment of both methods of calculation often leads to confusion on the part of the two parties to a transaction. The legal day terminates at midnight, hence any loan of money through the midnight hour calls for one day's interest. A loan at 4 P. M. repaid early the next morning would be reckoned as one day. Because seven midnights have passed between September 22 and September 29, the time is reckoned as seven days. This explains why the day on which the loan is made is not included in computing the number of days for which interest runs. The taking of interest for the use of money was not made legal in England until 1546, the rate being fixed at 10 per cent. "Interest" is used for the speculative side of the market, e. g. "long" interest, meaning those long of stock. It is also used in connection with one's ownership in a property.

INTERIM CERTIFICATE. Until the properly printed, lithographed, or engraved certificate for a given security is ready for the purchaser, a temporary or "interim" certificate is issued to him, sometimes by the corporation itself, but more often by some trust company.

INVENTORY. An itemized list or schedule of goods or property owned with their estimated market value; the annual account of stock on hand, furniture, and fixtures, etc.

INVESTMENT. The purchase of some species of property for the purpose of obtaining interest return upon money. It differs from speculation in that the safety of the principal is the first consideration, and any increase in the value thereof only secondary. Investment may be strictly defined as giving the possession and control of one's assets to another.

IRREDEEMABLE DEBENTURES. Those which, differing from bond issues, have no fixed dates of maturity, but, more like a stock, are perpetual and "irredeemable." In Great Britain railroads suffer from the disadvantage of "irredeemable debentures," their high interest rate being a perpetual charge upon the companies, the irredeemable feature preventing the "refunding" of the issue into lower interest-bearing securities.

JOINT AND SEVERAL NOTE. A note reading "We jointly and severally promise to pay," and signed by each of the parties or by a firm, as "Richards & Co.," is a "joint and several note," as is also an ordinary promissory note beginning "I promise to pay," if signed as above. Each signer is liable not only for his own share of the payment, but for the entire amount in the event of the other signer or signers being unable to pay.

JOINT NOTE. In such a note the words "joint and several" must not be inserted in the wording, "We promise to pay." It is signed by two or more persons or by a firm, as Clark & Somer. The holder must get judgment against all the signers if the note is not paid at maturity, taking out a "joint" execution against them all. He can then satisfy the judgment from the property of any one of the signers.

JOINT STOCK COMPANY. A term used more often in Great Britain than in America. The ownership in such a company is usually represented by shares of stock. These companies are of two kinds. One includes all corporations where the stockholders own the shares into which the joint stock or capital is divided. The other kind is an exaggerated form of partnership. Shares of stock are not owned, but a certificate showing his joint interest in the establishment is given to each participant, all of whom are, as in a partnership, personally liable for the debts of the company—not having the limited liability of a shareholder in an ordinary corporation. But unlike a partnership, each certificate owner has not the right to transact business for the company and the death of a member does not end the partnership. Some of our large express companies—Adams, United States, etc.—organized with the right to issue transferable shares representing beneficial interests in the company, are good examples of this second class.

JUDGMENT DEBT. A debt legalized by decree of a court.

JUDGMENT NOTE. An ordinary promissory note containing a power of attorney to appear and confess judgment for a debtor, given by him when he wishes to avoid having a lawsuit brought against him.

KITING, KITE FLYING, or **KITING CHECKS.** Accommodation paper used to sustain an imaginative balance in a bank, the custom which banks have of at once giving a depositor credit for uncollected checks of other people, being responsible for this practice. Two persons exchange checks for the same amount, which are properly deposited in the respective banks. But each has immediate use for a part or all of the money, expecting that the checks will not be collected before the following day, and planning to make good the amount before that time. If a man has two bank accounts, he may follow the same method by depositing in one bank a check against the other, thinking to make it good at the latter bank the next day.

LATIN UNION. The franc is adopted as a common monetary unit by France, Italy, Switzerland, Belgium, and Greece, which form the Latin Union. The unit in Italy has the same value as the franc, but is called the "lira"; the "drachma" is the term used in Greece. The gold franc equals 19.3 cents United States money.

LAWFUL MONEY. Money declared by the government to be legal tender in payment of obligations, and which cannot be refused in payment of a debt unless expressly stipulated otherwise in the contract. "Every form of money which is endowed by law with the legal tender quality." Under the revised statutes of the United States, national bank notes, silver certificates, and gold certificates are not so endowed. "Lawful money" includes gold coin, silver dollars, United States notes and Treasury notes.

LEGAL RATE OF INTEREST. States have established a fixed rate of interest, and any higher charge may be penalized by the courts as "usury." By charging borrowers a commission in addition to the interest, the legal rate is often evaded. The legal rate in some states is designed merely that creditors be not allowed to exact unfair rates from debtors, and the borrower and lender may agree upon any rate of interest without interference. On a "collateral call loan" of $5,000 or more, in New York State any rate of interest is permitted by law. Interest greater than the legal rate of the state wherein it is located cannot be charged by any national bank, and it may not charge more than 7 per cent, if there is no state limitation. All interest above 10 per cent. was declared unlawful during the reign of Henry VIII., this being reduced to 8 per cent. during the reign of James I., and to 5 per cent. during the time of Queen Anne.

LEGAL TENDER. Money which the government declares lawful in payment of a debt, and which must be accepted by a creditor. The legal tender qualities of all forms of money in the United States are stated by law as follows: "Gold coins, standard silver dollars, subsidiary silver, minor coins, United States notes, and Treasury notes of 1890 have the legal tender quality as follows: Gold coin is legal tender for its nominal value when not below the limit of tolerance in weight; when below that limit it is legal tender in proportion to its weight; standard silver dollars and Treasury notes of 1890 are legal tender for all debts, public and private, except where otherwise expressly stipulated in the contract; subsidiary silver is legal tender to the extent of $10, minor coins to the extent of 25 cents, and United States notes for all debts, public and private, except duties on imports and interest on the public debt. Gold certificates, silver certificates, and national bank notes are non-legal tender money. Both kinds of certificates, however, are receivable for all public dues;

and national bank notes are receivable for all public dues except duties on imports, and may be paid out for all salaries, demands, etc., owing by the government within the United States, except interest on the public debt and in the redemption of the national currency.'' Only gold and silver coins were here recognized as legal tender before the Civil War. When money became scarce in Massachusetts during Colonial days, wampum was made legal tender. In Virginia, tobacco was so used, and in Maryland, tobacco and Indian corn.

LETTER OF CREDIT. It is unnecessary for persons traveling to carry with them large sums of money, for by a letter of credit (issued in favor of more than one person if so desired) they may obtain money at any of the important points throughout the world, and in the coin of the country where desired for use. Certain banks and banking houses make a practice of issuing such letters. Approved securities or money equal to the amount of credit desired are deposited, and a small sum paid for the accommodation. The customer is then given a written order which, when presented at certain banks or banking houses in the cities where the traveler expects to go, entitles him to receive sums of money whose total shall not exceed the face value of the letter of credit. The signature of the holder is the means of identification. ''Circular'' or ''foreign traveler's letter of credit'' are the terms for those issued for use outside of the country. ''Domestic traveler's letter of credit'' for those within. ''Commercial letters of credit'' ''foreign,'' or ''domestic,'' are also issued; for example: a merchant in New York purchases merchandise in Hongkong. Procuring a ''commercial letter of credit,'' he forwards it to the seller in Cairo, who, upon presentation in his city to the banking house named in the ''letter'' may, if properly identified and presenting documents showing the actual shipment of the goods, obtain the money.

LIEN. A mortgage or other claim against property held by the possessor until his demand or debt is discharged. The ''first lien'' is equal to a first mortgage; that is, no one has a prior claim. The ''second lien'' equals a second mortgage, etc.

LIMITED or **LIMITED COMPANY.** Limited liability, the shareholders being free from personal liability beyond the sum invested.

LIMITED PARTNERSHIP. The partner who manages the business of such a firm must be fully liable for all its debts. The others are ''special partners,'' liable for the indebtedness of the firm only so far as the amount contributed by them to the capital, taking no active part in the management of the business. The idea of such a partnership was borrowed from the French. In 1822, it was first introduced in this country by the legislature of New York.

LIQUIDATION. The converting of one's assets and accounts into cash to pay off one's indebtedness as far as possible; the winding up of a business. On the Stock Exchange it is used when stockholders sell out their stock for money. In either case, the liquidation may be either ''voluntary'' or ''forced.'' ''Liquidation on speculative accounts'' means the closing out of such accounts.

LONDON QUOTATIONS. Only the bid and asked prices are given in London, while with us the number of shares, etc., traded in and the prices realized are given. The following shows how the stock exchange quotations are given in fractions of one pound:

1-32	equals	0 shillings	7½ pence	
1-16	equals	1	3	
3-32	equals	1	10½	
5-8	equals	12	6	etc.

LONG. If a person owns more of a security than he has contracts to deliver, he is ''long'' on that security. In reference to ownership, the word is used simply as the opposite of ''short.'' An advance in price was anticipated by those who are ''long.'' If plenty of stock was offered for sale and profits were taken by the holders, the expression ''Much long stock came out'' is used.

MAINTENANCE OF WAY AND STRUCTURE. This heading is included under the general classification of ''Operating Expenses'' as laid down by the Interstate Commerce Commission. It comprises: repairs and renewals of bridges, buildings and fixtures, cattle guards, culverts, docks, fences, railroad crossings, signs, telegraph and wharves; renewals of rails and ties, repairs of roadway; printing and stationery in connection with these; also minor expenses (''Other Expenses'') for keeping the line in good condition.

MARGIN. The difference between the cost and the selling price of a given security. ''Marginal'' transactions are prohibited on the London Stock Exchange, as the custom lends itself to much abuse. Instead of buying the stock outright, the investor deposits so much money, possibly at the rate of $10 a share, with a special broker, and the latter ''carries'' the stock on commission, crediting his customer with any advance and debiting him with any fall in the market price. It is understood that in the event of a decline in price, the client will supply more cash to prevent his margin from being ''wiped out.'' More shares of stock can be bought in this way than if purchased outright, affording a greater profit if stock advances, but, accordingly, a greater loss if it declines. Many stock exchange failures have been caused by ''marginal dealings.'' For to handle such quantities of stock as are required by this business, the broker is probably obliged to borrow large sums. In a panic, he may be called upon for more ''margin,'' and calling in turn upon his clients, who are unable to give it, the failure of the broker results. The average rate charged by brokers for carrying marginal accounts is perhaps 4½ per cent. to 5 per cent., but it varies largely according to circumstances.

MARKET. The demand as indicated by price offered or obtainable. The term is of constant occurrence in financial parlance. The price or rate of purchase is referred to by ''the market is high'' or ''low''; to ''sell at the market'' means to sell at the best price obtainable. The place of sale, without reference to price or rate, is indicated by ''sell in the market.'' The prevailing rates at which money can be borrowed is implied by the ''money market.'' When prices are low and purchasers difficult to find, the ''market is bad.''

MATCHED ORDERS. Orders to buy and sell the same stock at the same price, with a view to ''manipulating'' the market, by giving an artificial activity.

MECHANIC'S LIEN. A lien on real property allowed by law to the suppliers of material and to workmen engaged in the construction or alteration of buildings. A claim by the contractor would take precedence over such a lien in some states, while in others the contrary is true.

MIDDLEMAN. An intermediary who negotiates between a buyer and a seller, receiving a remuneration for his services. Factors, agents, and brokers are three classes of ''middlemen.''

MONETARY SYSTEM OF THE UNITED STATES. The following tables will clearly illustrate the present monetary system of the United States:—

	Gold Coin.	Standard Silver Dollars.	Subsidiary Silver Coin.	Minor Coin.
Weight.	25.8 grains to the dollar.	412.5 grains.	385.8 grains to the dollar.	5 cent piece: 77.16 grains. 1 cent piece: 48 grains.
Limit of issue.	Unlimited.	Coinage ceased in 1905.	Needs of the nation.	Needs of the nation.
Denominations.	$20, $10, $5, $2½.	$1.	50 cents, 25 cents, 10 cents.	5 cents, 1 cent.
Legal tender.	Unlimited.	Unlimited, unless otherwise contracted.	Not to exceed $10.	Not to exceed 25 cents.
Receivable.	For all public dues.	For all public dues.	For all dues up to $10.	For all dues up to 25 cents.
Redeemable.	.....	.....	In ''lawful money'' at the Treasury in sums or multiples of $20.	In ''lawful money'' at the Treasury in sums or multiples of $20.

PAPER CURRENCY.

	Gold Certificates.	Silver Certificates.	United States Notes.	Treasury Notes of 1890.	National Bank Notes.
Limit of Issue.	Unlimited for gold coin unless gold reserve falls below $100,000,000.	Quantity of silver dollars coined, $562,173,530.	$346,681,016.	No further issues; volume steadily diminishing by redemption with silver dollars.	Not to exceed capital and surplus of banks.
Denominations.	$10,000, $5,000, $1,000, $500, $100. $50, $20, $10.	$100. $50, $20, $10. $5, $2, $1.	$1,000, $500, $100, $50, $20, $10, $5. $2, $1.	$1,000, $100, $50, $20, $10, $5, $2, $1.	$1,000, $500, $100, $50, $20, $10, $5.
Legal Tender.	Not a tender.	Not a tender.	For all debts, public and private, except customs and interest on public debt.	Unlimited, unless otherwise contracted.	Not a tender.
Receivable.	For all public dues.	For all public dues.	For all public dues.	For all public dues.	For all public dues except customs.
Redeemable.	In gold coin at the Treasury.	In silver dollars at the Treasury.	In gold at the Treasury.	In gold at the Treasury.	In "lawful money" at the Treasury, or at bank of issue.

PAPER CURRENCY OUTSTANDING JUNE 30, 1908.

Denomination.	United States Notes.	Treasury Notes of 1890.	National Bank Notes.	Gold Certificates.	Silver Certificates.	Total.
1 dollar.....	$1,861,342	$434,381	$343,878	.....	$112,805,795	$115,445,396
2 dollars.....	1,408,026	298,144	164,470	.....	56,043,742	57,914,382
5 dollars.....	75,316,465	1,144,395	147,594,415	.....	263,629,282	487,684,557
10 dollars.....	203,317,936	1,758,060	288,381,100	$98,177,160	18,195,111	609,829,367
20 dollars.....	17,171,022	895,170	262 533,280	257,238,104	14,773,290	492,610,866
50 dollars.....	2,975,775	22,550	15,369,150	50,667,755	8,041,860	80,077,090
100 dollars.....	7,315,450	269,300	40,787,300	72,814,850	787,420	121,974,320
500 dollars.....	5,604,000	.....	93,000	19,524,500	30,500	25,252,000
1,000 dollars.....	32,701,000	160,000	24,000	65,451,500	43,000	98,379,500
5,000 dollars.....	.....	.....	.....	82,150,000	.....	82,150,000
10,000 dollars.....	10,000	.....	.....	173,760,000	.....	173,770,000
Fractional parts.	.....	.....	43,324	.....	.....	43,324
Total.....	$347,681,016	$4,982,000	$698,333,917	$819,783,869	$474,350,000	$2,345,130,802
Unkn. destr.	1,000,000	.....	.....	.....	.....	1,000,000
Net.....	$346,681,016	$4,982,000	$698,333,917	$819,783,869	$474,350,000	$2,344,130,802

COINAGE OF THE MINTS FROM THEIR ORGANIZATION TO JUNE 30, 1908.

Denomination.	First Authorized.	Act Discontinuing Coinage.	Pieces.	Value.
GOLD COINS				
Double eagle ($20)	Mar. 3, 1849	.....	109,123,491	$2,182,469,820.00
Eagle ($10)	Apr. 2, 1792	.....	43,297,578	432,975,780.00
Half eagle	Apr. 2, 1792	.....	64,832,627	324,163,135.00
Three-dollar piece	Feb. 21, 1853	Sept. 26, 1890	539,792	1,619,376.00
Quarter eagle ($2.50)..	Apr. 2, 1792	.....	12,964,502	32,411,255.00
One dollar	Mar. 3, 1849	Sept. 26, 1890	19,499,337	19,499,337.00
One dollar, Louisiana Purchase Exposition	June 28, 1902	.....	250,000	250,000.00
Dollar, Lewis and Clark Exposition ...	Apr. 13, 1904	.....	60,000	60,000.00
Total Gold.....	.....	.....	250,567,327	$2,993,448,703.00
SILVER COINS				
Dollar.....	Apr. 2, 1792 Feb. 28, 1878 (resumed)	Feb. 12, 1873	578,303,848	$578,303,848.00
Trade dollar	Feb. 12, 1873	Feb. 19, 1887	35,965,924	35,965,924.00
Lafayette dollar	Mar. 3, 1899	.....	50,000	50,000.00
Half dollar.....	Apr. 2, 1792	.....	355,768,436	177,884,218.00
Columbian half dollar	Aug. 5, 1892	.....	5,000,000	2,500,000.00
Quarter dollar	Apr. 2, 1792	.....	359,643,016	89,910,754.00
Columbian quarter dollar	Mar. 3, 1893	.....	40,000	10,000.00
Twenty-cent piece	Mar. 3, 1875	May 2, 1878	1,355,000	271,000.00
Dime	Apr. 2, 1792	.....	569,566,601	56,956,660.10
Half dime	Apr. 2, 1792	Feb. 12, 1873	97,604,388	4,880,219.40
Three-cent piece.....	Mar. 3, 1851	Feb. 12, 1873	42,736,240	1,282,087.20
Total Silver.....	.....	.....	2,046,633,453	$948,014,710.70
MINOR COINS				
Five cent (nickel)	May 16, 1866	.....	613,857,091	$30,692,854.55
Three cent (nickel)....	Mar. 3, 1865	Sept. 26, 1890	31,378,316	941,349.48
Two cent (bronze)....	Apr. 22, 1864	Feb. 12, 1873	45,601,000	912,020.00
Cent (copper)	Apr. 2, 1792	.....	156,288,744	1,562,887.44
Cent (nickel)	Feb. 21, 1857	Apr. 22, 1864	200,772,000	2,007,720.00
Cent (bronze).....	Apr. 22, 1864	.....	1,656,264,705	16,562,647.05
Half cent (copper)....	Apr. 2, 1792	Feb. 21, 1857	7,985,222	39,926.11
Total Minor.....	.....	.....	2,712,147,078	$52,719,404.63
Total Coinage.....	.....	.....	5,008,747,858	$3,994,182,818.33

The fineness of United States gold coins is .900 to .916 2-3, silver coins .900; five-cent piece, 75 per cent. copper and 25 per cent. nickel; one-cent piece, 95 per cent. copper and 5 per cent. tin and zinc. Troy weights are used, and while metric weights are by law assigned to the half and quarter dollar and dime, troy weights still continue to be employed, 15.432 grains being considered the equivalent of a gram, agreeable to the act of July 28, 1866. The weight of $1,000 in United States gold coin is 53.75 troy ounces, equivalent to 3.68 pounds avoirdupois. The weight of $1,000 in standard silver dollars is 859,375 troy ounces, equivalent to 58.92 pounds avoirdupois, and the weight of $1,000 in subsidiary silver is 803.75 troy ounces, equivalent to 55.11 pounds avoirdupois. The space required for the storage of 1,000,000 standard silver dollars is 250 cubic feet. The standard silver dollars in the vaults of the treasury and the several subtreasuries, June 30, 1904, amounting to about $462,000,000, required 115,500 cubic feet of space. The commercial value of an ounce of fine silver June 30, 1908, was $0.54282, and the commercial value of the silver in the silver dollar on that date was 41.983 cents.

MORTGAGE. Used of both the instrument by which the mortgage is effected (called the ''mortgage-deed''), and of the act of mortgaging. The mortgage duly signed and sealed is given by the ''mortgagor''—more correctly spelled ''mortgageor'' (the borrower)—to the ''mortgagee'' (the lender) or to a third party who holds it as trustee for the lender. It confers to the latter the right, after following certain formalities, of possessing the property described therein should the borrower fail to meet his indebtedness, in case the mortgagor fails in his obligations.

NARROW MARKET. Used when there are very few transactions in stock or other commodities.

NATIONAL BANK EXAMINER. A person (or persons) appointed by the comptroller of the currency, with the approval of the secretary of the treasury, who is given power to thoroughly examine all the affairs of every national bank, and who must give to the comptroller a full and detailed report of the condition of each bank examined.

NEGOTIABLE. Negotiable paper, from the financial standpoint, should be in writing and signed, containing an unconditional order or promise to pay a certain sum of money at a determinable time to order or to bearer; the drawer should always be named or indicated in a bill of exchange (including check). A ''negotiable'' instrument, such as a check, draft, or note, payable to the order of a person, etc., can be transferred from one person to another by indorsement; a ''non-negotiable'' instrument or security is one which is good only in the hands of the one to whom it was originally issued, except where the corporation or person issuing the same agrees otherwise. If the words ''or order'' are omitted in a note made payable to Charles Willis, it is ''non-negotiable,'' since only to Charles Willis was the note made payable, and he would not have the privilege of transferring his rights to any one else.

NEGOTIABLE SECURITIES. Any investment security possessing the essentials of negotiability, including all forms of commercial paper; drafts, bill of exchange, corporation, municipal, and government bonds.

NEW YORK COTTON EXCHANGE. Founded 1870. The largest exchange in the United States for trading and speculating in cotton.

NEW YORK EXCHANGE FUNDS or **MONEY.** Since New York is the great financial center of this country, payments are constantly being made through that center, causing incessant transmissions of funds between that point and all other points of the country. Therefore New York Exchange is rarely at a discount, and a check on New York is acceptable at all points.

NEW YORK PRODUCE EXCHANGE. Transactions here take place in pork, lard, grain, etc., and since April 15,1907, trading in certain industrial, mining, and miscellaneous securities. But in its ''list'' is not included any security listed upon the New York Stock Exchange. It is similar to the Chicago Board of Trade.

NON-ASSESSABLE. In case of the failure of the corporation, or for any other reason owners of ''non-assessable'' stock are not legally obliged to make additional payments upon the same. National bank notes being ''assessable,'' their owners can be compelled to make further payments, should failure occur. If the stock is ''non-assessable'' that fact is generally stated on the certificate. Assessability or non-assessability is largely regulated by the laws of the state under which the corporation is chartered. ''Double liability'' is all that any stock may carry. If the laws demand the issuance of ''fully paid'' stock, and it can be proved that a stock was not ''fully paid'' when originally issued, showing that fraud exists, assessments may be made.

NO PROTEST. Written on a note or draft to signify ''no protest'' if the instrument be dishonored.

ON CALL. ''Subject to call.'' Referring to money, etc., which may be demanded for immediate payment.

OPTION. A stipulated privilege in time contract of demanding its fulfillment within specified limit.

OUTSTANDING ISSUE. That which a company has already placed upon the market—stocks, bonds, or any other security.

OVER THE COUNTER. Used when sales of securities (particularly bonds) are made without the medium of the stock exchange, directly by bankers. Sales of all descriptions outside the stock exchange.

PAR. Of equal nominal and actual value; the actual face value of any security regardless of its denomination. Par often signifies a value of $100, but not necessarily so; mining stocks, for instance, are often issued in shares of low denomination, that the subsequent manipulations may pass unnoticed. Be sure therefore to find out the actual par value in dollars and cents before purchasing a security, and then, on the basis of a par value of $100 reckon its selling price. The difference in rules between different stock exchanges must also be considered. On the New York Stock Exchange stocks are usually quoted on the basis that either the par value is 100, or else shares sufficient to equal 100 have been put together. On the Boston Stock Exchange quotations are based upon the par value regardless of whether it is more or less than $100.

PARITY OF SILVER. $1.2929, since to be at a par with gold according to the present standard United States ratio of gold to silver (1 to 15.988) pure silver must be worth commercially $1.2929 per fine ounce.

PAR OF EXCHANGE. The coin or standard of value in the country expressed in the coin or standard of another. Gold bullion of an agreed fineness is taken as a basis of calculation. $4.866+ is taken as the ''par of exchange'' between this country and Great Britain, that is, the English ''pound sterling'' is equal to $4.866+ in United States gold coin.

PASS A DIVIDEND. Not to make payment of a dividend at the regular time.

PAYABLE IN GOLD. Bonds and securities on which the borrower undertakes to pay the interest or principal, or both, ''in gold.'' The following wording is generally used in this matter: ''Payable in gold coin of the United States of the present standard of weight and fineness''—thus affording protection should less conservative coining laws be passed during the life of the investment.

PAYABLE ONLY THROUGH THE CLEARING HOUSE. In times of financial distress, it is necessary for banks to retain some actual cash. Therefore, in place of cash, checks stamped ''Through the clearing house,'' ''Payable only through the clearing house,'' or with a similar expression, are sometimes accepted. While a person satisfies the law in regard to legal tender in accepting such a check, he does so as a matter of accommodation, since banks are legally required on demand to pay checks in money which is legal tender. To meet such demands banks must keep some money in their vaults. But by postponing the payment of a check until ''clearing house hour'' of the following business day, possibly no money would be needed, as through the machinery of the clearing house the differences between the banks in time adjust themselves.

PAYABLE TO BEARER. Checks or other negotiable instruments drawn in this way may be passed from hand to hand without indorsement, as they are good in the hands of any bona fide holder.

PAYABLE TO ORDER. ''Pay to the order of Richard Booth,'' ''Pay to Richard Booth or order,'' are the forms used in checks or other negotiable instruments of this kind. To make it good in the hands of any other than Richard Booth, it first must be indorsed by him. Unless the words ''to order'' or ''to bearer'' are specified, the instrument is payable only to the person mentioned therein and to no other; in other words it is not negotiable.

PERSONAL CHECK. One drawn by a depositor, not by a bank.

PERSONAL PROPERTY. Distinguished from "real property." Securities, household furniture, live stock, chattels, all movable property, and harvested crops are included.

PIT. The equivalent of the New York Stock Exchange's "Post." Four portions—called the "Pits"—of the building of the Chicago Board of Trade are set aside for exclusive dealing in grain, wheat, oats, and provisions, respectively.

POINT. The term for one per cent. If a security advances five per cent., it rises five points. One twentieth per cent. per pound equals one "point" in coffee trading, fluctuations being recorded on that basis. A decline of ¼ of a cent per pound of cotton is equal to 25 "points" or $1.25 on each bale, as a cent is divided into 100 "points" in cotton.

POOL. (1) A combination of persons agreeing to buy or sell, increase or depress the price of one or more securities, and to divide the loss or profit. By a decision in the suit of Franklin, Scott & Co., stock brokers, versus certain others, any member of a pool may be held liable for the full extent of its losses. (2) The term is used also of a movement to prevent competition and to insure mutual profit by division of business and territory, and the fixing of a monopolistic price. (3) An agreement as to a division of earnings between competing railways so that the temptations of the big shippers may be resisted, and a stable rate maintained. "Traffic pools" are arrangements for the division of business; "money pools" for the distribution of receipts.

POSTAL MONEY ORDER. A government order for the payment of money, issued at one post office and payable at another. In the United States, a money order for any amount up to $100 may be drawn. International money orders, payable in almost any part of the world, may also be procured. The person desiring to cash a money order must be able to prove his indentity. If wrong payment is made through no fault of the remitter, payee, or indorser, the department will see that the amount is made good to the sender. The law forbids more than one indorsement on a money order; but to identify a payee or guarantee the payee's or indorser's signature, one or more additional names may be written upon the back.

POWER OF ATTORNEY. Written or printed authority given by one person to another empowering him to sign a paper or document, etc., or to otherwise act in his name and stead, the same force and value to be attached as though made by the person delegating the authority. The instrument must be signed and witnessed or acknowledged before a justice of the peace, or commissioner for oaths. The power may be "general" which means that the attorney is empowered to act without restriction, or it may be a "special" power to do some particular act.

POWER OF SALE. If a debt secured by property is not paid, the lender has the right to sell the property, if such a clause has been stipulated. "Power of sale" is occasionally given by will to executors that cash may be realized from the sale of the testator's property.

PREFERRED CREDITOR. Such a creditor is legally entitled to receive payment in full before anything is paid to other creditors not preferred.

PREFERRED SHARES or STOCK. The equivalent of American "preferred stock" in England is "preference shares," and the equivalent of our "common stock" is "ordinary stock." But when this last is divided into two parts, "preferred" is applied to the first part, "deferred" to the second; also referred to as "B" and "A" stocks respectively. They share equally if the company is wound up, but in regard to dividends, the former ranks ahead. A dividend is usually declared upon the "ordinary stock," then the relative amounts for the two classes are stated. These stocks are rarely cumulative, such being referred to as "non-contingent preference stocks."

PREFERRED STOCK. Stock which takes a dividend and has a claim prior to other capital stock. Such comes after the bonds and floating debt, if any, but ranks ahead of "common stock" before which it is issued, and, as the name denotes, over which it has preference. Usually the preferred stockholders have the right to be paid out of the assets of a corporation which is winding up its affairs before the common shareholders receive anything, although in various corporations the form of preference differs, as do also the conditions governing the payment of dividends on "preferred stock." Common stocks generally sell at a lower price than the preferred, although sometimes the earnings of a corporation are so extensive that the former receives a higher rate of dividend and sells at a greater price. Sometimes "class A" and "class B" or "first preferred" and "second preferred" stocks are issued, both ranking ahead of the common shares, but differing from each other somewhat in the nature of their preference.

PREMIUM. The price or percentage of a security above its face or par value. A share of stock selling at 106 would be selling at 6 per cent. or $6.00 per share premium, if its face value were $100; but if the face value were more than $106, the stock would be selling at a discount. If it is necessary to give more than one dollar in some other money for a dollar in gold, the latter is at a premium in relation to that particular money. Currency was at a premium of 4 per cent. in 1893, when it was so scarce that certified checks were given at the rate of $104 for $100 in currency. "Premium" is also used of the price paid for an option; of the payments upon insurance policies; and is understood by "Agio" and "Bonus."

PRINCIPAL. (1) The face value of a bond or any other security on which the interest or premium is calculated. (2) One who commissions another to act for him, as distinguished from an agent.

PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES. The following table shows the approximate distribution by producing states and territories of the product of gold and silver in the United States for the calendar year 1907, in fine ounces, the gold value being $20.671834625323 per fine ounce, and the silver value 66 cents per fine ounce.

State or Territory.	Gold.		Silver.	
	Quantity.	Value.	Quantity.	Commercial Value.
Alabama	1,325	$27,400	600	$400
Alaska	894,424	18,489,400	179,300	118,300
Arizona	128,871	2,664,000	2,903,100	1,916,000
California	815,288	16,853,500	1,590,000	1,049,400
Colorado	1,010,921	20,897,600	11,495,400	7,587,000
Georgia	3,135	64,800	700	500
Idaho	60,754	1,255,900	7,888,400	5,206,300
Illinois	.....	.....	2,900	1,900
Michigan	.....	.....	331,300	218,700
Missouri	.....	.....	25,300	16,700
Montana	167,987	3,472,600	11,129,600	7,345,500
Nevada	745,507	15,411,000	8,280,500	5,465,100
New Mexico	15,964	330,000	599,500	395,700
North Carolina	3,807	78,700	25,200	16,600
Oregon	59,124	1,222,200	96,000	63,400
Phillipine Is.	3,130	64,700	100	100
Porto Rico	58	1,200	.....	.....
South Carolina	2,811	58,100	100	100
South Dakota	200,185	4,138,200	106,600	70,400
Tennessee	184	3,800	58,300	38,500
Texas	48	1,000	305,300	201,500
Utah	247,758	5,121,600	11,406,900	7,528,500
Vermont	.....	.....	3,800	2,500
Virginia	402	8,300	200	100
Washington	12,689	262,300	84,000	55,400
Wyoming	455	9,400	1,600	1,100
Total	4,374,827	$90,435,700	56,514,700	$37,299,700

The production of gold and silver in the United States, 1792-1907, by periods, in fine ounces is estimated as follows:

Years.	Gold.		Silver.	
	Quantity.	Value.	Quantity.	Commercial Value.
1792-1847	1,187,170	$24,537,000	309,500	$404,500
1848-1872	58,279,778	1,204,750,000	118,568,200	157,749,900
1873-1907	84,258,891	1,741,784,000	1,611,830,500	1,351,841,600
Total	143,725,839	$2,971,071,000	1,730,708,200	$1,509,996,000

PROFIT AND LOSS. Sometimes abbreviated to "P. & L." The profits and losses of a concern are given under this heading in bookkeeping, and entered on the credit and debit side of the account as required.

PROMISSORY NOTE. By this the payment by one person to another of a stated sum of money at some future time is promised in writing; frequently called a "note of hand."

PROMOTER. One who plans the organization of a corporation or industry; defined by the New York legislature as "every person by whatever name, who brings together the persons to become interested in the enterprise, aids in securing subscriptions, and sets in motion machinery which leads to the promotion of a corporation." Really the intermediary or middleman between the corporation which needs funds and those having money to invest in securities.

PROTEST. (1) A formal declaration in writing made by a notary public that a negotiable instrument has been dishonored, either by non-acceptance or non-payment. In case of legal action, protesting is good evidence. State laws differ in regard to the necessity for protesting, some holding that the mere fact of presenting is in itself sufficient evidence. To protest an instrument, a notary public again presents it to the one responsible for its payment, on the same day making a note on the paper itself to the effect that it has been dishonored. A certificate of protest is then made out by the notary, who attaching the dishonored paper, writes the fact that he has presented it, the time and place of presentation, and the reasons for protesting. If payment is refused upon presentation by the notary, "notice of protest" should be sent to the last indorser, and through him to any previous indorser. The indorser or maker of the instrument should pay the fee charges of the notary. If it is utterly impossible to make collection, the fees are charged to the holder of the note. If there are no indorsements, it may not be desirable to "protest," in which case the words "waive protest," or a similar expression, may be written on a separate slip of paper and presented with the instrument. A notice of protest mailed at the general post office at the proper time is usually considered by law sufficient notice to the makers or indorsers. (2) A solemn declaration in writing made by the master of a vessel before a consul, or other authorized official to the effect that any damage or loss sustained by a disaster was not the fault of her ship, or any of her officers and crew, but was solely owing to the perils of the sea or to other unavoidable causes. (3) A declaration made by a person that a certain tax or duty which he is called upon to pay is unjustly and illegally demanded, and that its payment, if made at all, was not voluntary.

PROXY. A person formally authorized and deputed to act or vote for another. At a meeting held by the various stockholders of a corporation, officers are elected to whom is delegated the business of the corporation. A stockholder is entitled to one vote for each share, and if he is unable to be present at the meeting, he may authorize a "proxy," to vote his stock for him.

PUT. A privilege which one person buys of another to "put" or deliver to him a certain amount of stock, grain, etc., at a specified price and date. The "put" may be exercised any time during its life in New York, but only on the last day of the time limit, in London. A "put" as executed in New York reads somewhat as follows: "For value received, the bearer may deliver me on one day's notice, except the last day when notice is not required, 500 shares of the capital stock of the ..... Mining Co., at $150 per share any time within 30 days from date." This is followed by the signature, time of expiration, and an agreement that if the rights of "put" are exercised, the stock shall be accompanied by all the dividends paid thereon in the meantime. A "put" and "call" may be combined in one contract, giving the holder the option of either buying or selling at the fixed price.

QUOTATIONS. The current prices of stocks, bonds, or commodities. The "bid" or "asked" prices of the securities, or the prices at which they are sold, is the meaning on the stock exchange. Unless otherwise designated quotations refer to "common stocks."

RATE OF EXCHANGE. The price of one country's money reckoned in that of another.

RATING. The financial credit or standing of a corporation, firm, or person.

REAL PROPERTY. This includes all crops not considered of annual planting,—trees, grass, etc.; land and buildings; air or space above the surface; and everything, such as minerals, etc., below. The term also signifies the right to use other land, as by a right of way.

REBATE. A deduction, for example, a "rebate" of interest for immediate payment.

REFUNDING. Issuing of new bonds to supersede the ones falling due, and which the company or municipality is unable to pay off in cash.

REGISTERED BOND. The name of the owner is filled out on the face of a registered bond, and to be transferred from one person to another the bond must be indorsed by the person in whose name it is registered, and sent for transfer to some specified office or municipality, when a new bond will be made out to the holder. The bond may be passed from hand to hand by the use of a "transfer in blank," and any holder may fill in his or her name, on the back of such a transfer, sending it when convenient to be transferred. There are two forms of registered bonds, the first having both principal and interest registered, the second only the principal. No interest coupons are attached to the first kind, but as it matures the interest in the form of a check is mailed directly to the holder; to collect the principal sum the instrument must be correctly indorsed and presented to the proper authority. To a bond of the second kind coupons payable to bearer are attached and collected as with the ordinary coupon bond; but the principal sum of the bond itself is registered, and must be indorsed and forwarded to the proper authority for collection.

RESERVE. Lawful money of the United States equal in amount to at least 25 per cent. of the sum of their deposits in all respects must be kept on hand at all times by national banks in the "central reserve cities"—New York, Chicago, and St. Louis. Thirty-nine other prominent cities are known as "reserve cities," and while the national banks therein must maintain this 25 per cent., one half of the amount may be deposited with national banks in the "central reserve cities." Fifteen per cent. of their deposits must be maintained by those known as "country banks"—national banks not located in the "central reserve" or "reserve" cities. But three fifths of this amount may be kept in national banks in the cities mentioned. According to a ruling made by the secretary of the treasury on September 29, 1902, a 25 per cent. "reserve" maintained against deposits of public money secured by government bonds is no longer necessary. Nevertheless the banks still maintain such a reserve. Because of this ruling the 25 per cent. is now figured both ways in the weekly statement of the New York Clearing House Association banks; the public money being considered as any other deposit, and secondly in accordance with the ruling of the department.

RESUMPTON OF SPECIE PAYMENT. The Resumption Act, approved January 14, 1875, authorized the secretary of the treasury to provide for the redemption in coin of United States notes, or "greenbacks," commencing January 1, 1879, and for that purpose to use surplus revenues and to sell bonds at not less than par in coin.

SCALPING. Making a quick and small profit. The expression "scalping points off the deal" refers to those who, taking advantage of the rise in prices, buy and sell accordingly, making small profits, although not understanding just what the deal is that occasions the rise.

SECOND MORTGAGE. That placed upon property on which there is already an existing mortgage. If the owner of the property cannot pay the interest on the second mortgage, the holder thereof may foreclose the property under his own mortgage, paying what is due to the holder of the first mortgage.

SECURITIES. Written or printed papers which are an evidence of debt or property; e. g., all kinds of mortgages, stocks, bonds; in fact, all forms of investment.

SEIGNIORAGE. The profit resulting from the difference between the commercial value of the metal contained in a coin and its face value. There is no seigniorage on the coinage of gold bullion, since that is not purchased by the government, which coins it for private account, the face value of the coins equaling the commercial value of the bullion. But on the coinage of silver dollars on a ratio of 16 to 1, the commercial value of silver being far below the coinage value, a profit, or seigniorage, results.

SELLER'S OPTION. Under such a contract the seller of a security may deliver the same to the buyer

on one day's notice any time within the period specified in the agreement, but need not deliver the same until the end of the time indicated. This must be not less than four nor more than sixty days on the New York Stock Exchange. "Seller 6," seller 15," etc., indicate such a transaction, the numbers referring to the number of days agreed upon in the contract.

SELLING ORDER. An order to a broker to sell a certain security—the price of which may or may not be limited,—good for the day it is given, unless otherwise stated.

SELLING SHORT. Selling for future delivery something not yet owned, in the belief that the market price of the security or commodity will decline so that it can be bought at a less price in time to fill the order.

SHAVING A NOTE. Said of a promissory note that is discounted at a greater rate than the "legal interest."

SHORT COVERING. One makes a "short covering" or "covers his sale" when, having "sold short" on a security, he buys it at what he considers the proper time, that he may deliver according to a former agreement.

SILVER CERTIFICATES. Any person possessing standard silver dollars may in accordance with the act of February 28, 1878, deposit the same in sums of $10 and upwards at the United States Treasury, and receive for them certificates which, though not legal tender, are receivable for all public dues. The issue of denominations smaller than $10, viz., $1, $2, and $5, was authorized by the act of August 4, 1886. The circulation of these silver certificates has almost superseded that of the standard silver dollars which they represent. The silver certificates in circulation were $5,789,569 in 1880, $408,465,574 in 1900, and $465,581,977 in 1908. At his discretion, the treasurer of the Philippine Islands may receive deposits of standard silver coins of one "peso" (two silver pesos equal to one United States gold dollar) not less in amount than twenty pesos, issuing in turn "silver certificates" in denominations not less than two nor more than 10 "pesos," these certificates being receivable for taxes, customs, and all public dues in the Philippine Islands, and when so received may be reissued. They may also be counted as part of its "lawful reserve" when held by any banking association in the islands. The coin deposited for certificates must be kept in the treasury and held only for the payment on demand of such certificates.

SILVER COIN AND BULLION. The silver coin and bullion imported into and exported from the United States were as follows for the years 1906 and 1907:—

Country.	1906	1907
Azores and Madeira:		
Imports	$481	$566
France:		
Imports	17,426	.....
Exports	2,184,502	3,359,158
Germany:		
Imports	410	11,240
Exports	301,482	219,455
United Kingdom:		
Imports	461,585	457,628
Exports	53,044,158	45,776,532
All other Europe:		
Imports	4,433	13,749
Exports	16,345	48,597
Total Europe:		
Imports	$484,335	$483,183
Exports	55,546,487	49,403,742
Total North America:		
Imports	43,471,851	41,498,956
Exports	886,262	5,385,168
Total South America:		
Imports	318,882	921,873
Exports	18,886	14,813
Total Asia:		
Imports	163,972	9,453
Exports	9,414,408	1,930,042
Total Oceanica, etc.:		
Imports	3,500	33,159
Exports	3,020	5,308
Grand Total:		
Imports	$44,442,540	$42,946,624
Exports	65,869,063	56,739,073

SILVER PRODUCT OF THE UNITED STATES. The production of silver increased in quantity from 57,682,800 ounces in 1904 to 56,101,600 ounces in 1905, and to 56,517,900 ounces in 1906, and decreased to 56.514,700 ounces in 1907—a loss of 3,200 ounces. It increased in commercial value from $33,456,000 in 1904 to $34,221,976 in 1905, and to $38,256,400 in 1906, and decreased to $37,299,700 in 1907—a loss of $956,700.

SILVER PRODUCT OF THE WORLD. The production of silver since the discovery of America is estimated as follows:—

Years.	Silver-coining value.	Ratio to gold.
1492-1520	$54,703,000	10.75
1521-1560	297,226,000	11.30
1561-1600	597,244,000	11.80
1601-1640	678,800,000	14.00
1641-1680	584,691,000	15.00
1681-1720	579,869,000	15.21
1721-1760	801,712,000	14.75
1761-1800	1,273,468,000	15.09
1801-1810	371,677,000	15.61
1811-1820	224,786,000	15.51
1821-1830	191,444,000	15.80
1831-1840	247,930,000	15.75
1841-1850	324,400,000	15.83
1851-1860	372,261,000	15.29
1861-1870	507,174,000	15.56
1871-1880	918,578,000	18.05
1881-1890	1,298,820,000	19.76
1891	177,352,000	20.92
1892	198,014,400	23.72
1893	213,944,400	26.49
1894	212,829,600	32.56
1895	216,566,900	31.60
1896	203,069,200	30.66
1897	207,413,000	34.28
1898	218,576,800	35.03
1899	217,648,200	34.36
1900	224,441,200	33.33
1901	223,691,300	34.68
1902	210,441,900	39.15
1903	217,131,800	38.10
1904	217,716,700	35.70
1905	222,794,500	33.87
1906	213,827,600	30.54
1907	239,172,300	31.24
Total	$12,953,697,200	.....

SINGLE STANDARD. A monometallic standard (usually gold) by which values are measured, in contradistinction to a "bimetallic standard."

SINKING FUND. A process of wiping out or sinking a debt by setting aside from time to time sums to be used in payment of the whole or part of the principal. The money may be used to buy in, or pay off, from time to time, according to agreement, some of the debt itself; or may be invested in other securities to increase in amount, and applied to the payment of the debt at its maturity.

SIXTEEN TO ONE. Sixteen ounces of silver and one ounce of gold shall, according to the ratio of "16 to 1," be each coinable into an equal number of standard dollars, the mint values of sixteen ounces of silver and one ounce of gold being considered equal. In reality, the standard ratio of the United States is 15.988 to 1.

SPECIE. "Metallic money" is the generally accepted dictionary meaning. Coin of any denomination and of any metal, as distinguished from notes and bills, is understood by the United States Mint. The word is also applied to gold and silver bullion in the term "specie payment." Gold and silver coin, gold and silver certificates, and gold clearing-house certificates, are included in the "specie" of the lawful money reserve of a national bank.

STERLING. The common term for any English coin of standard value. In such phrases as 2¼ million sterling, "pounds sterling" is understood.

STERLING EXCHANGE. Exchange on Great Britain, "Sterling at Paris 25.21" signifies that at the time of the quotation twenty-five francs and twenty-one centimes, French money, was equal in value to the "pound sterling," English money; and that twenty-five francs and twenty-one centimes per pound sterling would be paid by the purchaser in Paris of a "bill of exchange" on London.

STOCK. The parts or shares into which the property of a corporation is divided. In Great Britain ''shares'' are dealt in according to their specific denominations, but a ''stock'' can be dealt in and transferred in multiples of one pound, and sometimes less. Most British railway issues are in the form of ''stocks'' and not ''shares.''

STOCK CERTIFICATE. An engraved, lithographed, or printed form, correctly filled in, sealed and signed by the proper officers, and giving the owner's name, with the number of shares of stock it represents. Blank stock certificates are usually engraved, since a security must be engraved if dealt in on the principal stock exchanges of the world.

STOCK DIVIDEND. This term is used when the profits of a corporation are retained as additional capital, instead of being paid to stockholders as a cash dividend, new stock being issued pro rata to those already holding stock of the same company. Although the market quotations may apparently show that the receiver of a stock dividend is richer than before, this is not true, since his proportionate interest in the entire capital is the same as before the stock dividend was declared.

STOCK JOBBER. In the United States a speculator who forces the prices of securities up or down for his own gain. In England, a jobber is an intermediary between other members, and is distinguished from a broker who, although a member, deals directly with the public. The term ''stock jobber'' in England dates back to 1688.

STOP LOSS ORDERS. Or ''stop orders,'' given to a broker in the possibility that there may be a sudden decline in the price of the security owned. If the price of the security drops to that named in the customer's stop order, the broker offers the same for sale, obtaining for them the best price possible.

STOP PAYMENT. If a check is lost, notify the bank against which it is drawn, giving the number it bears, the date, the sum for which drawn, and to whom payable, with the request that if the same is presented no payment be made.

SURPLUS. The amount of profits which may be carried forward into the next business period.

SUSPENSION OF SPECIE PAYMENT. From January 1, 1862, to January 1, 1879, when this occurred, practically all gold and silver disappeared from circulation except on the Pacific Coast, where about twenty-five million specie, it is estimated, was generally in circulation. There was so little small change that Congress authorized the use of postage stamps, then ''postal currency''—a modified form of the first, and finally paper money in fractional amounts of a dollar.

TICKER. Reliable information concerning the prices of securities and commodities dealt in upon the principal exchanges of the world is furnished by this small printing machine, operated by telegraph. On a narrow strip of ribbon called the ''tape,'' which unwinds automatically as needed, and passing between the type-bearing wheels, runs out into a basket set for the purpose, are printed the quotations, the name of each security being greatly abbreviated. The ticker was introduced in 1867.

TIME DEPOSIT. Money deposited in a banking institution with the understanding that it shall remain for a definite time. Such deposits usually carry a higher rate of interest than current accounts.

TIME DRAFT. In a time draft, a certain day is named for payment; or it may be payable at the end of a stated length of time after sight—that is, after its presentation for acceptance.

TIME PAPER. Such notes, drafts, etc., as are payable at certain future dates.

TRADE DISCOUNT. That allowed by the wholesaler or manufacturer on goods purchased by retailers or others in the trade.

TRANSFER OF STOCK. The transference from one person to another of ownership in a corporation. The holder of the certificate fills in a blank found upon the back thereof, giving the name and address of the next owner, then signing his or her name. The certificate is then sent to the transfer agent, and, the old certificate being canceled, a new one is issued in the name of the new owner, and delivered according to instructions sent with the old certificate. Husband and wife should always transfer to one another through the medium of a third person, unless authority for direct transfer is given by state law. A certificate in the name of a married woman, properly signed and witnessed by her, is acceptable for delivery on the New York Stock Exchange, unless the transfer books of the particular company are closed, when they require a joint execution of the assignment by both husband and wife before a notary. ''Charles Smith, minor, under guardianship of Horace Warren,'' is an example of the wording of a certificate to a person under guardianship. ''Incompetent'' in place of ''minor'' is written if the person is insane.

TRUST. As popularly understood, this signifies a combination of competing businesses or industries, that monopolistic control can be obtained. ''Legal trust'' denotes that a number of concerns have united, the stocks of each individual company being exchanged for certificates of the newly formed trust, issued by the trustees. These also place a manager over each constituent company.

TRUSTEE. One who has the legal custody of money or property—''hold'ng it in trust.'' Used most frequently of an individual, bank, banking-house, trust company, etc., who acts as ''trustee'' of a mortgage.

UNDERWRITING. Guaranteeing insurance (especially marine insurance), or an issue of securities, in consideration of receiving a certain premium per cent.

UNITED STATES DEPOSITORY. Any national bank may be authorized by the secretary of the treasury as a ''depository'' for the moneys of the United States government. This is done that a part at least of the large sums of money which the government often accumulates may get into use; for if such should go into its hands and so out of circulation, there would be a scarcity of money for actual use, and it is to prevent this that the plan has been adopted. National banks are employed as depositories by the government for other reasons than the above. In places where sales of public lands occur, ''permanent depositories'' are located to receive the proceeds of such collections or sales; and also where the principal offices of internal revenue collectors are stationed. Post office money orders and United States Court funds are kept in ''special depositories.'' Any bank accepting the above appointment must deposit adequate security with the treasury department of the United States government.

UPSET PRICE. The bottom price at which a security, etc., will be sold.

WAREHOUSE RECEIPT. When commodities are stored with a warehouse company, it issues a receipt in written evidence thereof. A merchant importing a quantity of dutiable goods may for a certain length of time keep the same in a ''bonded warehouse'' without paying duty; or for a limited time goods subject to internal revenue taxes may be stored therein awaiting payment of taxes.

WASH SALES. These are against the rules of the exchanges. One broker orders another to sell at a fixed price a certain quantity of stock, but buys it back when sold on the stock exchange. The sale is reported on the ticker, giving a false impression of the activity of the stock, since it did not actually change hands.

WATERED STOCK. The face value of such an issue of stock is greater than the value of the property represented thereby at the time of the issue. An increase of stock will not increase the property value of a corporation unless it is exchanged for real value.

WITHOUT RECOURSE. Without liability or responsibility. If the original signer of a check or note fails to pay the same, every indorser thereof is responsible for its payment except under certain conditions when responsibility may be avoided by the indorser's prefixing the words ''without recourse'' to his signature.

WOMAN'S SIGNATURE. Women are often careless in signing their names, not making it clear whether married or single. To business letters the best way for a married woman to sign her name is for example—Janet E. Clark (Mrs. Andrew B. Clark), or, Janet E. Clark, wife of Andrew B. Clark. An unmarried woman should prefix (Miss) before her signature. In checks, etc., and all legal documents, a woman must, of course, use her legal signature, which in the above instance would be Janet E. Clark. But when a married woman executes papers transferring title to something which she acquired under her maiden name, it is customary to put in the instrument she signs a clear statement of the fact.

DICTIONARY OF EMINENT FINANCIERS.

ADDINGTON, HENRY, FIRST VISCOUNT SIDMOUTH (1757-1844). English chancellor of the exchequer; born at Reading; graduated at Brasenose, Oxford, and was admitted to the bar (1784). Speaker of the House of Commons (1789-1801); premier and chancellor of the exchequer (1801-1804); was raised to the peerage and served as president of the council (1805, 1806, 1807). He subsequently filled the office of home secretary, and was a member of the cabinet from 1822 to 1824.

ASTOR, WILLIAM WALDORF (1848-). Capitalist; born in New York; great grandson of John Jacob, who laid the foundation of the Astor fortune. At his father's death (1890) William inherited his personal fortune estimated at about $100,000,000; United States minister to Italy (1882-1885); settled in England (1890), became sole owner of the *Pall Mall Gazette* (1893), and *Pall Mall Magazine*; built the Waldorf hotel in New York, which with the Astoria built by his cousin, John Jacob Astor, forms one of the most costly hotels in the world.

BALFOUR, ARTHUR JAMES. See under Government.

BELMONT, AUGUST (1853-). Banker; born in New York; head of August Belmont & Company, the American representatives of the European banking firm of Rothschilds; chairman board of directors of several construction companies; president Cape Cod Construction Company; trustee of savings banks and insurance companies; director of a number of railroads, steamship lines, real estate companies, and other corporations.

BELMONT, OLIVER HAZARD PERRY (1858-1908). Capitalist; born in New York; educated at United States Naval Academy, and served two years in the navy. Was member August Belmont & Company; published *The Verdict*; delegate Democratic National Convention (1900); member Congress (1901-1903), 13th New York district.

BISMARCK, KARL OTTO EDUARD LEOPOLD, PRINCE VON. See under Government.

BLAND, RICHARD PARKS. See under Government.

BOUTWELL, GEORGE SEWALL. See under Government.

BRISTOW, BENJAMIN HELM (1832-1896). A United States secretary of the treasury; born in Elkton, Ky.; practised law until the outbreak of the Civil War, when he entered the service of the Union army; was made United States solicitor general (1870), and was secretary of the treasury (1874-1876); was defeated for the Republican presidential nomination (1876), and spent the remainder of his life in the practice of law; as secretary of the treasury his part in the prosecution of the "Whisky Ring" made him well known as a reformer.

CAMPHAUSEN, OTTO VON (1812-1896). Great German financier; born at Hünshoven; was educated at the universities of Munich, Berlin, Heidelberg, and Bonn, giving special attention to law and political economy; from 1834 to 1845 he held several government positions of minor importance, but in the latter year he was made privy councilor of finance; from 1849 to 1852 was a member of the second Prussian Chamber, and now began to use his large fortune for the encouragement of literature and art, and for the support of charitable institutions; the resignation of Baron von der Heydt (1869) led Bismarck to name him as chancellor of the exchequer; the position was accepted, and Camphausen's administration (1869-1878) brought the finances of the country to a prosperous condition, an act which showed ability of the highest order; but the opposition of the Liberals and the continued conflict with Bismarck, caused by his free trade principles, finally resulted in Camphausen's resignation.

CHILDERS, HUGH CULLING EARDLEY (1827-1896). English chancellor of the exchequer; born in London; was graduated at Cambridge (1850), and was commissioner of trade and customs in Victoria, Australia, until 1857; returning to England he was first lord of the Admiralty under Gladstone (1868-1871), secretary of war (1880-1882), and chancellor of the exchequer (1882-1885); was home secretary in the Gladstone ministry of 1886.

CLARENDON, EDWARD HYDE, EARL OF (1609-1674). An English chancellor of the exchequer; born at Dinton, Wiltshire; prepared for the church at Magdalen College, Oxford, graduating in 1626; leaning toward letters rather than his chosen profession, he became acquainted with the literary men of the period; sat in both the Long and Short Parliaments, and in 1643 he was made privy councilor, chancellor of the exchequer, and knighted; was active in opposing the execution of Charles I., and became lord chancellor (1658), the appointment being confirmed at the time of the Restoration; was made chancellor of Oxford University (1660), and the following year received the titles of viscount Cornbury and earl of Clarendon; his administration witnessed the settlement of many important questions, but the ill success of some of his projects, together with court intrigue, led to his complete downfall (1667); the remainder of his life was spent in exile.

CLEWS, HENRY (1830-). Banker; born at Staffordshire, England; entered mercantile life in New York at 15; member firm Stout, Clews & Mason (1858); later Livermore, Clews & Company; organized firm Henry Clews & Company (1877); has been connected with many city institutions and financial corporations.

COBB, HOWELL. See under Government.

COLBERT, JEAN BAPTISTE. See under Government.

CORTELYOU, GEORGE B. See under Government.

CORWIN, THOMAS. See under Government.

CRANFIELD, LIONEL, EARL OF MIDDLESEX (1575-1645). Sometimes called the first of English financiers; early became a merchant, and attracted the attention of the nobles when representing his company before the privy council; was appointed receiver of customs for Dorset and Somerset (1605); became master of the great wardrobe (1618); chief commissioner of the navy (1619), and master of the court of wards in the same year; in each of these offices he wrought great reforms, and prevented much financial waste; was created baron and earl of Middlesex (1622), but, on being charged with corruption in regard to the court of wards, was deprived of all his offices, fined, and sentenced to the Tower during the king's pleasure; Cranfield was released (1625) and pardoned the following year.

DALLAS, ALEXANDER JAMES. See under Government.

ECKELS, JAMES HERRON (1858-1907). American financier; born at Princeton, Ill.; graduated at Albany Law School (1880); practised law at Ottawa, Ill. (1881-1893); was comptroller of the currency (United States) from 1893 to 1898; figured as a gold standard Democrat in the presidential compaign of 1896; president of the Commercial National Bank, Chicago (1898).

EWING, THOMAS. See under Government.

FESSENDEN, WILLIAM PITT. See under Government.

FOSTER, CHARLES. See under Government.

GALT, SIR ALEXANDER TILLOCH. See under Government.

GLADSTONE, WILLIAM EWART. See under Government.

GOSCHEN, GEORGE JOACHIM (1831-1907). English financier and statesman; educated at Rugby and at Oriel College; early entered upon a financial career, and became director of the Bank of England (1856); was elected to Parliament for London (1863) took an active part in bringing about the abolition of religious tests; was made vice-president of the Board of Trade and privy councilor (1865), and chancellor of the duchy of Lancaster (1866); became president of the Poor Law Board (1868); first lord of the Admiralty (1871), retiring with his party in 1874; Goschen served as special ambassador to the Porte (1880-1881), and in the Salisbury government (1886-1892) was chancellor of the exchequer; in this office he won much praise for his scheme for reducing the national debt; resumed his old position as first lord of the Admiralty (1895), continuing in that office until 1900; on the question of tariff reform brought up in the ranks of the Unionist party (1903-1905), Goschen became well known as an obstinate supporter of free trade.

GOULD, HOWARD (1871-). Capitalist; born in New York; director Missouri Pacific Railway Company, Western Union Telegraph Company, International & Great Northern Railway Company, New York Mail & Newspaper Transportation Company, and numerous other corporations; member of the New York Stock Exchange.

HAMILTON, ALEXANDER. See under Government.

HARCOURT, SIR WILLIAM VERNON. See under Government.

HARDWICKE, PHILIP YORKE, FIRST EARL OF (1690-1764). English lord chancellor; born at Dover; was admitted to the bar (1715); elected a member of Parliament for Lewes (1719); appointed solicitor general (1720); lord chief justice of the King's Bench (1733); lord chancellor (1737); was created earl of Hardwicke in 1754.

HARRIMAN, EDWARD HENRY (1848-1909). Capitalist; born at Hempstead, Long Island; at 14 entered a broker's office in Wall Street, as clerk; became stockbroker for himself; member New York Stock Exchange since 1870; president and director of Portland and Asiatic Steamship Company, Oregon Railroad & Navigation Company, and of many other railroads; director Erie Railroad Company, Western Union Telegraph Company, and numerous other corporations; trustee Equitable Trust Company.

HEYDT, AUGUST, FREIHERR VON DER (1801-1874). Great German financier; born at Elberfeld: early showed great aptitude for business, and, after completing his education in Germany, worked as clerk in several financial houses of France and England; in company with his two brothers he now carried on a banking business in Elberfeld; from this time on his reputation steadily increased; accepted the office of president of the Board of Trade and Public Works in the Brandenburg-Manteuffel cabinet (1848); became chairman of the bank of Prussia (1851), and minister of finance in the Hohenlohe-Itzenplitz cabinet (1862); resigned the same year, but, in 1866, when it was found that money was lacking to defray the expenses of the war with Austria, Bismarck prevailed with the king to reappoint Heydt; this was done, and the finances were skillfully managed until 1869, when Heydt, failing in health and discouraged with the condition of the country, tendered his resignation.

HICKS-BEACH, SIR MICHAEL EDWARD (1837-). English chancellor of the exchequer;; born in London; educated at Eton and at Christ Church, and entered Parliament (1864); was chief secretary for Ireland (1874-1878); secretary of state for the colonies (1878-1880; chancellor of the exchequer and leader of the House of Commons (1885); served as president of the Board of Trade (1888-1892); again chancellor of the exchequer from 1895 to 1902; greatly disconcerted the Balfour government by his acute attack on the methods of the war office.

HUSKISSON, WILLIAM (1770-1830). English statesman and financier; born in Worcestershire; went to Paris to study medicine; became a member of the Club of 1789; delivered before its members a speech on currency; on his return to England (1792) he received a minor government appointment; became intimate with such men as Canning and Pitt; was under secretary of war (1795-1801); from 1796 until the time of his death was almost continuously a member of Parliament; was appointed secretary of the treasury (1804); lost his position (1806), but regained it in 1807; became chief commissioner of woods and forests (1814); president of the Board of Trade (1823); secretary of state for the colonies (1827); his term of service in this last position witnessed the removal of the restrictions on the foreign trade of the colonies, and a reduction of many import duties.

ISELIN, ADRIAN, JR. Banker; director of Southern Railway Company, Lackawanna Steel Company, National Bank of Commerce, City & Suburban Homes Company, New British & Mercantile Insurance Company of London and Edinburgh; vice-president and director Buffalo, Rochester & Pittsburg Railway Company, and many other corporations.

JESUP, MORRIS KETCHUM (1830-1908). Banker (retired); born at Westport, Ct.; began business career as a clerk for a New York manufacturing firm; became an active banker (1852-1854); gave his aid in a financial way to many educational and religious institutions; president New York City Mission and Tract Society (1881-1903); one of founders (president, 1872) Y. M. C. A. of New York; president Chamber of Commerce of New York since 1899; Audubon Society, state of New York, since 1896; American Sunday School Union since 1896; Peary Arctic Club and Sailors' Snug Harbor since 1899; director and trustee of Atlantic Mutual Insurance Company, Western Union Telegraph Company, and of other corporations.

KNOX, JOHN JAY (1828-1892). American financier; born in Knoxboro, N. Y.; graduated from Hamilton College (1849); entered the banking business; his sympathy with the National Banking plan of Secretary Chase led to his appointment to a position in the treasury department (1866); was deputy comptroller of the treasury (1867-1872); comptroller (1872-1884); president of the National Bank of the Republic in the city of New York (1884-1892); prepared the original draft of the Coinage Act of 1873, which stopped the coinage of the silver dollar; was an authority on all matters relating to currency.

LAW, JOHN (1671-1729). A Scotch financier; founder of the first banking institution in France, the Banque Générale, established in Paris in May, 1716; in conformity with his views he issued paper currency which was accepted in payment of taxes, soon being at a premium; was given control of Louisiana by the French government in 1717; trade and colonization were the objects in view, to promote which was formed the "Compagnie d' Occident," usually called the Mississippi Company," but later known as the "Mississippi Scheme" or "Bubble"; the company became of great importance in foreign as well as home commercial and financial affairs by absorbing the Africa, China, and East India companies and taking over the powers of receivers general and the control of the mint; in 1718 the Banque Générale was changed to Banque Royale; two years later the bank and the company became one, when Law became controller general of finance; but there was an overissue of paper money, the government opposed Law's scheme, and he left the country in May, 1720, after there had been a tremendous speculative craze, followed by a complete collapse.

MILLS, DARIUS OGDEN (1825-1910). Banker, financier; born at North Salem, Westchester County, New York; was a clerk in New York; went to California (1849) and became merchant and dealer in exchange in Sacramento; founded bank in that city; regent and treasurer University of California (1868-1880); one of first trustees of Lick estate and Observatory, California; returned to New York (1880); built Mills Building, a system of hotels, and Nurses' Training School in New York; president New York Botanical Garden; director and trustee of several railroads and other corporations.

MORGAN, JOHN PIERPONT (1837-). Banker, financier; born at Hartford, Ct.; entered bank of Duncan, Sherman & Company (1857); in 1860 became agent and attorney in United States, for George Peabody & Company, bankers of London; became member firm of Drexel, Morgan & Company (1871), which is now J. P. Morgan & Company, leading private banking house in the country, with important branch house in London; floated United States bond issue of $62,000,000 during Cleveland's administration; secured American subscriptions of $50,000,000 to British war loan of April (1901); controls over 50,000 miles of railways in the United States and England; president Metropolitan Museum of Art; has donated largely to educational and religious institutions, as well as to art.

MORRIS, GOUVERNEUR. See under Government.

MORRIS, ROBERT. See under History.

NECKER, JACQUES. See under Government.

NORTH, FREDERICK, EIGHTH LORD NORTH AND SECOND EARL OF GUILFORD. See under Government.

NORTHCOTE, SIR STAFFORD HENRY, EARL OF IDDESLEIGH. See under Government.

OSGOOD, JOHN CLEVELAND (1851-). Capitalist; born in Brooklyn. Began his business career as office boy in Providence, and later went to New York as clerk for a commission firm; from 1874-1877 he was cashier for the First National Bank of Burlington, and during the next five years engaged in coal mining. In 1892 he organized the Colorado Fuel and Iron Company, of which he was either president or chairman of board of directors until his resignation in 1903. Now he is president of Crystal River Railroad, and Colorado & Wyoming Railroad, built in the interest of the Fuel and Iron Company.

OVERSTONE, SAMUEL JONES LLOYD, BARON (1796-1883). Welsh banker and authority on finance; educated at Eton and Cambridge, entering the banking and mercantile business after graduation; from 1816 to 1823 sat in Parliament for Hythe; became a great student of banking questions, subsequently publishing two or three works on the subject; his influence over the chancellors of the exchequer was great, and in the bank charter act (1844) his ideas in the main were carried out; raised to the peerage (1860).

PATERSON, WILLIAM (1658-1719). British financier; born in Dumfriesshire, Scotland; removed to England when a young man, and, engaging in trade in London, acquired quite a fortune; first proposed to the government his plan for the establishment of the bank in 1691, but it was not until 1694 that Parliament passed an act adopting his ideas; although an original stockholder in the bank, he soon resigned and removed to Scotland, where he prevailed on the Scottish Parliament to pass the act founding the "Company of Scotland trading in Africa and India," under which name the Darien colonization scheme was carried out; in this Paterson was not wholly successful, and in 1715, in recognition of his public services, the government voted him about $90,000 to compensate his losses in the Darien scheme; Paterson was active in securing the union of England and Scotland.

PAYNE, OLIVER HAZARD (1841-). Capitalist; born at Cleveland, Ohio; graduated at Yale in 1863, and was a Union officer in the Civil War. Director in Standard Oil Company, American Tobacco Company, Chase National Bank, Manhattan Trust Company, Havana Tobacco Company, International Railway Company, Virginia & Southeastern Railway Company, New York Loan and Improvement Company, etc. Gave $500,000 to aid in establishing and maintaining medical department of Cornell University in New York.

PITT, WILLIAM. See under Government.

QUESNAY, FRANCOIS (1694-1774). French economist; born at Méré; early practised as a surgeon and physician; devoted much time to the study of economics; was the author of several works and had several stanch disciples, who did much to popularize his views, and who afterwards formed the sect known as the Physiocrats.

RICARDO, DAVID (1772-1823). English political economist; born in London; at the age of 14 entered his father's stock exchange business, and about five years later established himself as a broker; soon became wealthy; report of the bullion committee (1811) was drafted under Ricardo's influence, and, from the time he entered Parliament (1819), his influence in financial matters was very great; noted also for his writings, which probably exerted more influence upon economic thought than those of any other writer, Adam Smith excepted.

RICHELIEU, ARMAND JEAN DUPLESSIS, CARDINAL DE. See under Government.

ROGERS, HENRY H. (1840-1909). Capitalist; born at Fairhaven, Mass.; vice-president and director Standard Oil Company, Brooklyn Union Gas Company, United Metals Selling Company; president and director Amalgamated Copper Company, National Transit Company, National Fuel Gas Company, New York Transit Company, Richmond Light and Railroad Company; and as trustee or director was also connected with many other corporations; has given liberally to his native town.

ROTHSCHILD. A family of European financiers, of which the following two may be mentioned: **MAYER ANSELM** (1743-1812). Founder of the family; born at Frankfort-on-the-Main; entered the counting house at Hanover, opened a money exchange business at Frankfort, and was intrusted with the private fortune of the elector of Hesse-Cassel (1806) when the latter fled; the money was ably handled, and in 1815 was returned to the elector with interest; his five sons became known throughout Europe as eminent financiers, and few international transactions were undertaken without their aid. **LIONEL** (1808-1879). Eldest son of Nathan, son of Mayer Anselm Rothschild; born in London; received his education at Göttingen; continued his father's business in London; was elected to Parliament for London (1847, 1849, 1852, 1857); noted for his success in obtaining Jewish emancipation in Great Britain; taking his seat in the Commons (1858) he served until 1868, and again from 1869 to 1874.

RYAN, THOMAS FORTUNE (1851-). Financier; born in Nelson County, Virginia; in 1868 entered a Baltimore dry goods house; entered Wall Street (1870); member New York Stock Exchange (1874); vice-president Morton Trust Company; member Chamber of Commerce; reorganized various railroads; director of many financial enterprises; in 1905 purchased controlling interest of the stock of Equitable Life Assurance Society of the United States.

SHERMAN, JOHN. See under Government.

SULLY, MAXIMILIEN DE BETHUNE, DUKE DE. See under Government.

TILLEY, SIR SAMUEL LEONARD. See under Government.

TUPPER, SIR CHARLES. See under Government.

TURGOT, ANNE ROBERT JACQUES, BARON DE L'AULNE (1727-1781). French economist and statesman; born in Paris; was educated for the church, but turned his attention to the study of political economy, allying himself with the liberal views of the time; was intendant of Limoges (1761-1774), where he inaugurated many beneficial reforms, and after the death of Louis XV. was called to the ministry; the disordered condition of the finances gave him a chance to show his ability as a financier; was first minister of marine and later comptroller general; greatly reduced expenditures, required of the nobles the same tax asked of others, and aimed to establish free trade throughout France; among his important measures were the abolition of the *corvée* (January 6, 1776), and the *jurandes* (March 12, 1776); the first of these related to the forced labor of the peasants upon the making of high roads; the second to the government of privileged corporations; his reforms, especially those directed against the nobility, soon won him the hostility of that class, and he retired in May, 1776, after 20 months of service; spent the greater part of the remainder of his life in writing.

VANDERBILT, ALFRED GWYNNE (1877-). Capitalist; born in New York; was graduated from Yale (1899); director Hanover National Bank, Plaza Bank, Conried Metropolitan Opera Company, American Horse Exchange, and various other banks and railways.

VANDERBILT, CORNELIUS (1794-1877). Capitalist; born near Stapleton, Staten Island, N. Y. Without education or capital, he started a ferry between New York and Staten Island at the age of 16. In two years he owned and controlled three boats, and at 30 years of age he held controlling interest in a company owning a large number of river and harbor vessels. Later he controlled fleets of steamboats on the Hudson, the Sound, and the Delaware; ran lines to Boston and other coast cities, to California via Lake Nicaragua, and to Havre, France. He gradually transferred his capital from steamers to railroads, and by 1864 he had control of the Hudson River Railroad. He secured the New York Central three years later, and soon united the two roads into one system, which he finally extended into a through route from New York to Chicago. Fortune estimated at $100,000,000.

VANDERBILT, CORNELIUS II. (1843-1899). Financier and capitalist, born at New Dorp, Staten Island, N. Y., son of William H. and grandson of Cornelius. After acting as banking clerk in New York, he entered the brokerage house of Kissam Brothers. Since 1867, he has been an official in railroad management, chairman of governing boards of New York Central & Hudson River Railroad, and Michigan Central, and director in 34 different railways. He was head of Vanderbilt railroads interests until ill health compelled him to retire.

VANDERBILT, CORNELIUS III. Capitalist; born in New York; graduated at Yale (1895); director of New York Life Insurance and Trust Company, Mutual Life Insurance Company, Allis-Chalmers Company, Lackawanna Steel Company, Marine National Bank of Buffalo, Illinois Central Railway Company, Hudson companies, Mexican Telegraph Company, Philippine Railway Company, and of numerous other financial enterprises.

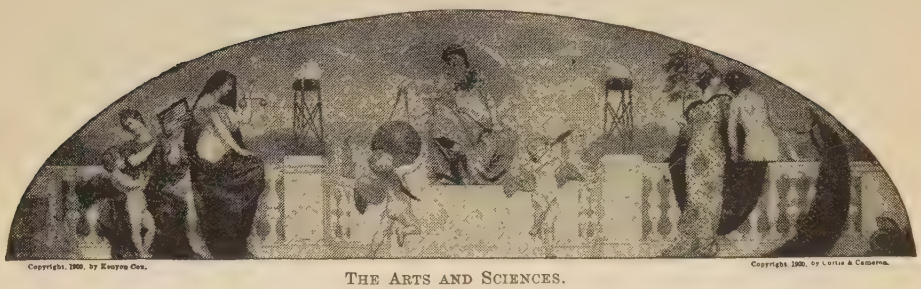
VANDERBILT, FREDERICK WILLIAM (1856-). Capitalist; graduated from Yale Sheffield Scientific School (1876); received a business training in office of his father's railroad system; director New York Central Railroad, Chicago & St. Louis Railroad, Canadian Southern Railway Company, The Pullman Company, and numerous other financial and railway corporations.

VANDERBILT, GEORGE WASHINGTON (1862-). Capitalist; born at New Dorp, Staten Island, New York; gave largely to educational institutions; presented American Fine Arts Society of New York the room in their building known as the Vanderbilt Gallery; has 100,000 acres of mountain land near Asheville, N. C., which he has improved and on which he has erected a mansion.

WHITTINGTON, RICHARD (about 1359-1423). English merchant; nothing definite is known of his early life; in 1397, 1398, 1406, and 1419 he was mayor of London; is said to have loaned large sums of money to the king, and at his death left the greater part of his fortune for charitable purposes.

BOOK VIII.

SCIENCE.



THE ARTS AND SCIENCES.
Mural Painting in the Congressional Library, Washington.
BY KENYON COX.

MATHEMATICS: ARITHMETIC ALGEBRA, GEOMETRY, TRIGONOMETRY, ETC. ASTRONOMY: EARTH, MOON, SUN, STARS, ECLIPSES, SEASONS. PHYSIOGRAPHY: LAND, WATER, RAINFALL, WINDS, VOLCANOES, EARTHQUAKES. DICTIONARY OF PHYSICAL AND CHEMICAL TERMS. CHEMICAL ELEMENTS, GEOLOGY, BIOLOGY, EVOLUTION, BOTANY, CULTIVATED PLANTS, ZOOLOGY, DOMESTIC ANIMALS. DICTIONARY OF NATURAL HISTORY: PLANTS AND ANIMALS. DICTIONARY OF EMINENT SCIENTISTS.

MATHEMATICS.

Pure mathematics includes Arithmetic, Algebra, Analysis, Geometry, and Trigonometry. *Applied* mathematics includes Mechanics, Physics, Geodesy, Geophysics, and Astronomy.

The oldest deciphered work on mathematics is a papyrus manuscript preserved in the British Museum. It was copied by Aahmes, a scribe of the Hyksos dynasty, between 2000 and 1700 B. C., from an older work dated 2400 B. C.

Arithmetic.—The plan of indicating numbers by the digits of one or both hands is so natural as to be in universal use among early races. The combinations of ten digits or the decimal system was originated by the Hindus, who passed it on to the Arabs, whence it came to the Europeans. The *abacus* or *swan-pan* developed from the arrangement of pebbles in sets of ten.

In writing numbers at first, strokes indicated the value. Additional symbols for 10 and 100 were used, repetitions of the symbols for unity and ten being used as often as necessary. The seven Roman symbols are now generally recognized to be modified forms of old Greek letters. The Arabic numerals, 1 to 9, as used at first proved cumbersome until the 0 was added, 1200 years ago, when they displaced the Roman system in Europe. The distinctive feature of the Arabic system is the place value of the numerals. Orders of units increase from right to left and decrease from left to right in a tenfold ratio.

Addition.—This is the basis of all mathematical processes. Ability to add rapidly and accurately is a valuable accomplishment. Rapid addition depends mainly upon the ability to group two or more figures into a single number. Here is the bankers' method of verification:—

(3)	(1)	(2)
	4225	
19	6248	28
17	5419	15
15	2856	17
28	2130	19
20878	20878	20878

Subtraction.—For practical computation, the "making change" method is best. It is easily understood, and more rapid when once learned. Thus, add to the smaller number a sum that will equal the larger: 476—284=192, as 192 is added to 284 to make 476.

Banks and other business houses having a large amount of adding to do frequently use an adding machine. The operations of subtraction, combined addition and subtraction may be usually performed.

Multiplication.—There are many short methods in multiplication, but only a few are practical, as they have been supplanted by tables and other mechanical devices. Multiplying machines are in common use.

Useful short methods:—

1. To multiply a number by 10, annex one zero; by 100, two zeros; by 1000, three zeros.

2. To multiply by 11: $275\times11=275\times10=2750+275$ $(1\times275)=3025$; or better still, add the digits as follows: 5; 7+5=12; 7+2+1 (carried)=10; 2+1 (carried)=3; the result is 3025.

3. To multiply any number by 9, 99, or 999:

$465\times9=4650-465=4185$; $465\times99=46500-465=46035$.

To secure accuracy a careful computer checks his work *at every step.*

Division.—Short methods:—

1. To divide by 10, 100, or 1000, cut off as many figures from the right as the divisor contains zeros: $485\div10=48.5$; $485\div100=4.85$; $485\div1000=.485$.

2. To divide by multiples of 10: $485\div50=485\div10=48.5\div5=9.7$; $485\div500=4.85\div5=.97$.

Fractions.—The ancient papyri show that the Egyptians had an idea of "vulgar" (common) fractions at a very early date, for the arithmetical part was devoted to unit fractions ($\frac{1}{6}$, $\frac{1}{7}$). Instead of the modern form for $\frac{2}{19}$, $\frac{1}{12}+\frac{1}{76}+\frac{1}{114}$ was used. Other manuscripts of the fifth and ninth centuries, recently found, treat fractions similarly, though 2000 years later than Aahmes' copy.

A *fraction* is one or more of the equal parts of a unit. In written fractions, the number below the line, called the denominator, shows the number of equal parts into which a unit is divided; the numerator, written above the line, shows the number of equal parts used. A proper fraction is one whose value is less than a unit, as $\frac{5}{6}$; an improper fraction has a value equal to or greater than a unit, as $\frac{6}{6}$, $\frac{7}{6}$; a mixed number is an integer and a fraction united, as $12\frac{7}{8}$.

The four fundamental operations are performed with fractions: in addition and subtraction all fractions are changed to equivalent ones with a common denominator.

ADDITION.

$\frac{7}{8}=\frac{21}{24}$ $\quad$ $18\frac{5}{6}=18\frac{25}{30}$

$+\frac{2}{3}=\frac{16}{24}$ $\quad$ $+12\frac{3}{5}=12\frac{18}{30}$

$1\frac{13}{24}=1\frac{37}{24}$ $\quad$ $30\quad\frac{43}{30}=1\frac{13}{30}$

$1\frac{13}{30}$

$31\frac{13}{30}$

SUBTRACTION.

$\frac{7}{8}=\frac{21}{24}$ $\quad$ $18\frac{5}{6}=18\frac{25}{30}$

$-\frac{2}{3}=\frac{16}{24}$ $\quad$ $-12\frac{3}{5}=12\frac{18}{30}$

$\frac{5}{24}$ $\quad$ $6\frac{7}{30}$ $\quad$ $\frac{7}{30}$

Two processes in subtraction frequently give trouble:—

$100\quad=99\frac{9}{9}$

$-\ 46\frac{7}{9}=46\frac{7}{9}$

$53\frac{2}{9}$

$27\frac{1}{3}=27\frac{4}{12}+26\frac{12}{12}=26\frac{16}{12}$

$-19\frac{3}{4}=19\frac{9}{12}\qquad 19\frac{9}{12}$

$7\frac{7}{12}\qquad 7\frac{7}{12}$

In multiplying fractions, the numerators are multiplied together and the denominators likewise, as $\frac{4}{5}\times\frac{1}{7}\times\frac{1}{2}=\frac{4}{70}=\frac{2}{35}$, canceling when possible.

Mixed numbers may be multiplied by multiplying the parts separately and adding results, or by changing to improper fractions and multiplying as with proper ones: $16\frac{1}{4}\times12\frac{1}{3}=16\times12=192$; $16\times\frac{1}{3}=8$; $12\times\frac{1}{4}=3$; $\frac{1}{4}\times\frac{1}{3}=\frac{1}{8}$; $192+8+3+\frac{1}{8}=203\frac{1}{8}$; or $16\frac{1}{4}\times12\frac{1}{3}=\frac{65}{4}\times\frac{25}{2}=\frac{1625}{8}=203\frac{1}{8}$.

In dividing fractions, invert the divisor and multiply: $\frac{4}{5}\div\frac{5}{6}=\frac{4}{5}\times\frac{6}{5}=\frac{24}{25}$; $2\frac{2}{3}\div2\frac{2}{5}=\frac{8}{3}\times\frac{5}{12}=\frac{40}{36}=1\frac{1}{36}=1\frac{1}{9}$.

Decimals or *Decimal Fractions.*—These were used first in the sixteenth and seventeenth centuries, written thus: $25|379$ or $25\underline{|379}$; the notation now current developed at the beginning of the eighteenth century.

A decimal is a fraction whose denominator is 10 or some power of 10, not usually expressed, but is indicated by the use of a period or decimal point placed at the right of units or left of tenths. The point is read *and* when it separates an integer and decimal. Common and decimal fractions are easily interchanged:—

$.625=\frac{625}{1000}=\frac{5}{8}$; $\frac{5}{8}=\frac{5.000}{8}=.625$.

In addition and subtraction of decimals, keep the decimal points in the same vertical column. The product in multiplication contains as many decimal places as the sum of those in the numbers multiplied. The quotient in division contains the excess of decimal places in the dividend over those in the divisor. Short methods:—

a. $16.25\times10=162.5$; $\times100=1625.$; $\times1000=16250.$

b. $16.25\times.1=1.625$; $\times.01=.1625$; $\times.001=.01625$

c. $16.25\div10=1.625$; $\div100=.1625$; $\div1000=.01625$

d. $16.25\div.1=162.5$; $\div.01=1625.$; $\div.001=16250.$

Buying and selling:—

1. To find value of articles sold by the hundred (C): point off two places and multiply by cost; cost of 600 lbs. of nails @ 35c per C; $6.00\times\$0.35=\$2.10$, cost.

2. To find value by the thousand (M): point off 3 places and multiply by cost; cost of 7500 shingles @ \$14 per M; $7.500\times\$14=\$105$, cost.

3. To find value by the ton (2000 lbs.): point off three places, divide by 2, multiply by cost per ton: Cost of 8650 lbs. of hay @ \$12 per T: $8.650\div2=4.325\times\$12=\$51.90$, cost.

Much time is gained by the use of aliquot parts; a part of a number contained in the number an integral number of times is an aliquot part, as, $12\frac{1}{2}$, $33\frac{1}{3}$, 50, and 25 are aliquot parts of 100.

$12\frac{1}{2}=\frac{1}{8}$ of 100. $\quad 12\frac{1}{2}\times40=\frac{1}{8}$ of $40\times100=500$

$75=\frac{3}{4}$ of 100. $\quad 75\times16=\frac{3}{4}$ of $1600=1200$

$33\frac{1}{3}=\frac{1}{3}$ of 100. $\quad 600\div33\frac{1}{3}=600\times\frac{1}{100}\times\frac{3}{1}=18$

$16\frac{2}{3}=\frac{1}{6}$ of 100. $\quad 6\div16\frac{2}{3}=6\times\frac{6}{1}\times\frac{1}{100}=.36$.

Percentage is the process of computing by *hundredths* or *per cents.*, and includes all operations in which 100 is the basis of computation: Commercial Discounts, Gain and Loss, Commission and Brokerage, Insurance, Taxes, Customs and Duties, Interest, and Banking, Exchange, Stocks and Bonds. The terms used are: Base (B), the number of which a per cent. is taken; Rate (R or %), the number of hundredths of the base to be taken; Percentage (P), the result obtained by taking a certain per cent. of the base $B\times R=P$; $P\div B=R$; $P\div R=B$; $B+P=$ Amount (A); $B-P=$Difference (D).

a. $16\frac{2}{3}$ % of $60=\frac{1}{6}$ of $60=10$ P.

b. $10\div16\frac{2}{3}$ % $=10\times\frac{6}{1}=60$ B.

c. $10\div60=\frac{10}{60}=\frac{1}{6}=16\frac{2}{3}$ % R.

d. $60+10=70$, A; $60-10=50$ D.

The processes are the same throughout all the computations, though different names are used for the terms.

Base=Cost, capital, principal, valuation.

Rate=% of gain or loss, interest, commission.

Percentage=Gain or loss, discount, interest, premium.
Amount=Selling price with gain, total cost.
Difference=Selling price at a loss, net cost, proceeds.

Important Per Cents and Their Fractional Equivalents.

Per Cent.	Fractional Values.	Per Cent.	Fractional Values.
50%	½, .5	87½%	⅞, .875
25%	¼, .25	16⅔%	⅙, .166
75%	¾, .75	33⅓%	⅓, .333
20%	⅕, .2	66⅔%	⅔, .666
40%	⅖, .4	6¼%	1/16, .0625
100%	1, 1.	6⅔%	1/15, .0666
12½%	⅛, .125	8⅓%	1/12, .0833
37½%	⅜, .375	11⅑%	⅑, .1111
62½%	⅝, .625	14⅔%	1/7, .1428

Commercial Discounts.—A reduction from the list price of an article, from the amount of a bill of merchandise, or from the amount of a debt is called a commercial or trade discount. Manufacturers, jobbers, and wholesale dealers usually have printed lists of their goods. The prices in these lists are frequently printed higher than the actual selling price subject to trade discount to obviate the necessity of issuing new catalogues whenever the market changes. These changes and the variation in quantity purchased by different customers cause two or more discounts called a series. The first is off the list price, the second from the remainder, and so on. To find the net selling price and a single rate of discount equivalent to a series: 25%, 33⅓%, and 10% off; 100% = list price; 100%—25%= 75%; 33⅓% or ⅓ of 75%=25%; 75%—25%= 50%; 10% or 1/10 of 50%=5%; 50%—5%= 45%, the net selling price; 100%—45%=55%, the single equivalent rate of discount. Cost of bill of goods amounting to $60. $60×55/100 or 11/20=$33 cost to buyer.

Interest is the compensation paid for the use of money and is computed at a certain per cent. per year of the sum borrowed. Six per cent. is the legal rate in most states. In the commercial world 12 months of 30 days each, or 360 days, are called a year, and, though not exact, it is the most common usage. The United States government takes exact interest (365 days), and its use is growing among business men. In strict justice it is the only correct method. It is less than ordinary interest.

Interest of $500 for 60 days at 6%=$500×6/100 ×(60/360)⅙=$5, ordinary interest. To compute exact interest, subtract ⅓ of the ordinary interest from itself. $5×⅓=$0.067. $5—$0.067=$4.93, exact interest.

Having found interest at 6%, the other rates can be found thus:—

12%=2×6%	7%=⅙ of 6%+6%
8%=⅓ of 6%+6%	5%=6%—⅙ of 6%
9%=1½×6%	4%=6%—⅓ of 6%
3%=½ of 6%	2%=⅓ of 6%

Compound Interest is the interest computed at certain intervals on the sum of the principal and unpaid interest. It is used by savings banks and life insurance companies.

Bank Discount is the compensation paid for the use of borrowed money, at the time of borrowing for the time given in the note. It is computed like interest and subtracted from the principal, the remainder being called the proceeds.

Algebra.—In the Aahmes copy before mentioned, the simple equation appears thus: "*Hau* (literally *heap*), its seventh, its whole, it makes 19"; if put in modern symbols means $\frac{x}{7}+x=19$.

The Egyptians made no further progress in algebra; the Greeks used it in connection with their wonderful system of geometry. In Euclid (*c.* 300 B. C.), we find formulas for $(a+b)^2$ with other algebraic relations worked out by geometric figures. Heron of Alexandria (*c.* 100 B. C.) solved quadratic equations. To Diophantus (last half of third or first half of fourth century A. D.) we are indebted for the first book written upon algebra chiefly. He used one unknown quantity, the symbols for equality and subtraction, while his favorite subject was indeterminate equations of the second degree. Aryabhatta, a Hindu mathematician (476), made some contributions, but no additions to the science. About 800 there came from Khwarazm, a province of central Asia, a mathematician, known from his birthplace as Al-Khowarazmi, who wrote the first great work and gave the science its present name. He called it *al-jabir;* it became in Latin, *algebrae,* in the sixteenth century English, *algiebar,* and modern English, *algebra.* For 700 years little advance was made in the science, until in Italy, Cardano, Tartaglia, Ferro, and Fiori solved cubic equations. Vieta, a Frenchman, was the founder of our present symbolic system (1591).

Algebra is the study of certain functions, including in a large degree the solution of equations. Letters represent quantity or number, the letters *a, b, c,* denoting known values and *x, y, z,* the unknown. A figure before a letter, as $9a$, is the numerical *coefficient* and means that a is multiplied by 9. When no numerical coefficient is used, 1 is understood. A small figure, placed after and a little above a letter, is an exponent; it shows how many times a number has been multiplied by itself, as $a^3=a\times a\times a$.

The signs + and — have two distinct uses: one as symbols of operation, as 10—8 and 4+3, the other that of quality, as —6.

Addition and *Subtraction.*—In both these processes similar or like quantities are written in the same vertical column. To *add,* begin at the left and add the numerical coefficients; when the signs are unlike (both plus and minus), add all the plus quantities and all the minus quantities separately; find the difference between their sums and place the sign of the greater sum before the result in each column. To *subtract,* consider the signs of the lower quantity changed and add as previously.

Add.	$-2a+3b-4c$	*Subtract.*	$-2a+3b-4c$
	$-5a+2b+3c$		$3a-2b+c$
	$4a-3b-2c$	*Dif.*	$-5a+5b-5c$
Sum.	$3a+2b-3c$		

Signs of aggregation, brackets, including the brace, parenthesis, and vinculum, occur frequently to show that the expressions within them are treated as one quantity. If a *minus* precedes an expression, all the signs within the brackets are changed when the quantities are

combined; if preceded by a *plus* no change is made. In removing the brackets begin with either the inner or outer pair:—

1. $a-[a+b-(c-d-e)+c]$
$=a-[a+b-(c-d+e)+c]$
$=a-[a+b-c+d-e+c]$
$=a-a-b+c-d+e-c$
$=-b-d+e$

2. $a-[a+b-(c-d-e)+c]$
$=a-a-b+(c-d-e)-c$
$=a-a-b+c-d-e-c$
$=a-a-b+c-d+e-c$
$=-b-d+e$

Multiplication. $a \times b = ab$. $a(b+c+d)=ab+ac+ad$. $2a \times 3a = 6a^2$. $2a^2b \times 7a^3b^2 = 14a^5b^3$. Numerical coefficients are always multiplied, exponents always added. Like signs produce + and unlike signs —. Begin at the left to multiply:—

$(2a+3b)(a-2b)$.

$$\begin{array}{r} 2a+3b \\ a-2b \\ \hline 2a^2+3ab \\ -4ab-6b^2 \\ \hline 2a^2-ab-6b^2 \end{array}$$

Division. $a \div b = \frac{a}{b}$. $6a \div 2a = 3$. $4a^2b^2 \div 2ab = 2ab$. Numerical coefficients are divided and exponents are subtracted. The same law of signs follows as in multiplication:—

1. $a^2+2ab+b^2$ | $a+b$

$a^2+2ab+b^2$ | $a+b$
a^2+ab | $a+b$
$+ab+b^2$
$+ab+b^2$

2. $ac+ad-7bc-7bd$ | $a-7b$

$ac+ad-7bc-7bd$ | $a-7b$
$ac-7bc$ | $c+d$
$+ad-7bd$
$+ad-7bd$

Multiplication formulas or short methods:—

1. $(a+b)^2=a^2+2ab+b^2$.

The square of the sum of two quantities equals the square of the first, + twice the product of the first by the second, + the square of the second.

2. $(a-b)^2=a^2-2ab+b^2$.

The square of the difference of two quantities equals the square of the first, — twice the product of the first by the second, + the square of the second.

3. $(a-b)(a+b)=a^2-b^2$.

The product of the sum and the difference of two quantities equals the difference of their squares.

4. The binomial theorem: a binomial consists of two terms, as $a+b$; the formula for raising a binomial to any power is called the binomial theorem. With n representing any value stated thus:—

$$(a+b)^n = a^n + na^{n-1}b + \frac{n(n-1)}{1 \cdot 2}a^{n-2}b^2 + \frac{n(n-1)(n-2)}{1 \cdot 2 \cdot 3}a^{n-3}b^3 \cdots .$$

Whenever n occurs in the formula write 3. $(a+b)^3=a^3+3a^2b+3ab^2+b^3$. Practice with these formulas will give facility in multiplication, division, factoring by inspection all fractional work and equations.

Factoring.—This process is of supreme importance in algebra; time is saved and greater ease secured in solutions. The most important types of factored expressions are: (1) $ab+ac$, involving a monomial; (2) ax^2+bx+c, the general trinomial quadratic in x; (3) cases involving the binomial factors of the form $x-a$.

Equations.—The expression of equality between two quantities is an equation: $6+7=13$, or $a+b=7$. The numerical value of the first member equals the numerical value of the second member. An equation is *satisfied* by a set of numbers which, substituted for the letters in the equation, make the value of the two members equal; as, $x-y=5$, when $x=8$ and $y=3$, *thus* $8-3=5$. To *solve* an equation is to find its *roots*, that is, the values of the unknown quantities which satisfy the equation; 9 is a root of $2x+2=20$. A *simple* or *linear* equation is one of the first degree, or one which in its simplest form contains only the first power of the unknown quantity: $9x-2=6x+7$. *Fractional* equations contain fractions: $\frac{x-2}{3}=\frac{3-x}{2}$. *Literal* equations have at least one unknown quantity expressed by a letter or letters: $x+a=bx-c$. *Simultaneous* equations are groups of equations which can be satisfied by the same values for the unknown quantities: $x+2y=5$ and $7x-3y=1$. A *quadratic* equation, or one of the second degree, contains the square of the unknown quantity, but no higher power: $x^2-4x=7$. The solution of equations depends upon the following principles: that the same number may be added to or subtracted from both members, or both members may be multiplied or divided by the same number without changing their value. Terms may be transposed from one member to another by changing their signs:—

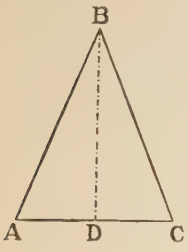
$6x-5=4x+1$
$6x-4x=1+5$. Subtracting $4x$ and adding 5.
$2x=6$ Uniting.
$x=3$ Dividing by 2.

Geometry. This branch of mathematical science is the science which treats of forms in space. The origin of the name, which means "earth measure" or "measure of land," is attributed by Herodotus to the resurvey of the Egyptian fields after the annual overflow of the Nile. Thales introduced it from Egypt into Greece, where it was highly developed. Pythagoras, who was Thales's pupil, discovered new proportions and formulated deductive geometry. Anaxagoras, Antiphon, Hippocrates, Democritus, Theodorus, and Plato followed, the latter devising a method of analysis and emphasizing the need of accurate definitions. Eudoxus invented proportion; Aristotle improved many of the definitions, but Euclid's work (300 B. C.) marks an epoch in the development of the science because of his simple and perfect logic. Euclid's "Elements" consists of 15 books and divides the subject into "elementary" and "higher" geometry. The elementary plane geometry studied to-day is based upon Euclid's "Elements." No other theories were advanced till the seventeenth century, when Pascal and Descartes made some discoveries in calculus, and Monge, at the end of the eighteenth century, reëstablished *pure* geometry in contrast to Descartes' "analytical." Since then the methods have been extended, but ten of Euclid's books are conceded valid for all geometry.

Two great systems have grown out of Euclid's *analytic* and *synthetic* or *modern*, which embrace descriptive and projective geometry. *Descriptive* geometry treats of the graphic solution of all problems involving three dimensions. It is a powerful agent in solving problems in mechanics, as planning machinery, arches, conduits, bridges, etc. *Projective* geometry investigates the properties of figures by projections, representations of any object on a perspective plane. This is of great importance in mathematics and geography. As the object of geometry is the indirect measurement of magnitude, further to show the relation of different magnitudes, it is applied to the study of astronomy, the theory of the pendulum, to optics, to mechanical arts, especially to civil, military, and naval engineering, and to sculpture.

Plane geometry treats of figures all of whose points lie in the same plane.

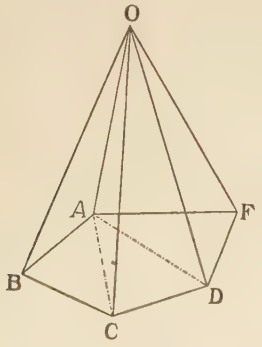
Theorem.—In an isosceles triangle the angles opposite the equal sides are equal.



Given the isosceles △ABC in which AB=BC, to prove ∠A=∠C. *Proof.* Let BD be drawn so as to bisect △ABC; then, in ◬ ABD and DBC, AB=BC; also BD=BD and ∠ABD=∠CBD. ∴ △ABD = △CBD, because two triangles are equal, if two sides and the included ∠ of one are equal, respectively, to two sides and the included ∠ of the other. ∴ ∠A=∠C, because they are homologous angles of equal triangles.

Solid geometry treats of solids or of the properties of space of three dimensions.

Theorem.—The volume of any pyramid is equal to one third the product of its base by its altitude.

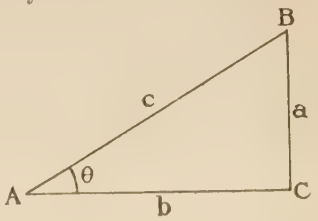


Given the pyramid O—ABCDF. V=volume, B=area of base, H=altitude, to prove V=⅓ B×H. *Proof.* Through any lateral edge, as OD, and the diagonals of the base, AD and AC, pass planes dividing the pyramid into △ pyramids; then V = the sum of the volumes of all the △ pyramids. The volume of each △ pyramid =⅓ its base × H, hence the sum of the volumes of all the △ pyramids = ⅓ sum of their bases × H, or ⅓ B×H, by substituting a quantity for its equal. ∴ V = ⅓ ×B×H. Things which are equal to the same thing are equal to each other.

Hyper-Geometry.—Many geometers have been led by their investigations to seek the properties of figures in space of more than three dimensions. A so-called fourth dimension has been developed, but it can only be demonstrated by the use of symbols. It is founded on the theories of motion:—

The path of a moving point is a line.
The path of a moving line is a surface.
The path of a moving surface is a solid.
The path of a moving solid is *n*.

Trigonometry.—This treats of the relations of angles in general and of the methods of expressing them by numbers for the purposes of mathematical computation. It is used in astronomy, physics, and engineering. *Plane* trigonometry treats of plane angles and triangles. *Spherical* trigonometry treats of spherical angles and triangles. The computations consist in determining from the given or known parts of a triangle those parts that are unknown and required. A triangle consists of six parts, three sides and three included angles. All parts can be determined when *one* side and any two other parts are known. The quadrant is the primary unit of trigonometry.



The functions of trigonometry are the ratios of certain sides of a right-angled triangle. In the figure, the ratio $\frac{a}{c}$ is called the sine of the angle Θ and is commonly written sin. $\Theta = \frac{a}{c}$. The ratio $\frac{b}{c}$ is called the cosine of the angle Θ, commonly written cos. $\Theta = \frac{b}{c}$. The ratio $\frac{a}{b}$ is the tangent of Θ and is written tan. $\Theta = \frac{a}{b}$. The ratio $\frac{b}{a}$ is the cotangent of Θ and is written cot. $\Theta = \frac{b}{a}$. The ratio $\frac{c}{b}$ is the secant of Θ, written sec. $\Theta = \frac{c}{b}$. The ratio $\frac{c}{a}$ is the cosecant of Θ, written cosec. $\Theta = \frac{c}{a}$.

These are called the functions and co-functions whose numerical values with the values in inches, feet, etc., constitute the alphabet of trigonometry. These ratios are calculated for ordinary purposes to six places of decimals to be used as divisors or multipliers. Tables of logarithms were devised to simplify these processes.

PRACTICAL GEOMETRY.

C=circumference. D=diameter. R=radius.
A=area. V=volume; Al.=altitude; B=base.
C=D×3.1416; C=R×6.283185; R=C×.159155; D=C×.31831.
A=R²×3.1416; A=D²×.7854; C²×.07958; ½C×½D.
Side of equilateral Δ inscribed in circle=D×.86.
Side of square inscribed in circle=D×.7071; C×.225.
Side of square equal in A to given circle=C×.282.
A of Δ=B×½Al.; A of parallelograms=B×Al.
A of ellipse=sum of 2D×.7854; average of 2D×3.1416.
A of sphere =C×D; D²×3.1416; C²×.3183.
V of sphere=A×⅙D; D³×.5236; R³×4.1888; C³×.016887.
Side of largest cube cut from sphere=R×1.1547.
Surface of cube =6×A of one of its sides.
V of cone or pyramid=A of B×⅓ Al.

TO CALCULATE THE COST OF PLASTERING, PAINTING, OR CALCIMINING A ROOM. (1) Measure, in feet, the distance around the walls.

(2) Multiply this length by the height of the room.

(3) Add to this the area of the ceiling.

(4) Subtract the areas of (*a*) windows, (*b*) doors, (*c*) base boards.

(5) Divide remainder by 9 to reduce to square yards.

(6) Multiply the number of square yards by the cost per square yard.

TO CALCULATE THE COST OF PAPERING A ROOM. Wall paper is made in rolls 18 inches wide and (single rolls) 8 yards long or (double rolls) 16 yards long.

A roll of border is the same length as a roll of wall paper.

There is always waste in matching, which must be allowed for; and the height of the room has a great deal to do with the number of strips which can be cut from a roll. Often a double roll cuts to better advantage than does a single roll.

There is also difficulty in allowing for doors, windows, and irregularities in shape.

Small pieces are used over doors and windows.

(1) Measure the distance around the room (perimeter) in yards, subtracting the width of doors and windows.

(2) Multiply the number of yards by 2, which gives the number of strips required, because a roll is a half-yard (18 inches) wide.

(3) Find the number of strips which can be cut from a roll.

(4) Divide the number of strips required by the number of strips which can be cut from a roll. The quotient is the number of rolls required.

TO CALCULATE THE NUMBER OF YARDS OF CARPET NEEDED FOR A ROOM. Ingrain carpet is usually 36 inches (1 yard) wide.

Brussels is 27 inches (¾ yard) wide.

Borders for carpet are 22½ inches (⅝ yard) wide.

One yard long of ingrain carpet contains one square yard.

One yard long of Brussels contains ¾ square yard.

Due allowance is to be made for loss from cutting and matching.

(1) Decide which way of the room the carpet is to run. Then measure the other way for width of room.

(2) Divide the width of the room by the width of the carpet. This result gives the number of strips required.

(3) Find the length of each strip (making proper allowance for matching).

(4) Multiply the length of each strip, in yards, by the number of strips required. The result is the number of yards of carpet which will be needed.

When border is needed, the distance around the room (measured at the base board), in yards, gives the number of yards of border needed.

TO MEASURE LUMBER. A board foot is 1 foot long, 1 foot wide, and 1 inch (or less) thick.

(1) Multiply the length in feet by the width in feet. This gives the number of board feet, if the piece is 1 inch or less thick. Or

(2) Multiply the length in feet by the width in inches and divide by 12. This also will give the number of board feet in the piece, if it is 1 inch or less thick.

Where the piece is more than 1 inch thick:—

(1) Multiply length in feet by width in feet, and this product by thickness in inches. Or

(2) Multiply length in feet by width in inches, and this product by thickness in inches, and divide the whole product by 12.

TO FIND THE NUMBER OF SHINGLES REQUIRED TO COVER A ROOF. Shingles are either 12, 14, or 16 inches long. They are of varying widths, but the average width of a shingle is taken at 4 inches.

Each bunch of shingles is regarded as containing 250 shingles, each 4 inches wide, because a bunch of shingles consists of 25 double layers (or 50 single layers) each 20 inches (the width of 5 average shingles) wide. For this reason the bunch is regarded as containing 250 shingles, and 4 such bunches make a thousand shingles.

Shingles are usually laid with 4 inches of the butt, or thick part, exposed to the weather, the other parts of the shingles overlapping.

(1) Find the whole area of the roof in square inches.

(2) Multiply the width of an average shingle (4 inches) by the number of inches of the shingle to be exposed to the weather.

(3) Divide the whole area of the roof in square inches by the last-named product and the result is the number of shingles required.

(4) To find cost, divide number of shingles required by 1,000, multiply quotient by cost per M.

TO ESTIMATE BRICKWORK. These facts regarding brickwork are useful in calculations:—

A brick is 4 inches wide, 2¼ inches thick, and 8¼ inches long.

Allow 7½ bricks to each superficial foot of a brick wall 4 inches (one brick) thick.

Allow 15 bricks for each superficial foot of wall 9 inches (two bricks) thick.

Allow ¼ of an inch to the length and thickness of each brick to allow for mortar in rough walls; but in face brickwork allow only ⅛ inch.

Allow 5 per cent. of brick for waste and breakage.

When estimating by the cubic yard, allow 500 bricks to the cubic yard.

For face work with narrow joints allow 575 bricks to the cubic yard.

In estimating material for a brick wall actual measurements are taken making allowance for openings.

In estimating labor girt measurements are taken, and, usually, a stated allowance made for openings, which is generally covered by contract. In ordinary chimneys each brick is laid on its broadest face and the walls are four inches thick.

CONTENTS OF BINS, CISTERNS, TANKS, ETC., IN BUSHELS, GALLONS, BARRELS, ETC.:—

A heaped bushel contains 2,747.71 cubic inches.
A stricken bushel contains 2,150.42 cubic inches.
A peck contains 537.6 cubic inches.
A quart contains 67.2 cubic inches.
A pint contains 33.6 cubic inches.
A hogshead contains 8.422 cubic feet.
A barrel contains 4.211 cubic feet.
A gallon (liquid) contains 231 cubic inches.
A quart (liquid) contains 57.75 cubic inches.
A pint (liquid) contains 28.875 cubic inches.

(1) Find the cubic contents of the vessel or bin in inches.

(2) Divide the contents by the number of cubic inches contained in the chosen unit, whether gallon, bushel, or barrel.

For quick, rough estimates it may be remembered that 1 cubic foot equals nearly .63 of a heaped bushel, or equals nearly .80 of a stricken bushel, or equals nearly 7.5 liquid gallons, or equals nineteen eightieths of a barrel. These fractions are to be used as multipliers of the cubic contents in corresponding dimensions. Thus—

Volume in cubic feet × .63 gives the number of heaped bushels.

Volume in cubic feet × .80 gives number of stricken bushels.

Volume in cubic feet × 7.5 gives number of liquid gallons.

Volume in cubic feet × nineteen eightieths gives the number of barrels.

CAPACITY OF CISTERNS.
FOR EACH 10 INCHES IN DEPTH.

25	feet in diameter holds	3059 gallons
20	feet in diameter holds	1958 gallons
15	feet in diameter holds	1101 gallons
14	feet in diameter holds	959 gallons
13	feet in diameter holds	827 gallons
12	feet in diameter holds	705 gallons
11	feet in diameter holds	592 gallons
10	feet in diameter holds	489 gallons
9	feet in diameter holds	396 gallons
8	feet in diameter holds	313 gallons
7	feet in diameter holds	239 gallons
6½	feet in diameter holds	206 gallons
6	feet in diameter holds	176 gallons
5	feet in diameter holds	122 gallons
4½	feet in diameter holds	99 gallons
4	feet in diameter holds	78 gallons
3	feet in diameter holds	44 gallons
2½	feet in diameter holds	30 gallons
2	feet in diameter holds	19 gallons

BOXES OF DIFFERENT MEASURE. A box 24 inches long by 16 inches wide, and 28 inches deep, will contain a barrel (3 bushels).

A box 24 inches long by 16 inches wide, and 14 inches deep, will contain half a barrel.

A box 16 inches square, and 8 2-5 inches deep, will contain one bushel.

A box 16 inches long by 8 2-5 inches wide, and 8 inches deep, will contain half a bushel.

A box 8 inches long by 8 2-5 inches wide, and 8 inches deep, will contain one peck.

A box 8 inches square, and 4 1-5 inches deep, will contain one gallon.

A box 7 inches long by 4 inches wide and 4 4-5 inches deep, will contain half a gallon.

A box 4 inches square, and 4 1-5 inches deep, will contain one quart.

ASTRONOMY.

Stars.—Stars are suns. They are so far away that they appear very small and their motions make only very slight changes in their apparent positions. The nearest star known to us is 275,000 times as far from us as we are distant from the sun, *i. e.*, 275,000 times 94,000,000 miles. The light from the stars travels at the rate of 186,330 miles per second. There are probably over 100,000,000 stars either visible or capable of affecting delicate photographic apparatus. Only 5,000 are visible to the naked eye. The stars are divided into magnitudes based upon the amount of light they send to us. There are 20 of the first magnitude, 65 of the second, 190 of the third, 425 of the fourth, 1,100 of the fifth, and 3,200 of the sixth. There are in all about 200,000 stars in the first nine magnitudes. The light received from a first magnitude star is 100 times that received from a sixth magnitude star. The motion of the stars, while considerable, is apparently very slight, because they are so far away. The greatest motion apparent to us is that of an eighth magnitude star in the southern heavens, which passes through an arc of 8.7 seconds in a year. At this rate it would take 220 years to traverse a space equal to the apparent diameter of the moon. The earliest known catalogue showing the positions of the stars is that of Hipparchus (100-170), who listed 1,080 stars; Tycho Brahe (1546-1601) listed 1,005 stars in 1580; Lalande (1732-1807) noted 47,390 stars; Argelander (1799-1875), 324,198 stars all in the northern hemisphere; Schönfeld (1828-1891) added 133,659 stars from the southern hemisphere; Gould (1824-1896) added 32,468 stars in Argentina; and a movement is now on foot to photograph the entire area of the heavens, requiring 22,000 plates, though for the present only about a million and a quarter of the brightest stars will be measured and catalogued. The Milky Way is a band of light about 20° wide extending entirely around the sky and composed of myriads of small stars visible by instruments. The Pole Star, or Polaris, is a second magnitude star in the constellation Ursa Minor, or the Little Bear. Its height above the horizon is the latitude of the place. In the Big Dipper, or Ursa Major, there are two stars which form the side of the dipper farthest from the handle. The line of these two, when produced about five times their distance apart, will strike the Pole Star. For this reason the two stars are called pointers. Polaris is a double star, one part is a star a little fainter than the second magnitude, the other a little fainter than the ninth. The parts are 18.5 seconds distant from one another. It takes the light from the North or Pole Star over 40 years to reach us. If from any cause Polaris ceased to emit light, it would be more than 40 years before we should find that fact out. A convenient sort of celestial yardstick is the distance from the first pointer of the Dipper to the Pole Star, which is about 28°. The distance between the two "pointers" is about 5° 20′. The diameter of the moon is about half a degree.

Constellations.—These are groups of stars classified by the religion of the ancients and preserved by astronomers for convenience in locating individual stars. *Ursa Major*, or the Greater Bear, contains the familiar Big Dipper. It is estimated that it takes the light from this system over 100 years to reach us. Mizar, a star at the bend of the handle, is a notable double star. Near it is a little star, Alcor, of the fifth magnitude. *Cassiopeia* is in a line from the middle of the handle of the dipper, through the North Star, and about 30° on the other side of the North Star. Polaris is about midway between these two constellations. Cassiopeia takes the form of a W composed of seven stars. Light from this system reaches us in a little more than nine years. *Lyra* is noted for its bright, conspicuous star, Vega. If the sun were as far from us as Vega now is, the sun would be only $\frac{1}{100}$ as bright as Vega is. *Hercules* lies between Lyra and Corona Borealis. It contains one star of the second magnitude, nine of the third, and twelve of the fourth. There is in it one of the most remarkable star clusters in the whole sky, visible to the naked eye on a clear, dark night. *Scorpio*, one of the constellations of the Zodiac and the finest of the southern constellations visible in the north, lies in the Milky Way. Antares, a fiery-red star of the first magnitude, gives a light equal to 900 of our suns. *Corona Borealis*, or the Northern Crown, lies to the west of Hercules, and consists of a semicircle of six small stars. *Boötes*, or the Hunter, is a large constellation near the Northern Crown and extending north from the equator. Arcturus, a brilliant star of the first magnitude, is the most notable star in this group. Its light reaches us in 100 years and it is equal in brilliancy to 1,300 of our suns. *Leo*, the Lion, contains a sickle of seven stars, of which Regulus is the most conspicuous. It is at the end of the handle of the sickle and the ecliptic passes very close to it. *Andromeda* is just south of Cassiopeia. It contains the Great Nebula, which is often visible to the naked eye. *Perseus* is in the Milky Way, near Andromeda. It is noted for the star Algol, or the Demon, of varying brightness. *Auriga*, the Charioteer, lies east of Perseus. Its brightest star is Capella, whose light reaches us in 32 years and is equal to 220 of our suns. *Taurus* is noted for the groups, the Hyades, containing the red star Aldebaran, and the Pleiades, forming a small dipper-like group of seven stars, one of which is so faint that it is often spoken of as "lost," though fairly good eyesight may detect it unaided. The brightest star of the Pleiades is Alcyone, whose light reaches us in 267 years and is 250 times brighter than the sun. *Orion* lies across the equator, near Taurus and Auriga. Betelgeuse and Rigel are famous stars in this group; the Belt of Orion is a row of stars; and the Sword of Orion contains the Great Nebula. *Canis Major*, or the Greater Dog, lies southeast of Orion. It contains Sirius, or the Dog Star, one of the stars nearest to us, yet its light takes 8.4 years to reach us, which means that it is 47,000,000,000,000 miles away. *Canis Minor*, or the Lesser Dog, is east of Orion and contains Procyon, a star of the first magnitude. *Gemini*, or the Twins, is just north of Canis Minor. It contains the two stars, Castor and Pollux; both are just a little below the first magnitude.

The Earth.—The earth is in shape an oblate spheroid, *i. e.*, a spherical body bulging at the equator and flattened at the poles. The longest arc actually measured on the earth's surface is that extending from Hammerfest in Norway to the mouth of the Danube River; another, almost as long, from the Himalayas to the southern extremity of India. From these measurements it is concluded that the radius from the center to the surface at the equator is 3,963.296 miles; and the radius at the poles, 3,949.790 miles. The equatorial diameter is nearly 27 miles greater than the polar. The total area of the earth's surface is about 200,000,000 square miles. At latitude 0°, or at the equator, one degree of latitude is 68.704 miles; at 30°, 68.881 miles; at 60°, 69.23 miles; and at 90°, or at the poles, 69.407 miles. At latitude 0°, or at the equator, one degree of longitude measures 69.652 miles; at 30°, 59.955 miles; at 40°, 53.431 miles; at 60°, 34.914 miles; and at 90°, or at the poles, all the meridians intersect and there is no longitude. The average density of the earth is about 5.5. The interior of the earth is very hot; but the theory that there is only a thin crust surrounding a molten mass is no longer believed by astronomers and physicists. It is now held that the earth is a solid mass; that the temperature within is above the melting point of most bodies at the surface, but, as the melting point increases with the pressure, it is believed that the pressure within the earth is great enough to maintain a solid state. The atmosphere surrounding the earth consists of about 79 per cent. of nitrogen, 21 per cent. of oxygen, about .0003 per cent of carbon dioxide, and very minute quantities of argon, neon, and helium, besides impurities. The atmosphere extends with rapidly decreasing degrees of density to probably a distance of 100 miles from the surface of the earth; but by far the greater part of the atmosphere is within a few miles of the surface. The earth rotates upon its axis and causes the alternation of day and night. As the circumference of the earth at the equator approximates 25,000 miles, and since the earth revolves completely upon its axis in about 24 hours, it follows that any given point on the earth's surface rushes forward from west to east at a rate of about 1,000 miles an hour. The earth revolves around the sun, which revolution defines the year and fixes the seasons. The orbit of the earth, or its path around the sun, is in the shape of an ellipse, but varying very slightly from a perfect circle. As the orbit of the earth measures over 560,000,000 miles, and since the earth moves over this space in one year, it follows that the earth travels around the sun at the rate of about 19 miles a second. This is in addition to the 1,000 miles an hour in its revolution on its axis. Half the length of the major axis of this ellipse is 93,000,000 miles, and this is the mean or average distance of the earth from the sun. When the earth is nearest to the sun, it is said to be in perihelion; when farthest away, in aphelion. In perihelion the earth is 3,000,000 miles nearer to the sun than when in aphelion. The ecliptic is the apparent path of the sun around the earth, and this ecliptic is inclined to the equator at an angle of about 23½ degrees.

The Moon.—The distance of the moon from the earth varies between 221,600 miles and 252,970 miles. The sun is 400 times farther away from the earth than the moon is. The moon rotates upon its axis once in a month. It always keeps the same side towards the earth. We have never seen the other side of the moon. The moon revolves around the earth. Its orbit is an ellipse very closely resembling a circle. When the moon is nearest to the earth, it is in perigee; when farthest away, in apogee. The real diameter of the moon is 2,163 miles, or about 27 per cent. (little more than one quarter) that of the earth. The volume of the moon is about $\frac{1}{50}$ that of the earth. A body weighed by a spring balance on the moon's surface would weigh one sixth of its weight on the earth's surface. The moon has no atmosphere; there is no water on the moon's surface, nor vegetation, nor snow. The surface is rocky, much cracked by extremes of heat and cold, and, maybe, covered in places by volcanic ashes. There are ten mountain ranges; some of the peaks rise over 20,000 feet, as shown by the shadows which the peaks cast. Over 30,000 craters have been mapped, some of which are from 50 to 60 miles in diameter. The surface is further marked by cracks, fissures, or rills, extending in some cases as much as 150 miles long.

Solar System.—The solar system is made up of the sun, the planets and their satellites, the planetoids, the comets, and the meteors. The sun is the center and the entire system is held together by the force of gravitation. The planets in order of their distance from the sun, beginning with the nearest, are Mercury, Venus, the Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. The planetoids are small planets and all but one lie between Mars and Jupiter. The comets and the meteors are wandering or perhaps only visiting bodies without regularly defined orbits. In measuring distances between planets, the distance from the earth to the sun—92,897,000 miles—is taken as the unit of measurement. In round numbers the distances of the planets from the sun are:—

Mercury,	36,000,000 miles.
Venus,	67,200,000 miles.
Earth,	92,900,000 miles.
Mars,	141,500,000 miles.
Jupiter,	483,300,000 miles.
Saturn,	886,000,000 miles.
Uranus,	1,781,900,000 miles.
Neptune,	2,791,600,000 miles.

The size of the planets is indicated by the diameters as follows:—

Mercury,	2,765 miles.
Venus,	7,826 miles.
Earth,	7,918 miles.
Mars,	4,352 miles.
Jupiter,	90,190 miles.
Saturn,	76,470 miles.
Uranus,	34,900 miles.
Neptune,	32,900 miles.

All of the planets, except Mercury and Venus, have satellites revolving around them. The Earth has the moon; Mars has two moons, each only a few miles in diameter; Jupiter has four large satellites and three very small ones; Saturn has ten satellites, one larger than Mercury and two very small; Uranus has four satellites; and Neptune, one.

Planetoids.—The planetoids known to science number about 500 and are found in the area between Jupiter and Mars. A few of them have diameters of from 100 to 500 miles, but the very great majority are much smaller, even down to 10 miles. Eros is the only planetoid which lies out of the area mentioned; it lies between the Earth and Mars at a mean distance of 135,500,000 miles. It does not exceed 20 miles in diameter.

Comets.—A comet consists of a *head*, a bright *nucleus* within the head, and the *tail* streaming out away from the sun. They are usually very far away from the earth. They vary in size from a head of 10,000 miles in diameter up to 1,000,000 miles; and a tail from a few millions of miles in length up to more than a hundred millions of miles.

Meteors.—Meteors, or "shooting stars," appear at altitudes of from 60 to 100 miles; move over paths of 40 or 50 miles at a rate of from 10 to 40 miles a second. The light is caused by friction with the earth's atmosphere. It is estimated that from 10,000,000 to 20,000,000 touch our atmosphere every day, but only the merest fraction of them are seen. When a number are seen at one time, a "meteoric shower" is said to occur. The greatest showers of meteors occur on November 15, when they seem to emanate from the sickle of Leo, and are thus called Leonides; and on November 24, when they emanate from a point in Andromeda, and are called Andromedes. So long as a meteor is 160,000 miles or over from the earth, it is most attracted by the sun; but within this distance the earth's attraction predominates. The course which the meteors will take under these influences is along the resultant of these two attractions.

Meteorites are bodies weighing from a few pounds up to 1,000 pounds, which fall upon the earth. Only a few are noted each year, but as so much of the earth's surface is covered by water, the meteorites which reach the earth annually may number 100. They are of stone, with iron, either pure or compounded, nickel, and other common chemical elements, totaling about 30.

The Sun.—The sun is one of the millions of stars. It is the source of our light and heat. It gives 600,000 times as much light as the full moon; and over 60,000 times as much as a candle at one yard distance. It is a 60,000 candle power light. If we could harness and utilize all of the energy which the sun gives us in the form of heat, we should have three horse power for every yard of surface exposed to the sun's rays. The temperature of the sun is about 10,000° Fahrenheit. The heat radiated from it would melt a layer of ice 4,000 feet thick over its entire surface every hour. The surface of the sun which we see is called the *photosphere*. Above the photosphere and extending out from 500 to 1,000 miles is the *reversing layer*. Another outside layer from 5,000 to 10,000 miles thick is the *chromosphere*, or the color sphere; it forms a brilliant scarlet fringe seen during an eclipse. The outermost portion is called the *corona*, or crown, of a pearly light visible only during an eclipse and extending outward from 200,000 to 300,000 miles, with some streamers stretching out over 5,000,000 miles. *Sun spots* are darker bodies, or spots on the photosphere, and may endure for a few days or for several months. The shadow, or *umbra*, of a sun spot may be anywhere from 500 to 50,000 miles across; the *penumbra*, or less dark belt, may be 200,000 miles across. One one-hundredth of the sun's entire surface may be involved at one time. The larger sun spots are easily visible through smoked glass or even by the naked eye when the sun is setting or rising. Galileo discovered sun spots in 1610. They have been the object of superstitious fear, and even in the present day attempts have been made to assosiate climatic disturbances with the occurrence of large sun spots. The sun rotates on its axis once in about 25 days.

Eclipses.—An eclipse of the moon is caused by the moon entering the shadow of the earth, or, in other words, by the earth passing between the sun and the moon. An eclipse of the sun is caused by the moon passing between us and the sun. And these eclipses may be total or partial. When the planet Venus, which is the next one between us and the sun, passes between us and the sun, we speak of that passage of the shadow across the sun's disc as a *transit*, not as an eclipse. Eclipses may be predicted, because of a law of recurrence known from ancient times. The sun and moon return to the same positions after a period of 6,585 days and 8 hours, or 18 years, 12 days, 8 hours. This period is called the *saros;* and eclipses of every sort repeat themselves at the end of every saros. The eclipses in 1900 were a repetition of those of 1882, 1864, 1846, 1828, and so on. On account of the eight hours during which the sun goes one third around the earth, the same portion of the earth is not exposed to the eclipse, and so every eclipse is not visible at the same places as in its previous occurrence. There will not be another transit of Venus until the year 2004 and again in 2012.

Seasons. The causes of the regular changes of conditions known as the seasons are the passage of the earth around the sun and the inclination of the earth's axis to the plane of its orbit. As the orbit of the earth is elliptical, one axis is longer than the other, so that the earth is not always at the same distance from the sun. As the axis of the earth is inclined to the plane of its orbit at an angle of 23½ degrees, the same part of the earth is not always inclined to the sun, and the sun's rays are not always perpendicular over the same place on the earth. In the season known to us as spring the sun's rays fall perpendicularly upon the equator; day and night are equal all over the earth; and the event is known as the vernal equinox, March 21. In midsummer, June 21, the sun's rays fall perpendicularly upon the tropic of Cancer; the northern hemisphere experiences its longest day, and the event is called the summer solstice because the sun appears to remain stationary on the ecliptic for a day or two before going south again. In autumn, September 21, the sun's rays fall perpendicularly at the equator; days and nights are equal all over the earth, and the event is called the autumnal equinox. In winter, December 21, the sun's rays fall perpendicularly upon the earth at the tropic of Capricorn; the day is shortest in the northern hemisphere and longest in the southern; the event is known as the winter solstice.

PHYSIOGRAPHY.

The Earth's Surface.—The division of the earth into land and water surface is slightly more than one fourth land, and slightly less than three fourths water, estimated as follows:—

Land Surface.

	Sq. Miles.		Sq. Miles.
Africa	11,817,277	Australasia	3,459,561
North America } South America }	15,418,662	Europe	3,875,670
		Polar regions	4,190,323
Asia	16,878,507	Total	55,640,000

Largest Islands in the World.

	Area Sq. Miles.	Population.
Greenland	512,000	11,893
New Guinea	313,183	706,000
Borneo	284,840	2,000,000
Madagascar	226,015	2,706,661
Nippon (Japan)	162,153	46,724,340
Sumatra	161,542	4,029,503
Great Britain	88,729	36,999,946
Celebes	71,470	851,905
New Zealand, South Island	58,525	411,340
Java and Madura	50,554	30,098,008
New Zealand, North Island	44,468	476,732
Cuba	44,000	2,048,980
Newfoundland	42,734	217,037
Luzon (Philippines)	40,969	3,798,507
Iceland	39,756	78,470
Ireland	32,360	4,458,775
Jesso (Yezo)	30,143	922,058
Saghalin (penal settlement)	29,000	28,113
Haiti	28,249	1,670,000
Tasmania	26,215	172,475
Ceylon	25,332	3,578,333
Tierra del Fuego	20,000	1,703

Water Surface.

	Sq. Miles.		Sq. Miles.
Atlantic Ocean	34,700,000	Arctic Ocean	4,470,000
Pacific Ocean	67,570,000	Southern Ocean	5,610,000
Indian Ocean	28,900,000	Esiimated area	141,250,000

Including inland seas and other waters, it is estimated that the total water surface of the globe exceeds 143,000,000 square miles.

Areas, Depths, and Heights of Great Lakes.

Lakes.	Length Miles.	Width Miles.	Max. Depth Feet.	Height above Sea (feet).	Area Square Miles.
Erie	240	30-58	200	573	9,960
Huron	250	190	700	581	22,320
Hichigan	325	75	870	581	22,500
Ontario	190	55	738	247	7,240
Superior	412	167	1,008	602	31,200

The Longest Rivers in the World.

Name.	Miles.	Name.	Miles.
Africa.		**America (So.)—Cont**	
Nile	3,670	Rio Negro	1,400
Niger	2,600	Orinoco	1,490
Congo	2,500	**Asia.**	
Zambesi	1,650	Yenisei	3,250
Orange	1,270	Hoang-ho	2,580
America (North)		Lena	2,860
Mississippi and Missouri	4,200	Obi	2,500
St. Lawrence	2,200	Amur	2,780
Mackenzie	2,490	Euphrates	1,730
Saskatchewan	1,090	Ganges	1,557
Rio Grande	1,740	Indus	1,800
Arkansas	2,000	**Australasia.**	
Columbia	1,400	Murray	1,500
Ohio and Alleghany	1,300	**Europe.**	
Red River	1,550	Volga	2,293
Colorado	1,080	Danube	1,777
America (South).		Ural	1,400
Amazon	3,300	Don	1,156
Rio Madeira	2,200	Dneiper	1,336
Parana	2,720	Rhine	760
Rio de la Plata	2,300		
San Francisco	1,550		

Depths of the Oceans, Greatest.—The depths of the oceans as given by the *Challenger* Expedition are:—

	Feet.		Feet.
Atlantic Ocean	27,366	Southern Ocean	18,000
Pacific Ocean	31,614	Arctic Ocean	12,000
Indian Ocean	20,000		

Inland Seas and Other Waters.

	Area in Sq. Miles.		Area in Sq. Miles.
Azof, Sea of	15,000	Gulf of Mexico	600,000
Baltic Sea	160,000	Gulf of St. Lawrence	101,075
Bering Sea	864,555	Japan Sea	383,205
Black Sea	165,000	Mediterranean Sea	977,000
Caspian Sea	170,000	North Sea	197,500
China Sea	472,210	Persian Gulf	88,600
Dead Sea	360	Red Sea	170,820
English Channel	30,000	Aral Sea	26,160

Temperature and Rainfall of Foreign Cities.

Cities.	Mean Annual Temperature.	Annual Average Rainfall, Inches.	Cities.	Mean Annual Temperature.	Annual Average Rainfall, Inches.
Alexandria	69.0	10	London	50.8	25
Algiers	64.3	27	Lyons	53.0	28
Amsterdam	49 9	30	Madeira	66.0	25
Archangel	33.0	14.52	Madrid	58.2	9
Astrakhan	50.1	6	Malta	66.0	20
Athens	63.0	20	Manila	78.4	50
Bagdad	74.0	19	Maranhao	...	277
Barcelona	63.0	18	Marseilles	58.3	23
Berlin	48.2	24	Melbourne	57 0	29
Bermuda	72.0	55	Mexico	60.9	29
Berne	46 0	46	Milan	55.1	38
Bombay	81.3	75	Montevideo	62.0	44
Bordeaux	57.0	30	Montreal	44.6	30
Brussels	50.0	29	Moscow	40.0	27
Budapest	51.9	17	Munich	48.4	19
Buenos Aires	62.8	12	Naples	60.3	30
Cairo	72.2	12	Nice	58.0	29
Calcutta	82.4	76	Odessa	48.0	26
Canton	71.0	39	Para	81.0	71
Cape Town	62.0	23	Paris	51.3	22
Cherra Punji*	...	610	Peking	53.0	27
Christiania	41.5	26	Port Said	...	2
Constantinople	56.5	21	Prague	50.2	14
Copenhagen	46.6	19	Quebec	40.3	30
Delhi	77.0	24	Quito	60.9	2.5
Dublin	50.1	29	Rio de Janeiro	77.2	29
Edinburgh	47.1	38	Rome	60.5	31
Florence	59.2	41	Santo Domingo	81.3	108
Frankfort	50.0	16.4	Shanghai	59.0	37
Geneva	52.7	32	St. Petersburg	39.6	17
Genoa	61.1	47	Stockholm	42.3	20
Hamburg	47.0	36	Sydney	65.8	49
Havana	79.1	91	Tobolsk	32.0	18
Hongkong	73.0	101	Trieste	55.0	43
Honolulu	75.0	33	Valdivia	52.0	106
Iceland	39.0	30	Valparaiso	64.0	10
Jerusalem	62.6	16	Venice	55.4	34.1
Lima	73.3	0	Vienna	51.0	19
Lisbon	61.4	27	Warsaw	56.2	21

*In southwestern Assam. It is the wettest place in the world. In 1861 the rainfall there reached 905 inches.

NOTE.—The mean annual temperature of the globe is 50 degrees Fahrenheit. The average rainfall is 36 inches.

Average Annual Temperature in United States.

Place of Observation.	Average Temperature.	Place of Observation.	Average Temperature.
Tucson, Arizona	69	Ft. Gibson, Oklahoma	60
Jacksonville, Florida	69	Raleigh, N. Carolina	59
New Orleans, La	69	Atlanta, Georgia	58
Austin, Texas	67	Nashville, Tennessee	58
Mobile, Alabama	66	Richmond, Virginia	57
Jackson, Mississippi	64	Louisville, Kentucky	56
Little Rock, Arkansas	63	San Francisco, Cal	55
Columbia, S. Carolina	62	Washington, D. C	56

Average Annual Temperature in United States—*Continued.*

Place of Observation.	Average Temperature.	Place of Observation.	Average Temperature.
St. Louis, Missouri	55	Camp Scott, Nevada	50
Baltimore, Maryland	54	Des Moines, Iowa	49
Harrisburg, Pa	54	Omaha, Nebraska	49
Wilmington, Delaware	53	Denver, Colorado	48
Trenton, New Jersey	53	Boston, Massachusetts	48
Columbus, Ohio	53	Albany, New York	48
Portland, Oregon	53	Providence, R. I.	48
Ft. Boise, Idaho	52	Detroit, Michigan	47
Salt Lake City, Utah	52	Ft. Randall, S. Dakota	47
Romney, West Virginia	52	Sitka, Alaska	46
Indianapolis, Indiana	51	Concord, N. H.	46
Leavenworth, Kansas	51	Augusta, Maine	45
Santa Fe, New Mex. Ter.	51	Madison, Wisconsin	45
Steilacoom, Wash.	51	Helena, Montana	43
Hartford, Conn.	50	Montpelier, Vermont	43
Springfield, Illinois	50	St. Paul, Minnesota	42

Average Annual Rainfall in United States.

Place.	Inches.	Place.	Inches.
Neahbay, Wash.	123	Ft. Vancouver, Wash.	38
Sitka, Alaska	83	Cleveland, Ohio	37
Ft. Haskins, Oregon	66	Pittsburg, Pa	37
Mt. Vernon, Alabama	66	Washington, D. C.	37
Baton Rouge, Louisiana	60	W. Sulphur Springs, Va.	37
Meadow Valley, Cal.	57	Ft. Gibson, Oklahoma	36
Ft. Tonson, Oklahoma	57	Key West, Florida	36
Ft. Myers, Florida	56	Peoria, Illinois	35
Washington, Arkansas	54	Burlington, Vermont	34
Huntsville, Alabama	54	Buffalo, New York	33
Natchez, Mississippi	53	Ft. Brown, Texas	33
New Orleans, Louisiana	51	Ft. Leavenworth, Kan.	31
Savannah, Georgia	48	Detroit, Mich.	30
Springdale, Kentucky	48	Milwaukee, Wisconsin	30
Fortress Monroe, Va.	47	Penn Yan, New York	28
Memphis, Tennessee	45	Ft. Kearney, Neb.	25
Newark, New Jersey	44	Ft. Snelling, Minnesota	25
Boston, Massachusetts	44	Salt Lake City, Utah	23
Brunswick, Maine	44	Mackinac, Michigan	23
Cincinnati, Ohio	44	San Francisco, Cal.	21
New Haven, Conn.	44	Dallas, Oregon	21
Philadelphia, Pa.	44	Sacramento, California	21
Charleston, S. Carolina	43	Ft. Massachusetts, Colo.	17
New York City, N. Y.	43	Ft. Marcy, New Mex. Ter.	16
Gaston, S. Carolina	43	Ft. Randall, S. Dakota	16
Richmond, Indiana	43	Ft. Defiance, Arizona	14
Marietta, Ohio	43	Ft. Craig, New Mex. Ter.	11
St. Louis, Missouri	43	San Diego, California	9
Muscatine, Iowa	42	Ft. Colville, Wash.	9
Baltimore, Maryland	41	Ft. Bliss, Texas	9
New Bedford, Mass.	41	Ft. Bridger, Wyoming	6
Providence, R. I.	41	Ft. Garland, Colorado	6
Ft. Smith, Arkansas	40	Yuma, Arizona	2.81

Velocity and Force of Winds.

Description.	Miles per Hour.	Feet per Minute.	Feet per Second.	Force in lbs. per Square Foot.
Just perceptible	1	88	1.47	.005
	2	176	2.93	.020
Perceptible	3	264	4.4	.044
Gentle breeze	4	352	5.87	.079
	5	440	7.33	.123
Pleasant breeze	10	880	14.67	.492
	15	1,320	22.0	1.107
Brisk wind	20	1,760	29.3	1.968
	25	2,200	36.6	3.075
High wind	30	2,640	44.0	4.428
	35	3,080	51.3	6.027
Very high wind	40	3,520	58.6	7.872
	45	3,960	66.0	9.963
Storm	50	4,400	73.3	12.300
Great storm	60	5,280	88.0	17.712
	70	6,160	102.7	24.108
Hurricane	80	7,040	117.3	31.488
	100	8,800	146.6	49.200

Relief Features of the Land.—Continents are made up of plains, plateaus, and mountains. *Plains* are coastal and interior. A good example of coastal plains are those on the Atlantic coast south of New York, and upon the Gulf coast. Interior plains are such as the Upper Mississippi plains and the Great Plains west of the Mississippi. Examples of *plateaus* are to be found just west of the Appalachian Mountains, where the Alleghany Plateau is formed; just north of the Wachita Mountains, where the Ozark Plateau is seen; the Great Plateau east of the Rocky Mountains, and the Lava Plateau, Basin Range Plateau, and Colorado Plateau, west of the Rocky Mountains. Plains are the most habitable parts of a country. In the United States three fifths of the population live at an altitude of 100 to 1,000 feet; one fiftieth, about 2,000 feet. The loftiest plateau in the world is the Plateau of Tibet, 15,000 to 16,000 feet high; one of the most picturesque is in northern Arizona, 7,000 feet high, containing the Grand Cañon of the Colorado, a mile deep.

The Loftiest Volcanoes.

Name and Location.	Feet.	Name and Location.	Feet.
Chimborazo, Ecuador	20,498	Mauna Loa, Hawaii	13,671
Misti, Peru	20,320	Alaghez, Russia	13,500
Cotopaxi, Ecuador	19,613	Colima, Mexico	12,750
Antisana, Ecuador	19,335	Rinjani, Malay	12,460
Cayambé, Ecuador	19,186	Fujiyama, Japan	12,440
Demavend, Persia	19,000	Erebus, Antarctic Land	12,362
Tutupaca, Peru	18,960	Tenerife, Canary Is.	12,192
Tolima, Colombia	18,316	Iliamna, Alaska	12,066
Orizaba, Mexico	18,310	Lamongan, Java	12,040
Huila, Colombia	18,000	Irazu, Costa Rica	11,198
Popocatapetl, Mexico	17,833	Etna, Sicily	10,740
Maipu, Chile	17,700	Agong, Sunda Is.	10,500
Sangai, Ecuador	17,459	Haleakala, Hawaii	10,032
Ixtaccihautl, Mexico	17,337	Bandai-san, Japan	6,000
Klyuchev, Kamchatka	16,990	Asosan, Japan	5,630
Tunguragua, Ecuador	16,690	Kirishima-yama, J'p'n.	5,530
Punchincha, Ecuador	15,700	Pelée, Martinique	5,200
Purace, Colombia	15,416	Hekla, Iceland	5,110
Toluca, Mexico	15,000	Vesuvius, Italy	4,000
Mauna Kea, Hawaii	13,805	Stromboli, Italy	3,040

The Highest Mountains.

	Feet.
Everest, India	29,002
Godwin-Austen, India	28,278
Dapsang, Tibet	28,273
Kankanjanga, India	28,156
Dhaulagiri, India	26,826
Nanga Parbat, India	26,614
Mustagh Ata, E. Turkestan	25,800
Tagharma, E. Turkestan	25,800
Masherbrum, India	25,653
Nanda Devi, India	25,560
Rakaposhi, India	25,550
Tirach Mir, India	25,420
Khan Tengri, E. Turkestan	24,010
Chamalhari, Tibet	23,929
Gaurisankar, Nepal	23,447
Aconcagua, Chile	23,088
Kaufmann, Russian Turkestan	22,993
Illimani, Bolivia	22,500
Huascan, Peru	22,045
Tupungato, Chile	22,000
Sorata, Bolivia	21,484
Parinacota, Chile	20,984
Famatina, Argentina	20,680
McKinley, Alaska	20,464
Nenda, China	20,000
Kilima-Njaro, E. Africa	19,780
Tacora, Chile	19,736
Logan, Canada	19,540
Kenia, E. Africa	18,620
Elbruz, Russia	18,526
St. Elias, Alaska	18,024
Wrangell, Alaska	17,500
Iliniza, Ecuador	17,380
Dykhtau, Russia	17,049
Ararat, Turkey	17,000
Koshtantau, Russia	16,876
Stanley, E. Africa	16,815
Kazbek, Russia	16,546
Thok Jalung, Tibet	16,325
Haramak, Nepal	16,000
Crillon, Alaska	15,900
Savalan, Persia	15,787
Mont Blanc, France	15,780
Monte Rosa, Italy	15,213
Abba Yared, Abyssinia	15,015
Gulku, Abyssinia	14,860
Weisshorn, Switzerland	14,799
Matterhorn, Switzerland	14,705
Whitney, California	14,502
Massive, Colorado	14,424
Tyndall, California	14,386
Shasta, California	14,380
Rainier, Washington	14,363
Gray, Colorado	14,341
Rosalie, Colorado	14,340
Castle, Colorado	14,259
Princeton, California	14,196
Holy Cross, Colorado	14,176

Atmospheric Forces.—The forces exerted by the atmosphere are those of the wind and chemical forces. The atmosphere is everywhere laden with *dust*—on mountain tops, over the ocean, and over the ice fields of the polar regions. The microscope shows that atmospheric dust is composed of grains of pollen from plants, bits of vegetable fiber, hairs, mineral and rock fragments, metallic iron, fungi, bacteria, and disease germs. Dust particles in the air reflect sunlight into shady places; without them all shady places would be black. They soften direct sunlight; for without them the sun would be of dazzling brightness, shining out of a black sky in which the stars would be visible in daytime. They cause or affect the blueness of the sky and the glorious tints of the sky at sunrise and sunset. Water vapor in the air coats the particles of dust, and condensation, causing clouds and rain, follows. Dust, then, is an important, though not a necessary, factor in rain-making. Volcanic dust is thrown into the atmosphere and widely distributed over the world during volcanic eruptions. After the eruption of Soufrière, in the island of Martinique, in 1902, a layer of volcanic dust from five to six feet deep was deposited five miles distant; and it is estimated that some of this dust was in the air for three years and went several times around the earth before settling.

Loess is a dust-like earthy material, the grains of which are smaller than those of sand, but larger than those of clay. These are carried by the wind, and are capable of compacting and forming bluff-like mounds of great solidity. They are to be found in China, Europe, and in many parts of the Mississippi basin. The two most marked *chemical effects* of the air are oxidation and carbonation. *Oxidation* is the effect of the oxygen of the air upon many substances in rocks, most notably upon iron. This rusts or hydrates, and the rocks crumble away. *Carbonation* is caused by the action of the carbon dioxide or carbonic acid gas in the air which unites with some constituents of rocks and causes them to crumble. These are potent forces in the weathering of rocks which make large and valuable contributions to soils. *Freezing* and *thawing*, due to changes in the temperature of the air, are important atmospheric forces. The expansion of frozen water in cracks of rocks acts as a powerful wedge which in time drives the parts asunder and breaks the rocks in pieces. Even the contraction and expansion of rocks under the great ranges of temperature of the air, heated by day and cooled at night, has a similar effect. Masses of rocks on slopes, slightly covered by layers of loose material, gradually peel off under this effect, and, though the process is slow, the cumulative effect of slight changes upon large areas is very great. Roots of plants penetrating crevices in rocks accomplish the same results; and the genus of plants known as the Saxifrage (rock-breakers) exerts a wonderful effect for such slight and delicate agents. Trees growing in crevices of rocks are not of infrequent occurrence. In time their roots bring about important changes in the rocks into which their roots penetrate. The mass of rocks and loosened soil torn up by the roots of trees blown down by heavy winds are also contributory to the same results.

Water Forces.—The effects of water upon the land are seen after heavy falls of rain, rapid melting of snow, and the consequent filling of streams, and in the force of waves from lakes and seas. The average rainfall the world over is about 40 inches a year. In computing the rainfall, from 10 to 12 inches of snow are regarded as equivalent to one inch of rain. If this quantity of water fell at one time it would be sufficient to cover the surface of the land with more than three feet of water. The rainfall varies in different parts of the world.

Ground Water.—Forty inches of rainfall over the whole land equals about 35,000 cubic miles of water in a year. Only about 6,500 cubic miles of this is emptied into the sea by rivers. Part of the remainder sinks into the soil, depending upon the porosity of the earth upon which it falls; part lodges in lakes and pools upon the surface; part runs off the soil; and part is evaporated. That part which soaks into the soil is ground water. It is thought that the water which soaks into the earth does not penetrate deeper than five or six miles. Ground water is not evenly distributed throughout the soil; for in some localities water in well-digging is found in sufficiently large quantities at only a few feet, while in other places it is necessary to bore down hundreds or even thousands of feet before a supply of water can be procured. St. Louis has an artesian well over 4,000 feet deep; Berlin has one the same depth; one in Cincinnati is about 2,500 feet; Chicago has one about 2,700 feet; and there are many over 1,000 feet deep. Ground water is constantly moving, upon the theory that water seeks its own level, but ground water never attains it, because of the added supply which rain constantly brings. Part of the ground water flows into wells or springs; part flows underground into lakes and ponds; part is drawn up by the capillarity of cultivated soil and feeds the roots of plants and trees; and part escapes from the soil by invisible evaporation. When ground water forms a spring, it often passes through soil and rocks which contain substances which are capable of being dissolved by it. In this way salt, mineral, and medicinal springs are formed. When the water has reached considerable depths and has come in contact with hot rocks, a hot spring may be formed, such as the Hot Springs of Arkansas, South Dakota, and Carlsbad in Bohemia. When the hot water is forced out of the spring at intervals a geyser is formed. The most celebrated is the Great Geyser of Iceland. It consists of an immense well, or funnel, 10 feet wide at its mouth, and about 70 feet deep, surmounted at the surface with a basin 65 feet in diameter and 7 feet deep, formed by the deposit of mineral matter from the water. At intervals it sends up a column of water and steam to the height of 100 feet. More remarkable even than the geysers of Iceland are some that are found in the "National Park." One, the Giantess, throws water to the height of 200 feet. Another is known as "Old Faithful," because it discharges its waters regularly once an hour. Grasshoppers and other insects, and pieces of wood which fall into the waters, soon become incrusted with quartz, which is held in solution by the water, thus permanently petrifying them.

Ground water in its passage through the soil dissolves out of the rocks and soil many mineral substances and disintegrates the structure, forming caves after long periods.

The Mammoth Cave is situated in Edmondson County, near Green River, Kentucky, and extends some nine miles. It contains a succession of wonderful avenues, chambers, domes, abysses, grottoes, lakes, rivers, and cataracts. One chamber, the Star, is about 500 feet long, 70 feet wide, and 70 feet high; the ceiling is composed of black gypsum, and is studded with innumerable white points, that by a dim light resemble stars; hence the name. There are avenues one and a half and even two miles in length, some of which are incrusted with beautiful formations, and present a most dazzling appearance. There is a natural tunnel about three quarters of a mile long, 100 feet wide, covered with a ceiling of smooth rock, 45 feet high. Echo River is some three fourths of a mile in length, 200 feet in width at some points, and from 10 to 30 feet in depth, and runs beneath an arched ceiling of smooth rock about 15 feet high; while the Styx, another river, is 450 feet long, from 15 to 40 feet wide, and from 30 to 40 feet deep, and is spanned by a natural bridge. Lake Lethe has about the same length and width as the river Styx, varies in depth from 3 to 40 feet, lies beneath a ceiling some 90 feet above its surface, and sometimes rises to a height of 60 feet. There is also a Dead Sea. The entrance to the cave is reached by passing down a wild, rocky ravine through a dense forest. To visit the portions of this wonderful cave already traversed requires, it is said, 150 to 200 miles of travel.

Wyandotte Cave and others in southern Indiana, and Luray Cave and others in Virginia, are of similar origin. Some of the solid matter forms bodies, like icicles, called stalactites when they hang from the ceilings, and stalagmites when they rise up from the ground. In the same way crystals form upon the walls. When water carrying mineral matter held in suspension flows into cracks of rocks, these cracks become filled in time with the mineral matter, and veins are formed which often carry gold, silver, and other ores. When ground water charged with solutions of mineral matter falls upon trunks of trees and other vegetable matter, the mineral matter is deposited and takes the place of the vegetable matter as it decays, and in this way petrifaction takes place. The mechanical burrowing under the soil by ground water often results in landslides where great masses of land slide down from sloping positions, burying other regions under the mass and often destroying life and property. History records many such catastrophes.

Running Water.—In the ordinary gentle flow of streams and rivers a great deal of sediment or alluvial matter is borne along and deposited in their courses. But the most marked and violent results follow from floods, to which streams and rivulets so often contribute.

Great Floods and Inundations.—An inundation in Cheshire, England, 353.—3,000 persons perished.

Glasgow, 758.—More than 400 families drowned.

Flanders, 1108.—Inundated by the sea, and the town and harbor of Ostend completely submerged.

Dort, April 17, 1421.—72 villages submerged; 100,000 people drowned.

Overflow of the Severn, 1483, lasting ten days. —Men, women, and children carried away in their beds, and the waters covered the tops of many mountains.

General inundation in Holland, 1530.—By failure of dikes; 400,000 said to have been drowned.

At Catalonia, 1617.—50,000 drowned.

Johnstown, Pa., May 31, 1889.—A bursting mountain reservoir destroyed the town by flood, drowning about 6,000 people.

Galveston, Tex., Sept. 8, 1900.—Sea waves, driven by wind, flooded the city, 6,000 killed, $30,000,000 worth of property destroyed.

Paris, France., Jan. 26-30, 1910. The Seine rose 30 feet above low water level, covering nine square miles, or about one quarter of the entire area of the city. The streets near the river had a depth of 12 feet of water. There was 250,000 to be fed and clothed, with over 100,000 unemployed. Over $200,000,000 worth of property destroyed. Americans subscribed $700,000 of the relief fund

In the making of streams and rivers the tiny streamlets flow through gullies or ravines into the larger streams which flow through valleys. On their way all of these carry more or less mud suspended in the waters, while swift flowing currents carry along pebbles, gravel, and even larger stones in their channels. It is estimated that a river like the Mississippi carries every year a mass of earthy material equal to 400,000,000 tons which it deposits in the Gulf in that peculiar delta or farther out. This equals more than a million tons a day. It is thought that all of the rivers of the earth carry forty times as much as the Mississippi or sixteen thousand millions of tons. This does not consider the dissolved matter which is carried in solution in the water, and is estimated at about one third more, or 5,000,000,000 tons. Where a river flows swiftly it does not deposit its sediment. James B. Eads took advantage of this fact in 1875, and by contracting or narrowing the outlets of the Mississippi by jetties, he compelled it to force the sediment out into the Gulf and to keep the channels clear to permit ocean navigation from New Orleans. There is a tendency for every stream to wear its valleys both deeper and wider. The deepest valleys are found in plateaus and mountainous regions. The Grand Cañon of the Colorado in Arizona is one mile deep and at its widest part from 8 to 10 miles in width at the top. In Yellowstone Park there is a cañon below the falls about 1,000 feet deep. Inequalities in the hardness of the rocks in a river bed give rise to rapids and falls. The distinction between rapids and falls is only a question of grade or steepness of descent.

The Great Waterfalls. — Waterfalls are formed by a current of water passing rapidly from a higher to a lower level. They are found most frequently in mountainous regions where many streams from the mountain sides unite in the valley. They change their appearance from year to year owing to erosion or the wearing

away of the rocks. Among the highest waterfalls are the following:—

Yosemite (3 plunges)	2660 feet.
Oroco Falls of Monte Rosa	2400
Roraima Fall, Guiana (2 plunges)	2000
Grand Falls of Labrador	2000
Sutherland Falls, New Zealand (3 plunges)	1904
Kukenam Fall, Guiana (sheer plunge)	1500
Gavarnie Fall, Pyrenees	1400
Krimmler Falls, Austria	1300
Staubbach, Switzerland	1000
Vermafos, Norway	984
Maanelvan, Norway	940
Bridal Veil, California (with cascades)	900
Vettisfos, Norway	853
Rjukanfos, Norway	804
Kaieteur Falls, Guiana	740
Skykjefos, Norway	700
Nevada Fall, California	600
Velino Falls, Italy (3 plunges)	591
Tessa Falls, Austria (3 plunges)	541
Vöringsfos, Norway	520
Rukaufos, Norway	513
Great Falls, Montana	500
Tequendama, Colombia	475
Gastein Falls, Austria	469
Victoria Falls, Zambesi	400
Shoshone, Idaho	210
Foyers, highest in Britain (2 plunges)	205
Hay River, Alaska	200
Niagara	165

It is estimated that Niagara Falls has a force of about 4,000,000 horse power. In the wearing away it is estimated that Niagara Falls has receded about 7 miles. Estimates have been made of the rate at which it is now receding, and of the time when there will be no falls. But that is what every waterfall is tending to, for all rivers will one day reach a base level. In the work of erosion there are many instances where a mass of rock harder than its fellows has withstood the ravages to which they have yielded. Such masses of rock standing alone as hills or even mountains, are called "monadnocks." When it takes the form of a long, narrow ridge it is called by some a "hog back." In the West these are called "buttes." When flat-topped and table-like, it is a "mesa."

Snow and Ice.—The snow-line on mountains varies with the latitude of the place, being higher at the equator and lower as the poles are approached. Near the equator the snow-line is about 18,000 feet above the sea-level. On the north side of the Himalayas, facing the plateau of Tibet, it is at 19,500 feet. In the Caucasus and in the Rocky Mountains it is about 11,000 feet. In the Alps it is between 7,500 and 9,000 feet. In Iceland, on the Arctic Circle, it is about 3,000 feet. In Spitzenberg it is almost at the sea-level. Snow is seldom known to fall between north and south latitudes of 33°. It is estimated that the total amount of snow and ice on the land amounts to 1,000,000 cubic miles, which, if melted, would raise the sea-level over 30 feet. Glaciers are heavy and compacted snow-fields which creep out of their positions, move down slopes, or spread in all directions if the surface upon which they rest is level. When a glacier cracks open, a crevasse is formed. Great masses of stone and earth are carried by glaciers. This transported matter is called glacier débris. Flat rocks prevent the sun's rays from melting the ice directly under them, and a column of ice remains supporting the stones, giving the whole the appearance of a huge toadstool. As the glacier creeps along and is melted or wasted by the sun's rays at one end, it is being constantly fed or replenished by the snow-fields at the other. The creeping motion of the glacier has been measured by planting rows of stakes along its lower margin. It has been found that the rate of descent of most glaciers is about a foot or two a day, though one huge glacier in Iceland moved over 100 feet a day. Glaciers are numerous in the Alps, where more than 2,000 are known, the longest being 10 miles long and the greater number less than a mile long. In the Caucasus Mountains, the Himalayas, Greenland, and especially in Alaska and Canada, glaciers abound. South of Canada the glaciers are of much less size. Greenland, with its area of from 400,000 to 600,000 miles, is one vast ice field, except on its borders. From these and similar ice formations, great masses break off and float away as icebergs. The great force of glaciers is seen in the polishing, grinding, and powdering effect upon rocks, as well as the transportation of bowlders, stones, and gravel.

Volcanoes.—A volcano is a vent in the earth's crust through which liquid rock or lava and solid rock are emitted. As the material gathers, a cone is formed around the opening or crater. Among active volcanoes the best known are Stromboli, on a small island north of Sicily, about one mile high, and in constant activity; Vesuvius, 4,000 feet high, on the Bay of Naples, disastrously active in the spring of 1906; Krakatoa, in the Strait of Sunda between Java and Sumatra, whose eruption in 1883 caused the death of 36,000 persons and the destruction of 295 villages; Mont Pelée, in Martinique, which in the eruption of 1902 destroyed 30,000 persons; Soufrière, on the island of St. Vincent, in a sympathetic eruption on May 7 of 1902, caused the death of 1,350 persons; Mauna Loa and Kilauea, in Hawaii. Many of the lofty mountains of the globe are of volcanic origin. Among these are Mt. Shasta, in northern California; Mt. Rainier, in Washington; and Mt. Hood, in the Cascade Range. Hardened lava assumes many forms, such as the basaltic columnar structure of the Giant's Causeway.

The name Giant's Causeway is often applied to the entire range of cliffs in the County Antrim, on the northeast coast of Ireland, but it properly belongs to only a small portion of them, which is a platform of basalt in closely arranged columns, from 15 to 36 feet high, which extends from a steep cliff down into the sea till it is lost below low water mark. This platform is divided across its breadth into three portions, the Little, Middle, and Grand Causeway, these being separated from each other by dikes of basalt. The columns are generally hexagonal prisms, but they are also found of five, seven, eight, and nine sides, in almost every instance being fitted together with the utmost precision, even so that water cannot penetrate between adjoining columns. The name "causeway" was given to the platform because it appeared to primitive imagination to be a road to the water, prepared for giants.

Earthquakes.—The general opinion of investigators is that these agitations proceed from within outward, and are not of atmospheric or other external origin. True, Professor Alexis Perry, of Dijon, France, thought he discovered relations between the ages of the moon and these occurrences which seemed to sustain the theory of Zantedeschi that the liquid nucleus of the earth responds to the moon's attraction in tides,

but the theory that the earth has a liquid nucleus covered with only a thin, solid crust is losing adherents continually. Mr. Robert Mallet, one of the foremost investigators of seismic phenomena, in an elaborate report on the subject presented to the British Association, proposed an ingenious theory. He assumes that volcanoes and the centers of earthquake disturbances are near the sea or other large supplies of water; and he says that when an eruption of igneous matter takes place beneath the sea-bottom the first action must be to open up large fissures in its rocky material, or to lift and remove its incoherent portions, such as sand, mud, gravel, etc. The water, on meeting the heated surface, assumes the spheroidal state. While in this condition the intestine motion may be great, but little steam is generated; but no sooner have the surfaces cooled than the water comes into close contact with them, and a vast volume of steam is evolved explosively and blown off into the deep and cold water of the sea, where it is condensed, and thus a blow of the most tremendous sort is given at the volcanic focus, and, being transferred outwardly in all directions, is transmitted as the earthquake shock. Whatever their origin, whether of one cause or various causes, the prevailing opinion still is that the vibrations of every earthquake can be traced to a focus within the earth, and that this lies directly beneath the point of greatest disturbance on the earth's surface. This center of impulse, or, as it is termed, the "seismic focus," is not an exact mathematical point, but may measure many miles in diameter.

It is only within the last 60 years that the phenomena of earthquakes have been subjected to exact investigation, and a new science has been created, known as *seismology* (σεισμός, an earthquake). Special instruments called seismometers and seismographs have been designed for the purpose of recording the direction and intensity of the disturbances.

We now learn that earthquakes are much more frequent than was formerly supposed. There are, for instance, official records of 8,331 earthquakes in Japan between the years 1885 and 1892; that is, an average of over 1,000 shocks a year. Seismologists have further discovered that, although volcanic and seismic disturbances may take place side by side, the direct relationship between them is extremely rare. Speaking generally, it is found that earthquakes are more frequent along the steeper flexures in the earth's surface, and in those localities where geological conditions show that the secular movements of the earth's crust are still in progress. These conclusions would indicate that the origin of many earthquakes is connected with rock folding. Such movements, including upheavals, subsidences, and horizontal displacements, are termed bradyseismical (βραδύς, slow) movements.

Great Earthquakes.

425 B. C.—One which made Euboea an island.
345 B. C.—Duras in Greece and 12 cities in Campania buried.
17.—Ephesus and other cities demolished.
79.—One accompanying the eruption of Vesuvius and destruction of Herculaneum and Pompeii.
115.—Antioch destroyed.
157.—One hundred and fifty towns wrecked in Asia Minor and Macedonia.
557.—Thousands perished at Constantinople.
742.—In Syria, Palestine, and Asia Minor. Immense loss of life.
936.—Constantinople desolated; all Greece shaken.
1137.—In Catania, Sicily; 15,000 perished.
1158.—In Syria, etc.; 20,000 perished.
1268.—In Cilicia; 60,000 perished.
1318.—Greatest earthquake known in England.
1456.—At Naples; 40,000 perished.
1531.—At Lisbon; 30,000 buried.
1626.—In Naples; 70,000 perished.
1693.—In Sicily; 354 cities, towns, and villages destroyed. More than 100,000 perished.
1703.—In Jeddo (now Tokyo), Japan; 200,000 killed.
1716.—At Algiers; 20,000 perished.
1731.—In China; 100,000 perished.
1746.—Lima and Callao demolished; 18.000 buried.
1755, **November 1.**—Great Lisbon earthquake. In about eight minutes most of the city and 50,000 people were destroyed. Other cities in Portugal, a large part of Malaga in Spain, one half of Fez in Morocco, and half the island of Madeira were ruined.
1759.—In Syria; 20,000 perished.
1783.—In Calabria; shocks continued to end of 1786, towns and villages destroyed.
1797.—Country between Santa Fé and Panama destroyed, including Cuzco and Quito; 40,000 buried.
1805.—At Frosolone, Italy, 6,000 perished.
1812—In Caracas; whole city ruined; 10,000 inhabitants buried.
1815.—In island of Sumbawa, East Indies; one of the most violent eruptions recorded in history.
1819.—At Cutch, India; many towns over a wide area converted into ruins.
1822.—Aleppo destroyed; over 20,000 perished.
1822.—Coast of Chile permanently raised.
1835.—In Chile; Concepción, Talcahuano and other towns were destroyed.
1839.—At Martinique; nearly half of Port Royal destroyed.
1842.—At Cape Haytien, Santo Domingo; 4,000 killed.
1851.—Melfi, Italy, wrecked; 14,000 perished.
1857.—Montemuro and other towns in the kingdom of Naples destroyed; 10,000 perished. (Lacaita says that in 75 years, from 1783 to 1857, the kingdom of Naples lost at least 111,000 inhabitants by earthquakes, or more than 1,500 a year, out of an average population of 6,000,000.)
1860.—At Mendoza, Argentina; about two thirds of the city destroyed, and 7,000 lives lost.
1863.—Manila, P. I., great destruction of property.
1868.—Cities of Arequipa, Iquique, Tacna, and Chincha, and many small towns in Peru and Ecuador destroyed; about 25,000 perished.
1874.—Cities in Guatemala destroyed; great loss of life.
1880.—Shock at Brieg, Switzerland; several killed.
1883.—Java and neighboring isles desolated.
1884.—Severe shocks in eastern counties of England.
1884.—Several Spanish towns destroyed.
1885.—In province of Granada, Spain; 690 perished.
1886, **August 31.**—Shocks throughout eastern United States; at Charleston, S. C., 41 lives and $5,000,000 worth of property lost.
1886, **September-December.**—Slight shocks at and around Charleston, causing panic.
1887.—Severe shock in southern Europe, especially in the Riviera; estimated that 2,000 perished.
1891.—In Japan; officially estimated that 4,000 perished and that 50,000 houses were destroyed.
1893.—Islands of Zante and Stromboli, the former west of Greece, the latter one of the Lipari group, west of Calabria, Italy, severely shaken. Great loss of lives and property at Zante.
1897—In Assam, India; much damage; many killed.
1906, **April 18.**—Violent shocks in California wrecked San Francisco and adjacent towns. Bursting of water mains in San Francisco gave the city over to what was the greatest fire in all history, lasting two days. Area burned was over three times greater than that of the Chicago fire, and ten times that of either the Boston or the Baltimore fire. Great loss of life, and $300,000,000 of property destroyed; over 300,000 homeless. The business section of San José was destroyed, 19 lives lost, and property valued at over $8,000,000 destroyed. Santa Rosa was swept by fire; 50 lives were lost. At Agnews Insane Asylum 117 patients and 9 attendants were crushed to death. Stanford University buildings were damaged to the extent of $2,800,000, including the fine Memorial Church. Much damage in the Santa Clara, Napa, and Sonoma valleys.
1906, **August 16, 17.**—At Valparaiso, Chile, causing great destruction of life and property.
1907.—Large part of Kingston, Jamaica, destroyed.
1909.—In Sicily and southern Italy, Messina and many towns and villages desolated. Appalling loss of life; thousands buried alive; the survivors homeless.

DICTIONARY OF CHEMICAL AND PHYSICAL TERMS.

ABERRATION. The irregularities of a ray of light unequally refracted by a lens or reflected by a mirror and not meeting at a focus; the image resulting is indistinct, distorted, or colored at the edges. Indistinct images are produced by spherical aberration; coloring, by chromatic aberration. Instruments which are corrected for chromatic aberration are called achromatic.

ABSOLUTE ZERO. The lowest possible temperature; the temperature at which the undulatory motion in all bodies would cease. It has been shown to be —273.7 degrees Centigrade.

ACCELERATION. The increase in the velocity of a point. The acceleration of a falling body, or of one dropped from a height, caused by the attraction of the earth (gravity) is 32.2 feet per second. In calculations and formulae this is represented by *g*.

ACETIC ACID. Composed of carbon, hydrogen, and oxygen. The chief constituent of vinegar. It is manufactured by oxidizing alcohol by fermentation. It also has a medicinal or surgical use. Impure acetic acid is called pyroligneous acid.

ACETYLENE. An illuminating gas made by the action of water on calcium carbide. Berthelot, the French chemist, made important discoveries regarding it, and its method of cheap manufacture from calcium carbide was discovered by Wilson, a Canadian chemist.

ACIDS. A group of chemical compounds which turn blue litmus paper red, have a sour or acid taste, nearly always contain hydrogen, and neutralize alkalis, hydroxids, or bases. They are of great use in the arts and the laboratory, and are among the most energetic of chemical substances.

ALBUMEN or **ALBUMIN.** A chemical compound most closely resembling the white of an egg. Present in the blood, in the sap, seed, and edible parts of plants. Obtained in commerce by drying the whites of eggs, without allowing them to coagulate.

ALCOHOL. Ethyl alcohol or spirits of wine is composed of carbon, hydrogen, and oxygen in the proportion of C_2H_6O or C_2H_5OH. It is obtained by distillation from starchy substances such as potatoes, grains, rice, etc., after fermentation. The specific gravity of rectified spirit is 0.82 and is equal to 91 per cent. of absolute alcohol, which is alcohol deprived of all its water. Boils at 78 degrees C. and freezes at —130 degrees C.

ALDEHYDES. A group of organic compounds derived from alcohol (C_2H_5OH) by removing part of the hydrogen by the action of an oxidizing agent.

ALKALOIDS. A group of nitrogenous basic compounds found in plants. Nearly all are very poisonous. Among them are nicotin, coniin, atropin, cocain, quinin, strychnin, caffein, thein, antipyrin, codein, morphin, pilocarpin, and veratrin. They are all of high medicinal value.

ALLOYS. These are mechanical mixtures and not chemical compounds, since the metals may be incorporated in all proportions regardless of their combining weights. The more important are:—

Bronze, copper, and tin.
- Coin bronze (ancient), copper 96 parts, tin 4 parts, or copper 98 parts, tin 2 parts.
- Gun bronze, 90 parts copper, 10 parts tin, or 89 parts copper, 11 parts tin.
- Statuary bronze, nearly the same as gun bronze.
- Bell metal, from 82 to 70 parts copper, and 18 to 30 parts tin.
- Speculum metal, 67 parts copper, 33 parts tin.
- Phosphor bronze, copper, zinc, tin, and phosphorus.
- Tobin bronze, copper 59 parts, zinc 38 parts, with a little tin, iron, and lead.
- Aluminium bronze, copper 90 parts, aluminium 10 parts.
- Manganese bronze, copper 88 parts, tin 1½ parts, zinc 8¾ parts, and a little lead, iron, and phosphorus.

Brass, copper 66 2-3 parts, zinc 33 1-3 parts.
- Aluminium brass, equal parts of aluminium bronze, copper, and zinc.

German silver, copper 60 parts, zinc and nickel 20 parts each.

Pewter, tin and copper, and sometimes lead.

Britannia metal, tin, antimony, copper, and brass.

Stereotype metal, antimony 16 parts, tin 17 parts, lead 67 parts.

Babbitt metal, copper 4 parts, tin 12 parts, antimony 8 parts, and tin 12 parts added after melting.

Solder, tin and lead for soft solder. Hard solder contains brass.

Type metal, lead 4 parts, antimony 1 part.

Gold coin, gold 900 parts, copper 75 parts, silver 25 parts.

ALUM. Compounds of potassium, ammonium, or sodium with the sesquioxid of aluminium, much used in commerce in dyeing, clarifying, tanning, and, sometimes, in baking powders.

AMALGAM. An alloy of which mercury is always a constituent. Tin amalgam for silvering mirrors is composed of 3 parts of mercury to 1 part tin.

AMIDS. A large class of organic compounds derived by substituting one or more organic radicals for one or more of the hydrogen atoms in ammonia (NH_3).

AMINS. A large class of compounds derived by substituting such hydrocarbon radicals as methyl or ethyl for one or more of the atoms of hydrogen in ammonia (NH_3).

AMMONIA. A gaseous compound of nitrogen and hydrogen, colorless, and pungent. Formed when ammonium chlorid (sal ammoniac) is heated with lime. The ammonia of commerce is obtained from gas works. When ammonia gas is dissolved in water, liquid ammonia is formed.

AMPERE. The unit of current is the current due to an electromotive force of one volt working through a resistance of one ohm.

ANALYSIS. In chemistry, the breaking up of a compound substance into its constituent elements.

ANHYDRID. Oxids of non-metals which unite with water and thereby produce acids are called anhydrids. The gas (SO_2) is the anhydrid of sulphurous acid (H_2SO_3).

ANILIN. A substance largely used in the manufacture of dyes. It is formed by the addition of hydrogen to nitrobenzene. It was discovered in 1826 by Unverdorben, further demonstrated by Runge (1834), Zinin (1841), Hofmann (1843), and Perkin (1856).

ARTIFICIAL MAGNETS. Magnets which have acquired the property of attracting objects.

ATMOSPHERE. A convenient unit for measuring pressures such as the force of steam or pressure of liquids. It is, in English use, the weight of a column of mercury 30 inches high at the freezing point in London; in France, the pressure of 760 millimeters of mercury at the freezing point at Paris; generally estimated at about 15 pounds (14.7 pounds) to the square inch. When a pressure of 3 atmospheres is spoken of, about 45 pounds to the square inch is understood.

ATOM. The smallest particle of an element which can enter into chemical composition. It is only a supposition that atoms are the last possible division of matter.

ATOMIC THEORY. A hypothesis or theory put forward by Dalton in 1805. Designed to explain many states, conditions, and phenomena in chemistry otherwise incapable of explanation. By this theory it is supposed that all bodies are composed of minute particles of the elements and that these atoms cannot exist in a free or uncombined state, but always in union with atoms of other elements in compounds, or with atoms of the same element. Argon and some others are exceptions to this theory.

ATOMIC WEIGHT. The atomic weight of an element is the weight of an atom of that element compared with an atom of hydrogen, the lightest of all elements, taken as the standard and called 1 or unity.

AVOGADRO'S RULE. Under like conditions of temperature and pressure equal volumes of gases contain equal numbers of molecules. It was advanced by Avogadro in 1811. It is the basis of the methods of finding the molecular weight of compounds.

BAROMETER. An instrument for measuring the weight or pressure of the atmosphere; invented by Torricelli (1643). Consists of a glass tube more than 30 inches long sealed at one end and filled with mercury. The weight of the atmosphere balances a column of mercury equal to its own weight—30 inches of mercury in a tube one inch in cross-area weighs about 15 pounds. In a wheel barometer a float rests upon the mercury at the open end and by a thread and pulley attachment with the index hand records the weight as the mercury rises or falls. The aneroid barometer consists of a vacuum box whose sides or diaphragms are connected by a system of springs, levers, and chain which record the pressure of the air upon the sensitive diaphragms. The barometer acts as a weather indicator only so far as to show sudden and marked changes

in the pressure of the air—a sign of atmospheric disturbance. The pressure of the air decreases as one passes from the surface of the earth, therefore when the rate of decrease is known from tables, the height of mountains or of balloon ascensions may be accurately determined. Roughly speaking, the barometer falls 1-10 inch for every 90 feet of ascent above the sea level up to 1,000 feet; at one mile high it falls 1-10 inch for about every 106 feet rise.

BOILING. The rapid production of vapor in the mass of a liquid. Boiling points in degrees Fahr.:—

Alcohol, s. g. 813	173°	Oil of turpentine	315°
Ammonia	140°	Petroleum, rectified	316°
Benzine	173°	Phosphorus	554°
Chloroform	146°	Sea water, average	213.2°
Coal tar	325°	Sulphur	570°
Ether	100°	Sulphuric acid, s.g.1.848	590°
Linseed oil	597°	Sulphuric acid, s. g. 1.3	240°
Mercury	648°	Sulphuric ether	100°
Milk	213°	Turpentine	315°
Naphtha	186°	Water	212°
Nitric acid, s. g. 1.42	248°	Water in vacuo	98°
Nitric acid, s. g. 1.5	210°	Whale oil	630°

CAPILLARITY. The peculiar action by which the surface of a liquid, where it is in contact with a solid, is elevated or depressed; so called because the phenomena are best seen in tubes of such small diameters that they are comparable to a hair. Also known as capillary attraction.

CATHODE. The negative electrode or pole of an electric battery.

CENTER OF GRAVITY. That point in which, if the whole mass of the body were centered, the attraction of gravity would remain unchanged. The center of gravity of a square, rectangle, rhombus, or rhomboid is at the intersection of its two diagonals; of a circle, ellipse, or regular polygon, at the center of the figure; of a semicircle, the radius multiplied by .4244 will give the distance from the center on the radius erected perpendicular to the diameter; at the center of a cube, parallelopiped, cylinder, prism, sphere, spheroid, or ellipsoid; of a right pyramid or cone, in its axis one fourth the distance from the base.

CHEMICAL AFFINITY. The attraction which one element exerts upon another is called chemical affinity and in most cases manifests a preference of the atoms of one element for those of another element above all others. Substances like nitrogen which display a low chemical affinity are called inert and do not readily form many compounds.

CHEMICAL COMBINATION. The intimate union of two or more elements to form a compound with properties different from those of the constituent elements. When no such union exists, a mechanical mixture results, such as the air, in which the constituent gases lie side by side without union.

CHEMICAL FORMULA. A mode of representing the exact composition of chemical compounds, and stands for one molecule of the compound. The formula of water is H_2O. This means that a molecule of water is composed of two atoms of hydrogen chemically combined with one atom of oxygen; two molecules of water would be represented by the formula $2H_2O$, where the large figure multiplies all that follows. Formulas are empirical, as those given above; rational, as H O H; and graphic, as H—O—H.

COMPASS. The instrument used to indicate the magnetic meridian consists of the magnetic needle, the card, and the bowl. The circular card is divided into 32 equal parts by lines drawn from the center to the circumference to form the points of the compass which make angles of 11 degrees 15 minutes between two adjacent points. The enumeration of these points in order is called "boxing the compass." They are: north, north by east, north-northeast, northeast by north, northeast, northeast by east, east-northeast, east by north, east, east by south, east-southeast, southeast by east, southeast, southeast by south, south-southeast, south by east, south, south by west, south-southwest, southwest by south, southwest, southwest by west, west-southwest, west by south, west, west by north, west-northwest, northwest by west, northwest, northwest by north, north-northwest, north by west.

CONDUCTION. The carrying of heat from particle to particle of a body by raising their temperature without appreciable change of position, is called conduction of heat. Electricity passes by conduction from points of high potential to points of low potential from particle to particle by raising their potential.

CONVECTION. The carrying of heat or electricity by a change in the position of the heated or electrified body. Water when heated increases in volume, decreases in relative weight, and rises through the colder water, giving rise to convection currents, of which the Gulf Stream is a marked example. Air behaves similarly and produces the trade winds upon the same principle as the heating of a house by a hot air furnace is conducted.

COULOMB. The unity of quantity (Q) and equals a current of 1 ampère during 1 second of time. It is 10 units on the centimeter-gram-second system, and deposits 1.118 milligrams of silver, named after C. A. de Coulomb (1736-1806).

DENSITY. The ratio of mass, or quantity of matter, to bulk or volume, especially as compared with the mass and volume of a portion of some substance used as a standard.

DYNAMICS. A branch of mechanics which treats of the motions of systems or of particles. It regards mass, forces, constraints, velocities, and positions. It tells about the circumstances under which certain motions take place. Dynamics is divided into statics and kinetics.

ELECTRICITY. A powerful physical agent which manifests itself mainly by attraction and repulsion, but also by luminous and heating effects, by violent shocks, by chemical decomposition, and many other phenomena. It is evoked in bodies by a variety of causes, among which are friction, pressure, chemical action, heat, and magnetism. The Century Dictionary defines electricity as "a name denoting the cause of an important class of phenomena of attraction and repulsion, chemical decomposition, etc.: or, collectively, these phenomena themselves." Statical or frictional electricity is that produced by frictional and similar means. Current electricity is produced by chemical or voltaic battery, and electro-magnetic machines.

Battery, Electric. Galvani in 1790 discovered that a frog's legs will contract violently when the exposed nerves are touched with one metal and its muscles by another metal, the other ends of the metals being connected. He found that an electric current was generated and acted upon the contractile tissues of the muscles.

Voltaic Pile. In 1800, Volta placed discs of copper and zinc in alternate rotation and separated by layers of cloth saturated with an acid solution.

Daniell Battery. In 1836, Daniell invented a battery in which the metals were exposed to the action of dilute acid in a glass jar. This form is more constant and requires less frequent cleansing than a voltaic pile. The solution is of copper sulphate (copperas or blue stone), in which a rod of amalgamated zinc contained in a porous cup is surrounded by a copper cell. Modifications are the Grove, Smee, and other cell batteries.

Electric Machines. Powerful currents are produced by the magneto-electric machine or by the dynamo-electric machine. In the former a permanent magnet is used; in the dynamo-electric machine, an electro-magnet is employed. Both depend upon the induction which takes place between coils of wire and magnets when their respective positions are changed. The strength of a magneto-electric machine is limited to the strength of the inducing field magnets. The use of electro-magnets was discovered by Soren Hjorth of Copenhagen, who patented his machine in 1855. In it by the mutual action between the electro-magnets and the armatures an acceleration is acquired by means of which the production of electricity is greatly increased and the power of the machines is greatly intensified. Wilde (1866) used a small machine equipped with permanent magnets to excite field magnets wound in coils in a larger machine. Siemens (1867) dispensed with the permanent magnets used by Hjorth and took advantage of the residual magnetism stored up in the iron and used what has since been known as the bobbin armature. His discovery was shared by Varley, Wheatstone, and Farmer independently. The continuously wound ring armature was devised by Gramme and D'Ivernois (1871). The modern dynamo stands as the perfected work of such electricians as Weston, Brush, Edison, Thomson, Houston, Westinghouse, and others. The armature is the name given to the coils of wire which are made to revolve. The electro-magnets are fixed in position and are known as the field magnets. These are placed on opposite sides of the armature; if two in number the machine is bi-polar; if several field magnets are used, the machine is multipolar. Alternating current dynamos cause the current to alternate in direction. Continuous current dynamos cause the current to flow continuously in one direction. The transformer changes the character or potential of currents.

Electrocution. By a law passed by the legislature of New York (1888) to go into effect in 1889, death

by a powerful electric current was substituted for hanging. One wire is strapped to the prisoner's forehead, and the other is applied to his ankles. In this way the current from a dynamo passes through the victim's body.

Electric Motor. Faraday in 1821 caused a floating bar magnet to revolve upon a central supporting wire by means of an electric current. Barlow, of Woolwich in 1826, made an electric wheel. Abbe Dal Negro, of Padua, in 1830, made an electric pendulum which swayed backward and forward by the force of a current of electricity. Henry's electro-magnets (1828) supported thousands of pounds weight; and in 1831 he devised a simple form of motor. This was followed by motors by Sturgeon (1832), Jacobi (1834), Davenport (1834), Zabriskie (1837), Davenport (1837), Page (1838)) Walkley (1838), Stimson (1838), Page (1839), Cook (1840), Elias (1842), Lillie (1850), Neff (1851), and Page (1854). As early as 1835, Davenport made a small circular electric railway at Springfield, Mass. In 1839, Jacobi made an electric motor boat and carried 14 passengers at a speed of 3 miles an hour. Davidson, a Scotchman, propelled a six-ton electric car 4 miles an hour (1839). Page's electric locomotive drew a train of cars from Washington, D. C., to Bladensburg at a speed of 19 miles an hour (1854). So far the propelling force was the voltaic battery. The modern electric motor was discovered by accident in Germany in 1873. It was found that one dynamo will drive another dynamo in the opposite direction when the two are connected by wires.

Third Rail. The third rail, placed between the two-wheel rails, conducts electricity; and the current is maintained by a sliding shoe, attached to the bottom of the car, through which the current passes through the motor to the car wheels and thence to the track rails.

Electric Locomotives. These have been in use on the Baltimore and Ohio Railroad at the Camden street station tunnels at Baltimore since before 1895.

Electric Light. Davy in 1809 obtained light from two pieces of carbon under an electric current from a voltaic battery. Foucault, Duboscq, Deleuil, and others produced electric lights in 1853. Electric light was first used in a lighthouse at the South Foreland in 1858. The Jablochkoff candle was invented in 1877. It consisted of two parallel carbons separated by a layer of kaolin and bound together by an asbestos wrapping. Now the pieces of carbon are placed vertically one above the other as in the Weston arc lamp and fed by an automatic mechanism operated by electro-magnets which raise or lower the carbon by an electric current. The names of Brush, Weston, Thomson, and Houston are intimately identified with the improvements of the arc light. Henry Lepante's great light exhibited at Chicago in 1893 attracted much attention by its great size. Its 90,000,000 candle power light is visible 146.9 miles.

Incandescent Lamp. The earliest form was devised by William Robert Grove (1840), the inventor of the Grove battery. It was followed by that of August King (1845) and known as the Starr-King lamp. It had a platinum burner and a carbon in a vacuum. Probably the first house to be lighted by electricity was that of Moses G. Farmer of Salem, Mass. In 1859, he arranged a series of lamps by the subdivision of the electric current. The Sawyer-Mann lamp was produced in 1878 and consisted of an incandescent rod of carbon in a globe filled with nitrogen. Edison's lamp appeared in 1880, and introduced the use of the thread-like filament of bamboo sealed in vacuum to prevent its burning away. Its production entailed not only much litigation with Sawyer and Mann, but caused a panic in the London Stock Exchange in 1878 through fear of it causing the displacing of gas.

ELECTROLYSIS. The breaking up of a chemical compound into its constituent elements by the action of an electric current. The substance acted upon is called an electrolyte. When water is acted upon, the hydrogen gas collects at the negative pole and the oxygen at the positive. Hydrogen is therefore classed as electropositive and oxygen as electronegative. A solution of copper sulphate under electrolysis gives metallic copper at the negative pole and sulphuric acid at the positive.

FARAD. The electro-magnetic unit of capacity (K) and represents the capacity of a condenser that has a charge of 1 coulomb when charged with a difference of potential of 1 volt. It stands for 109 units on the centimeter-gram-second system. The microfarad is one-millionth of a farad. Named after Michael Faraday (1791-1867).

FOCUS. The point at which rays of light converge or from which they diverge. The focus of those rays which strike the lens parallel to its axis is called the principal focus. The focal length of a lens is the distance from its center to the principal focus.

FORCE. That which tends to impart motion to a body at rest, or to change the direction or velocity of a body already in motion.

FUSION. The change of a body from the solid to the liquid state.

MELTING POINT IN DEGREES FAHRENHEIT.

Substances.	Degrees.
Antimony	995
Bismuth	506
Brass	1873
Copper	2000
Gold	2016
Iron, cast	2000-2800
Iron, rolled	3000-3500
Lead	612
Platinum	4593
Steel	2370-2550
Tin	444
Wax	158
Zinc	680-772

GALVANOMETER. An instrument for detecting the presence, ascertaining the direction, and measuring the strength of an electric current. It depends upon the fact that an electrified wire causes a magnetic needle to stand at right angles to the direction of the current.

HEAT. The energy of molecular motion which varies in gases, fluids, and solids. In gases the motion is in nearly uniform rectilineal directions; in liquids, in irregular directions; and in solids, orbital or oscillatory. This motion is sustained in all bodies until the absolute zero point, when it ceases. The effects of heat upon bodies are: increase of temperature, expansion, and change of state. Heat is transmitted by convection, conduction, and radiation.

HEAT UNIT. The amount of heat necessary to raise one pound of water through one degree of temperature. One pound of coal in burning yields heat enough to raise 13,500 pounds of water through one degree F. of temperature; hence, yields 13,500 heat units.

HORSE POWER. A nominal horse power or Watt's horse power supposes a horse able to lift 33,000 foot-pounds in one minute; actual tests with an average horse give but 22,000 foot-pounds in one minute. Indicated horse power is calculated from the pressure upon the piston as shown by an indicator card or diagram.

HYDRAULIC PRESS. The application of the principle that pressure upon a body of water is communicated equally in every direction throughout the entire mass regardless of its shape. Pressure by a piston or force-pump upon a small body of water is communicated to a piston of larger area through pipes. It is used in the hydraulic block, crane, jack, dock, hoist, elevator, punch, shears, and for baling paper, hay, etc.

HYDRAULICS. The branch of mathematical and engineering science which treats of fluids in motion and of the application of these laws and principles to machinery.

HYDROSTATIC PARADOX. The principle that any quantity of water, however small, may be made to balance any quantity of water however great. It is the principle which underlies the hydraulic press.

HYDROSTATICS. The mathematical investigation of the pressure and equilibrium of incompressible fluids.

HYDROXID. A chemical compound formed by the union of an element with the hydroxyl, OH.

HYDROXYL RADICAL (OH). That which results from dropping one atom of hydrogen from a molecule of water; as a radical it has no separate existence.

ILLUMINATED BODIES. Those which are lighted by some other source.

INDUCTION. The power which an electrified body has of calling forth electrical or magnetic properties from other bodies with which it is not in direct contact. It is upon this principle that the soft iron magnet is constructed.

INTERFERENCE. The action of waves of water, sound-waves, heat-waves, or light-waves upon one another by which according to conditions the effects are either increased, diminished, or neutralized. A wave is composed of a crest and a trough. If two crests come together the wave is increased; if a trough and a crest, both waves are diminished; if two troughs, both are neutralized. The colors of soap bubbles, of some iridescent glass, and of mother of pearl are due to interference of light waves.

IODID. A compound formed by the direct union of iodin with another element; or by replacing the hydrogen of hydriodic acid (HI).

ION. An atom or atoms bearing + or — charges of electricity, formed through disassociation of an electrolyte in a solvent, as water: +ions = anions; —ions = cations.

JOULE. The unit of electrical work (w. j.) and expresses the work done by electrical power of 1 watt in 1 second. Named after J. P. Joule (born 1818).

KILOWATT HOUR. The amount of energy necessary to perform 1,000 watts in one hour.

KINEMATICS. A branch of mechanics, treating of motion, its direction, velocity, acceleration, and composition, but not regarding mass or constraints.

KINETICS. That part of dynamical mechanics which treats of the forces which cause or change the motion of bodies.

LENS. A transparent body (usually glass) bounded by curved surfaces used to cause pencils of rays to converge or diverge after passing through it. Convex lenses are thickest in the center and magnify; concave lenses are thinnest at the center. The double-convex lens is convex on both sides; the double-concave, concave on both sides. The plano-convex has one side convex and the other flat. The meniscus is shaped in section like a crescent—one side concave, the other convex. The axis of a lens is the line joining the centers of the curvature of both surfaces.

LIGHT. The undulatory theory explains the phenomena of light as the result of an undulatory motion which the luminous body excites in the luminiferous ether pervading all space and the molecular interstices of all bodies. Light travels in a vacuum at the rate of 186,000 miles per second. The emission or corpuscular theory has been abandoned in favor of the undulatory or wave theory.

LIQUEFACTION. Reduction to a liquid state. Solids are liquefied by heat or solution; gases, by cold and pressure. That temperature below which a gas under pressure may be liquefied is the critical temperature; and the pressure necessary to produce liquefaction at the critical temperature is called the critical pressure. All gases which may be cooled to the critical temperature may under requisite pressure be liquefied. The critical temperature of hydrogen is —234 degrees C.; oxygen, —119 degrees C.; nitrogen, —146 degrees C.; air, —140 degrees C.; carbonic dioxid, +32 degrees C., or 88 degrees F.

MAGNETIC FORCE. The mechanical force, in dynes, exerted on a unit magnetic pole placed at the point. It is equal to the number of lines of force crossing unit area surrounding the point.

MAGNETISM. The power possessed by substances to attract iron, and the resulting phenomena.

MASS. The mass of a body is that which remains unchanged in all the transformations which the body may undergo.

MECHANICS. Originally the theory of machines, the science has, through the modern doctrine of force, come to include mathematical investigation into the motions and tendencies to motion caused by the exercise of forces and restraints—applicable alike to rigid bodies, particles, and systems. It is divided into kinematics and dynamics. Dynamics in turn is divided into kinetics and statics.

MOLECULAR WEIGHT. The sum of the atomic weights of the constituent elements. In a molecule of water (H_2O) the molecular weight is the sum of two atoms of hydrogen (with an atomic weight of 1 each) and of 1 atom of oxygen (atomic weight 16), making the molecular weight of water 18.

MOMENTUM. The quantity of motion of a moving body, and is the product of the mass multiplied by the velocity.

MOTION. The property in virtue of which the position of a body in space may be changed.

OHM. The unit of electrical resistance (R) of a column of mercury 1 square millimeter cross-sectional area and 106.3 centimeters long. It is 10^9 absolute units of resistance on the centimeter-gram-second system. The British Association ohm is 0.987 of a true ohm. Named after Dr. G. S. Ohm.

OHM'S LAW. In any simple circuit the strength of the current is equal to the E. M. F. of the cell or battery divided by all the resistance in the current.

PENDULUM. The number of vibrations made by pendulums of different lengths varies inversely as the square root of their length. If one is 4, 9, or 16 times as long as another, the square roots are 2, 3, and 4 times as great, but the number of vibrations of the longer one will be only 1-2, 1-3, or 1-4 as many as of the shorter. The time in which the vibration will be made varies directly as the square root, that of the longer taking 2, 3, or 4 times as long as of the shorter. A pendulum to make a vibration in 1 second at the latitude of New York is 39.1013 inches long.

POLARITY. The possession of magnetic poles; the property acquired by a magnetizable body when brought into a magnetic field.

POTENTIAL. Electricity at a higher potential is said to flow to a lower, as water flows to a lower level. It may be likened to temperature, for as heat tends to pass from a point at higher temperature to one at a lower, so electricity passes from a higher to a lower potential. If an electrified body be brought into metallic contact with one not electrified they will assume the same potential or the same level.

POWER. The amount of work done, or energy supplied, in unit time.

QUANTITY OF ELECTRICITY. The amount of electricity generated in a given time and measured in coulombs.

RADIATION. The emission and diffusion of rays of light or heat by all bodies at all temperatures. When the radiant energy of a body is capable of producing light, it is called luminous; when no light is produced, obscure.

REFLECTION. When a ray of light, sound, or radiant heat strikes a surface and is thrown back into the medium whence it came, it is said to be reflected. The law of reflection is that the angle of reflection is equal to the angle of incidence; and that both of these angles lie in the same plane with a normal to the surface. Mirrors, reflectors, sounding boards, and echoes are illustrations of reflection.

REFRACTION. The change which rays of light, heat, or sound undergo when passing from a medium to another of different density, as from air to water, glass to water, glass to air, and the like. Lenses, prisms, and the spectrum depend upon refraction for the explanation of the phenomena which they manifest. Double refraction is the separation of a ray into two rays unequally refracted and is especially noticeable in certain crystals.

RESISTANCE. That property of a conductor which causes the passage of a current of electricity through it to be attended by a dissipation of energy, as the change of electricity into heat, is called the resistance of the conductor. The less the resistance in proportion to the electro-motive force, the stronger the current, in obedience to Ohm's Law, $C = \frac{E}{R}$.

SOUND. The effect upon the ear of vibrations set up either in the sounding-body itself or in the air or other medium. Sound travels in the air at the rate of about 1,090 feet a second at 32 degrees F. or one mile in 4.84 seconds; in hydrogen its velocity is about four times as great as in air; in liquids the velocity is greater than in air (in water about four times greater, or 4,708 feet in a second); in wood or steel from two to three miles a second. If the vibrations do not exceed 24 a second or if they exceed from 30,000 to 40,000 a second, the ear cannot detect the sound. Sound waves respond very closely to the laws of light as to reflection, refraction, and interference. Sounds of low pitch are caused by slowly vibrating, long sound-waves; shrill, high-pitched sounds are produced when vibrations are rapid and the sound waves are short.

SPECIFIC GRAVITY. The specific gravity of a body is its weight compared with an equal bulk of another body taken as a standard of comparison. Pure water is the standard for solids and liquids; either air or hydrogen for gases. To find the specific gravity of a body heavier than water: weigh the body in air; weigh it suspended in water; find the difference, which is what the body loses in weight when supported in water, or is the weight of an equal volume of water; divide the weight in air by the difference. When the body is a solid lighter than water attach a known weight to the body sufficient to sink it when weighed

in water and proceed as given. To find the specific gravity of a liquid: weigh some solid in water; weigh the same solid in the given liquid; then divide the loss of weight in water into the loss of weight in the given liquid; the quotient is the specific gravity required.

TABLE OF SPECIFIC GRAVITIES.

Compared with Water.

Substances.	Average Specific Gravity.
Air at 60° F.—barometer at 30 inches is $\frac{1}{815}$ of the weight of water	.00123
Alcohol, pure	.793
commercial	.834
proof spirit	.916
Brass	8.1
Carbonic acid gas	.00187
Chalk	2.5
Clay	1.9
Coal, anthracite	1.5
bituminous (soft)	1.35
Copper	8.95
Cork	.25
Diamond	3.53
Ether	.716
Fat	.93
Feldspar	2.65
Flint	2.6
Glass	2.95
Gold	19.258
Granite	2.72
Gutta percha	.98
Gypsum, plaster of Paris	2.27
Ice	.92
Iron, cast	7.15
wrought	7.77
Ivory	1.82
Lead	11.41
Lime, quick	1.5
Limestone and marble	2.6
Mercury	13.62
Mica	2.93
Naphtha	.848
Oils	.90
Oxygen gas	.00136
Petroleum	.878
Pine, southern	.72
white	.40
Platinum	21.5
Quartz	2.75
Shales	2.6
Silver	10.5
Slate	2.8
Spruce, dry	.40
Steel	7.85
Tar	1.
Tin	7.35
Zinc	7.

SPECIFIC HEAT. The ratio between the quantity of heat necessary in order to raise a given mass of any substance through a given difference of temperature, and the quantity of heat necessary to raise the same mass of water through the identical difference of temperature.

SPECTROSCOPE. An instrument designed to disperse rays of light through prisms or by reflection from a grating. By the study of the spectrum so formed the chemical nature of substances burned or vaporized in the flame emitting the light may be studied. By the aid of the spectroscope it has been learned that 36 of the known chemical elements are contained in the sun's atmosphere. Many new elements have been discovered by spectrum analysis.

SPECTRUM. The continuous band of light divided into the successive colors when a ray of white light passes through a prism and is dispersed. The order in which the colors arrange themselves are: red, orange, yellow, green, blue, indigo, and violet. The spectrum of sunlight is seen to be crossed by many dark lines (caused by absorption of gases) called Fraunhofer's lines.

STATICS. The branch of dynamical mechanics which treats of the study of the circumstances under which it is possible for a body to remain at rest or in equilibrium.

STORAGE BATTERY. A combination of accumulators, which when once charged gives back a continuous and regular current when the poles are connected. It consists primarily of two spiral-formed sheets of lead coated with red oxid of lead. The chief forms are the Planté and the improved Faure forms.

SULPHATE. A compound formed from sulphuric acid (H_2SO_4) by replacing the hydrogen with another element or radical.

SULPHID. A chemical compound formed by the direct union of sulphur with another element.

SULPHITE. A compound formed from sulphurous acid (H_2SO_3) by replacing the hydrogen with another element or radical.

SURFACE TENSION. The magnitude of opposing forces per unit of length of an imaginary line drawn in the surface of a liquid.

TENACITY. The resistance which a body opposes to the total separation of its parts. The various kinds of tenacity are: tenacity in the ordinary sense, or resistance to traction; relative tenacity or resistance to fracture; reactive tenacity, or resistance to crushing; sheering tenacity, or resistance to displacement of particles in a lateral direction; and torsional tenacity, or resistance to twisting.

THERMOMETER. An instrument for measuring temperature depending upon the almost universal principle of the expansion of bodies under heat. Mercury thermometers are used to measure above —39 degrees F. and below 660 degrees F. Alcohol or wine thermometers measure below —39 degrees F. indefinitely as no degree of cold has been known to freeze spirits of wine. Above 660 degrees F., air thermometer, steam thermometer, or other form of pyrometer is used. The Fahrenheit thermometer marks the freezing point at 32 degrees and the boiling point at 212 degrees. The zero of his system was the lowest temperature mark recorded by him in the winter of 1709. The Reaumur scale calls the freezing point zero and the boiling point 80 degrees; so that 80 degrees Reaumur equal 180 degrees F. The Centigrade scale marks freezing point zero and the boiling point 100 degrees; so that 100 degrees C. = 80 degrees Reaumur = 180 degrees F. The air or gas thermometer registers by the change of volume or pressure of a quantity of dry air or gas contained in a reservoir. The metallic thermometer registers by the expansion or contraction of a bar of platinum, silver, or gold.

TRANSLUCENT BODIES. Those which transmit light, but through which objects cannot be distinguished; such as ground glass, oiled paper, etc.

TRANSPARENT BODIES. Those which readily transmit light, and through which objects can be distinguished; such as water, gases, and polished glass.

UNIT OF POWER, or **HORSE POWER.** Used in estimating capacity for doing work. It is the power in engineering that must be exerted in lifting 33,000 pounds at the rate of one foot per minute.

VALENCE. The combining power of an atom of an element compared with that of hydrogen taken as a standard. Elements which combine atom for atom with hydrogen are called univalent or are said to have a valence of one; those which require two atoms of hydrogen or other univalent atom to saturate one atom of themselves are called bivalent or 2-valent; and so on with trivalent, or 3-valent; quadrivalent, or 4-valent, etc. Many elements seem to possess a varying valence.

VAPOR. The gaseous form which bodies that are solids or liquids at ordinary temperatures may be made to assume by the agency of heat.

VAPORIZATION. The passage of liquid into the gaseous state.

VOLUME. Space is of three dimensions: length, breadth, and thickness.

VOLT. The unit of electro-motive force (E) and represents one ampère passing through a conductor whose resistance is one ohm. It is a little less (.926) than the electro-motive force of a Daniell cell; and is 10^8 absolute units of electro-motive force on the centimeter-gram-second system. Named after Volta.

WATT. The unit of electrical power (Pw), which equals the power of a current of 1 ampère when the resistance is 1 ohm. It is equal to 10^7 units on the centimeter-gram-second system and to 0.0013405 of a horse power. Named after James Watt (1736-1819).

WEIGHT. The measure of the force or downward pull which the attraction of gravity exerts upon all bodies.

WHEATSTONE'S BRIDGE. An arrangement in which two resistances whose ratio is known are employed for the comparison of two other resistances, one of which is variable.

CHEMICAL ELEMENTS.

TABULATED STATEMENT OF ALL THE KNOWN ELEMENTS.

At. wt. = Atomic weight; Sp. gr. = Specific Gravity. For Definitions see Index.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
ALUMINIUM Symbol Al. At. wt. 27.1. Valence III. Sp. gr. 2.7. Discovered by Wöhler, 1827.	Occurs as silicate in clays, micas, feldspars, etc.; extracted from its ores by electrolysis.	A tin-white tenacious metal; takes brilliant polish; odorless, tasteless; highly malleable at 100° to 150° C. Sonorous, does not tarnish; slowly magnetic. Soluble in hydrochloric acid and solutions of caustic potash and soda.	Oxid and sulphate are its compounds. Oxid is sapphire, ruby, corundrum, and emery used in polishing. As a basic oxid, and as an acidic oxid, forms the somewhat indefinite aluminates. Sulphate is aluminium salt prepared by itself and along with potassium or ammonium sulphate as alum. Uses: boat building, instruments, balloon fittings, bicycles, cooking utensils, chemical works, lithography, paint, cameras, opera glasses, and aluminium bronze.	
ANTIMONY Symbol Sb. (*Stibium.*) At. wt. 120.2. Valence III. and V. Sp. gr. 6.7. Discovered by Valentine, 15th century.	Occurs in nature in stibnite, antimony sulphid. Found free to a small extent.	A bluish-white, hard, brittle, highly lustrous, crystalline metal. Expands on solidifying; does not rust.	Alloyed to make type metal, britannia metal, and anti-friction metal. Compounds are sulphids; antimony cinnabar, used for paint; antimony trichlorid (butter of antimony) for browning gun-barrels; and tartar emetic.	Tests similar to that for arsenic, from which it is distinguished by the appearance of metal, and its insolubility in sodium hypochlorite.
ARGON Symbol A. At. wt. 39.9. Sp. gr. 1.5. Discovered by Rayleigh and Ramsay, 1894.	A gaseous element nearly one and a half times heavier than air, present in natural nitrogen.	Most inert substance known. A colorless, odorless gas.	The argon molecule contains one atom.	Argon will not unite with any other element; more soluble in water than nitrogen; liquefied, boils at −186° C. and solidifies at −190° C.
ARSENIC Symbol As. At. wt. 75. Valence III. and V. Sp. gr. 5.71. Discovered by Schröder, 1694.	Occurs free in nature, but also combined with many metals as in realgar, and in mispickel or arsenical pyrites.	1. A steel-gray, metallic, very brittle solid, subliming easily. 2. A fine, heavy black powder.	White arsenic or arsenious anhydrid (As_2O_3); arsenic oxid, or arsenic anhydrid. Used for hardening shot, in paints, as Scheele's green for printing wall paper, dyeing calico, and in pyrotechny.	Marsh's test: arsenic is placed in the apparatus used for generating H; the H is ignited, and, when cold porcelain is held in flame, metallic arsenic is deposited on the porcelain.
BARIUM Symbol Ba. At. wt. 137.4. Valence II. Sp. gr. 3.8. Discovered by Davy, 1808.	Occurs chiefly as sulphate in barite, as carbonate in witherite, in other minerals, mineral waters, ashes of certain plants, and in sea water.	A silver-white or golden-yellow metal, slightly lustrous, somewhat malleable. Melts at red heat, but cannot be distilled. Recent soil analyses have led botanists to believe that the poisonous properties of the loco weed are due to the presence of barium in the soil.	Barium peroxid, used to make peroxid of hydrogen, a bleaching agent, and to prepare oxygen; sulphate, in making pigments, cheap substitute or adulterant of white lead, manufacture of reagents, in pyrotechny, paper making, and pork packing; chlorid, used to prevent incrustation of boilers; nitrate, in making explosives.	Barium salts, when brought into a non-luminous flame, burn with a yellowish-green color. Compounds impart a green color to a Bunsen flame, if volatile; if in solution they form an insoluble, white precipitate on adding sulphuric acid.
BISMUTH Symbol Bi. At. wt. 208.5. Valence III. and V. Sp. gr. 9.8. Discovered by Valentine, 15th century.	Occurs in nature, free, and in combination as sulphid, oxid, and carbonate.	A grayish-white, crystalline, shining, brittle metal with pinkish tinge. Solidifies with expansion.	Used for making alloys which melt at low temperature, and are useful for making casts of objects.	
BORON Symbol B. At. wt. 11. Valence III. Sp. gr. 2.5. Discovered by Davy, 1808.	Occurs in oxygen compounds, namely, boric acid and its salts in two forms.	An odorless, tasteless, greenish-brown powder. Non-conductor of electricity; very infusible. Melts at 320° C., and boils at 763° C.	Boron is of little commercial use. Its compounds are boric acid, boric oxid, and borax.	

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
BROMIN Symbol Br. At. wt. 79.96. Valence I., V., or VII. Sp. gr. 3.2. Discovered by Balard, 1826.	Occurs in the upper layers of the natural beds of rock salt. Three modes of preparation.	A heavy, reddish-brown liquid. The only liquid non-metallic element. Unites directly with most metals. Boils at 59°C. Has a very irritating odor.	Forms a class of compounds known as bromids. Useful in medicine, in photography, and in the manufacture of dyes from coal tar.	Gives a brownish color to starch paste by using a very large quantity. No oxid is known.
CADMIUM Symbol Cd. At. wt. 112.4. Valence II. Sp. gr. 8.6. Discovered by Stromeyer, 1817.	Occurs in the rare mineral greenockite, and in association with zinc ores, in very small quantities.	A bluish-white, lustrous metal with a fibrous fracture, highly lustrous, malleable, ductile, and flexible. It melts at 320° C., and boils at 770° C.	Cadmium forms a series of salts, of which iodid is used in medicine. Its sulphid is used as a pigment, and is also used for coloring toilet soaps, in pyrotechny, and in calico printing.	Cadmium tarnishes slightly in air, and burns when heated in it.
CÆSIUM Symbol Cs. At. wt. 132.9. Sp. gr. 1.9. Discovered by Bunsen, 1861.	A chemical element found in certain mineral waters, and in minerals, including lepidolite, petalite, and certain feldspars. Isolated by electrolysis.	A silver-white, soft, ductile metal; oxidizes rapidly in air.	The preparation of the metallic cæsium involves separation of its compounds from other elements, the transformation of the pure cæsium compounds into cyanid and the electrolytic decomposition of the cyanid.	Cæsium has a great avidity for oxygen, readily taking fire if exposed to air. No oxid is known.
CALCIUM Symbol Ca. At. wt. 40.1. Sp. gr. 1.7. Valence II. Discovered by Davy, Berzelius, 1808.	Found in nature as limestone, marble, chalk, coral, eggshells, and many other forms. Prepared by the electrolysis of calcium chlorid.	A light, yellowish-white, clear, lustrous hard metal; malleable, ductile, brittle; melts at red heat. Decomposes water like sodium and potassium.	Quicklime (CaO) for making mortar; slaked lime for making lime-water; calcium sulphate or plaster of Paris; calcium phosphate as fertilizer; and chlorid of lime for bleaching.	Burns with a yellow flame.
CARBON Symbol C. At. wt. 12. Valence IV. Sp. gr.: of diamond 3.5: of graphite 2.25 Prehistoric.	Widely distributed in nature, as diamond, graphite or plumbago (black lead), coal, charcoal, coke, soot, and lampblack.	Its forms are very varied and quite familiar. Unchanged by acids.	Carbon dioxid (CO_2) found in natural and artificial aerated waters; carbon disulphid (CS_2) for dissolving oils, fats, and vulcanizing rubber; the carbonates; and with hydrogen to form hydrocarbons.	Diamond, noted for its hardness, brilliancy, non-conductor of electricity, and burns under intense heat to CO_2. Graphite, a soft, greasy-looking black solid, crystallizes in six-sided plates. Other forms do not crystallize.
CERIUM Symbol Ce. At. wt. 140.25. Valence III. or IV. Sp. gr. 7.04. Discovered by Mosander, 1839.	Occurs with a few minerals, especially as the silicate in cerite, and samarskite. Prepared by electrolysis.	A steel-gray, very ductile, very lustrous, and malleable metal.	Its oxid is an important ingredient of incandescent gas mantles. Cerous sulphate is used in coloring fabrics.	Burns when heated in air, forming an oxid and producing much heat and light.
CHLORIN Symbol Cl. At. wt. 35.45. Valence I. Discovered by Scheele in 1774.	1. Electrolysis of salt water. $NaCl=Na+Cl$. 2. Hydrochloric acid and black oxid of manganese. $4HCl+MnO_2=MnCl_2+2H_2O+2Cl$.	Greenish-yellow color, pungent odor, irritates mucous membranes, soluble in water. Forms chlorids by direct union with other substances. Bleaches. Condenses to dark yellow liquid; boils at −33.6°.	Chlorids as common salt (NaCl), chlorinated lime, Condy's Fluid, hydrochloric acid (HCl). USES. Manufactured for bleaching materials and disinfecting agents.	Heavier than air. Bleaches all inorganic substances. Does not bleach printer's ink. Permits combustion of hydrocarbons only.
CHROMIUM Symbol Cr. At. wt. 52.1 Valence II. to VI. Sp. gr. 6.5. Discovered by Vauquelin, 1797.	Occurs chiefly in ferrous chromite, as crocoisite, as wolchonskoite, and as a constituent of meteoric iron.	A shiny steel-gray powder, consisting of small, lustrous, very hard, brittle, rhombohedral crystals.	With steel it yields an alloy, chromium steel. With oxygen forms oxids, used principally as pigments; chromates, used in calico printing and dyeing, making matches, bleaching, tanning leather, and photogelatin processes.	Burns brightly when heated in oxygen.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
COBALT Symbol Co. At. wt. 59. Valence II. or III. Sp. gr. 8.8. Discovered by Brand, 1735.	Usually occurs with arsenic or sulphur, and with nickel and other metals.	A hard, steel-gray, very ductile metal, resembling nickel, highly magnetic, and melts at 1500°C; unchanged in air.	It forms alloys, and is used in electroplating. Its principal commercial salts are pigments. Its oxid is used for glazing porcelain.	Slowly dissolved by HCl and sulphuric acids, but quickly by nitric acids.
COLUMBIUM (*Niobium*) Symbol Cb. At. wt. 94. Valence III. and V. Sp. gr. 7.2. Discovered by Hatchett, 1801.	Found in columbite, tantalite, and in small quantities in other minerals.	A steel-gray, lustrous powder.	Columbium forms three oxids of which the pentoxid forms salts called columbates or niobates.	
COPPER Symbol Cu. (*Cuprum*) At. wt. 63.6. Valence I. or II. Sp. gr. 8.95. Prehistoric.	Found native and as oxids, carbonates, and sulphids, in various minerals. Derived by smelting and other methods.	A reddish-yellow metal, bright luster, tenacious, sonorous, elastic, malleable, and ductile. Melts at 1057°C. Excellent conductor of electricity.	Two compounds; cuprous and cupric. Uses: for electrical appliances, sheathing of ships, boilers, electrotyping, coinage, in calico printing, dyeing, as an insecticide, and to make brass, bronze, gun metal, and copper sulphate or blue vitriol.	Copper compounds burn in a flame with a characteristically vivid blue or green color.
ERBIUM Symbol Er. At. wt. 166. Discovered by Mosander, 1843.	A constituent of the mineral gadolinite. Found with lanthanum, scandium, and ytterbium.	Erbium is similar to the earthy elements with which it is found; has not been isolated.	Erbium forms a series of rose-colored salts that give an acid reaction with litmus.	
FLUORIN Symbol F. At. wt. 19. Valence I. Sp. gr. 1.1. Discovered by Scheele, 1771.	Occurs in fluorite, cryolite, and many other minerals; in water, stems of grass, bones, and other animal substances.	A light, greenish-yellow gas; penetrating and disagreeable odor, irritating the eyes and mucous membrane.	Hydrofluoric acid is used for glass etching. Certain compounds of fluorin form valuable antiseptics, and are also used for preserving food.	Fluorin unites directly with almost all elements; it decomposes water, and almost all compounds, except those with oxygen.
GADOLINIUM Symbol Gd. At. wt. 156. Valence III. Discovered by Marignac, 1886.	A rare element occurring in the mineral gadolinite with ytterbium, erbium, and other rare earths.	Its spectrum is characteristic. Properties imperfectly known.	Its chief compound is the oxid.	
GALLIUM Symbol Ga. At. wt. 70. Valence II. or III. Sp. gr. 5.9. Discovered by Boisbaudran, 1875.	Found in minute quantities in zinc ores. Discovered by use of the spectroscope.	A fairly hard, gray metal. Melts at 30.18° C. The only metallic element, besides mercury, which can be liquid at ordinary temperatures.	It combines with oxygen, forming a monoxid and a sesquioxid, and with chlorin to form a dichlorid and a trichlorid.	Dissolves readily in hydrochloric acid or caustic soda solution.
GERMANIUM Symbol Ge. At. wt. 72.5. Valence IV. Sp. gr. 5.5. Discovered by Winkler, 1886.	Found in small quantities in minerals, from which it is obtained as a sulphid, and reduced to metallic condition by heating in hydrogen.	A grayish-white, lustrous, brittle metal, melting at about 900° C.	It combines with oxygen to form a germanic oxid and a germanious oxid, and with other elements to form a series of salts.	Insoluble in HCl; easily soluble in aqua regia.
GLUCINUM (*Beryllium*) Symbol Gl. At. wt. 9.1. Valence II. Sp. gr. 1.9. Discovered by Wöhler, 1828.	Occurs as a constituent of various minerals, such as beryl, chrysoberyl, and phenacite.	A steel-colored, malleable metal; melting point below 1000° C.	Combines with oxygen, forming glucinum oxid, a white, infusible powder with a sweetish taste. Its compounds have no economic value.	The salts give no color to the Bunsen flame.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
GOLD Symbol Au. (*Aurum*) At. wt. 197.2. Valence I. or III. Sp. gr. 19.3. Prehistoric.	Occurs native and free in placer mines, and mixed with quartz.	A yellow, very heavy, the most malleable and ductile metal; very soft. Melts at 1064°.	The chlorid of gold used in photography; the metal used for coinage and jewelry.	Insoluble in any acid except aqua regia, formed by mixing nitric and hydrochloric acids. Practical test nitric acid, which has no effect upon gold.
HELIUM Symbol He. Monatomic. Lockyer, 1868. Ramsay, 1895.	In the atmosphere, natural waters, and rare minerals when heated.	A colorless gas scarcely twice as heavy as hydrogen; may be liquefied.	Will not combine with other elements.	Very insoluble in water, the most difficult of all gases to liquefy.
HYDROGEN Symbol H. At. wt. 1.008. Valence I. Sp. gr. 0.69. Discovered by Cavendish in 1766.	1. Electrolysis of water. 2. Decomposition of water by (*a*) Sodium, $Na + H_2O = NaOH + H$. (*b*) Potassium, $K + H_2O = KOH + H$. 3. Action of sulphuric acid on zinc, $H_2SO_4 + Zn = ZnSO_4 + H_2$.	Colorless, odorless, and tasteless; lightest element known; is combustible; combines with oxygen to form water. Boiling point −252.5°; freezes at −257°.	Water (H_2O), hydrogen peroxid(H_2O_2), illuminating gas, and nearly all the organic compounds. Uses: Oxyhydrogen blowpipe, light, and blast flame. A constituent of all acids.	Burns with a pale flame; does not support life or combustion; lighter than all other gases; distinguished by absence of color and odor.
INDIUM Symbol In. At. wt. 115. Val. I. and III. Sp. gr. 7.1. Discovered by Reich and Richter, 1863.	Occurs in certain zinc ores.	Metallic indium is ductile, silver-white, and lustrous. Its melting point is at 176° C.	With oxygen indium forms two compounds, a monoxid (InO), and a sesquioxid (In_2O_3). Other oxids are said to exist.	Indium is not acted upon by air or boiling water, but burns to its sesquioxid, when heated in air, with a blue-violet flame.
IODIN Symbol I. At. wt. 126.97. Sp. gr. 5. Valence I. or II. Discovered by Courtois, 1811.	Occurs in sea weeds and sea water. From the ashes of sea weeds and from sodium nitrate, commercial iodin is obtained.	A lustrous, grayish-black, soft crystalline solid. Volatilizes into a blue-violet gas, with an irritating odor. Dissolves freely in alcohol, chloroform, and ether.	Forms a class of compounds known as iodids. Used in the arts and in medicine.	Gives a deep blue color to starch paste. Stains the skin yellow.
IRIDIUM Symbol Ir. At. wt. 193. Val. II. or IV. Sp. gr. 22.4. Discovered by Tennant, 1804.	Occurs in alluvial deposits, along with platinum, and is separated from it and other similar metals by chemical processes.	A very hard, white, brittle, lustrous metal, extremely infusible.	Iridium alloys with other platinum metals and gold, copper, and lead. Used in making standard weights, balances, tips of pens, and for coating surgical instruments.	Iridium is insoluble in several mineral acids, and also in aqua regia.
IRON Symbol Fe. (*Ferrum*) At. wt. 55.9. Valence II. or III. Sp. gr. 7.9. Prehistoric.	Alloyed with a small percentage of nickel. It occurs in ores known as brown or red hematite and limonite. When endowed with magnetic properties the ore is known as magnetite. Sulphid of iron or iron pyrites (fool's gold) is iron ore containing sulphur.	Silver-white; crystallizes in the isometric system; fuses at from 1400° to 1500° C. Very tenacious, ductile, magnetic, malleable, and can be tempered. Iron is soluble in acids. Dry air or oxygen does not act upon it, but moisture causes rust, which can be prevented by a coating of paint or varnish, or of such metals as zinc, tin, nickel, copper, or lead.	Pig or cast iron, wrought or puddled iron, and steel; produced by blast furnace, puddling, crucible, Bessemer, and open hearth process. Ferric oxid, as a paint and polishing powder; magnetic oxid, to protect iron in the Bower-Barff process. Ferrous sulphid, for preparing hydrogen sulphid gas; ferrous sulphate, in dyeing, tanning, ink; both ferrous and ferric salts in medicine; ferric hydroxid — a useful antidote for poisoning by arsenious oxid; cast iron, as foundation work; wrought iron, used where it has to undergo strain, and for electro-magnetic purposes.	
KRYPTON Symbol Kr. Monatomic. Sp. gr. 2.2. Discovered by Ramsay and Travers, 1898.	Found in the atmosphere.	A colorless gas that liquefies at −152° C. Chemically inactive.		
LANTHANUM Symbol La. At. wt. 138.9. Valence III. Sp. gr. 6.2. Disc. by Mosander, 1839.	Occurs in such rare minerals as cerite, orthite, monazite, gadolinite.	A white, fairly malleable and ductile metal. Harder than cerium.	Forms one oxid (La_2O_3), and colorless salts, though another is said to exist.	Lanthanum burns brilliantly when heated in air. Easily attacked by cold. Oxidizes rapidly in dry air.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
LEAD Symbol Pb. (*Plumbum*) At. wt. 206.9. Valence II. and IV. Sp. gr. 11.4. Prehistoric.	Found native in small quantities, usually with a little silver or antimony. Extracted from its ores and metallurgical products by roasting and reaction, roasting and reduction, and precipitation. Commercial lead is almost all obtained from galena.	A bluish-gray, lustrous metal, exceedingly malleable and ductile, very soft, and with but little tenacity. It leaves a black streak on white paper, and is an inferior conductor of electricity and heat. Lead is somewhat soluble in water. Pure dry air does not affect it, but air and moisture cause it to become coated with oxid. Resists the action of acids.	Compounds of lead with oxygen are litharge and minium; the former is used in making flint glass, as a glaze for earthenware, in the preparation of lead salts, as a paint, and for drying oils; the latter is used in the arts as a pigment, in the manufacture of flint glass, as a cement for making steam-tight joints, and in making secondary batteries. White lead is used as a pigment, and as a body for colors in making paint. Lead acetate is used in medicine, in the arts, in refining sugar. Lead sulphate is a substitute for white lead. The lead chromates are used in calico printing. Lead is also used in making shot. Lead compounds are all poisonous. There are five different oxids of lead.	
LITHIUM Symbol Li. At. wt. 7.03. Valence I. Sp. gr. .59. Disc. by Arfvedson, 1817.	Occurs in small quantities in rare minerals, also mineral water, and leaves of certain plants, especially of tobacco and beets.	A soft, white metal, the lightest solid known. Floats upon water.	Oxid, carbonate, citrate, and salicylate are its compounds.	Lithium imparts a red coloration to an otherwise colorless flame.
MAGNESIUM Symbol Mg. At. wt. 24.36. Valence II. Sp. gr. 1.7. Discovered by Liebig and Bussy, 1830.	Widely distributed in nature. Occurs in magnesite, dolomite, epsom salts, and kieserite. Prepared by electrolysis from carnallite.	A very lustrous, light, silver-white, ductile, malleable, moderately hard, rather tough metal.	Magnesia and the several carbonates, citrate of magnesia, magnesium chlorid, asbestos, soapstone, and meerschaum are the chief compounds. Used making flash light powder for use in photography, also in pyrotechny.	Burns with an intense white light.
MANGANESE Symbol Mn. At. wt. 55. Valence II., IV., VI., VIII. Sp. gr. 7.4. Discovered by Gahn, 1774.	Occurs in ores, chief of which is pyrolusite, mineral waters, and in many plants.	A very hard, grayish-white, brittle metal with a reddish luster. Takes a high polish and is not malleable. Melts at about 1900° C. Rusts in moist air.	Forms several oxids, used in making chlorin, black enamel for pottery, glass, and in the preparation of oxygen; chlorid used in calico printing; pure manganese used in making steel, and as a constituent of alloys.	Changes its character totally with change in valence.
MERCURY Symbol Hg. (*Hydrargyrum*) At. wt. 200. Valence I. or II. Sp. gr. 13.6. 300 B. C.	Occurs free and as cinnabar. Chief mines are in Spain, California, and Austria.	A heavy, silver-gray or nearly white, very lustrous, cohesive, mobile liquid. Freezes at −40°. Dissolves most metals. Performs amalgams.	Red oxid of mercury, mercuric chlorid or corrosive sublimate, one of the best antiseptics known, and mercurous chlorid or calomel, are the chief compounds. Mercury is used in barometers, thermometers, and for extracting gold and silver.	The vapor is colorless, does not conduct electricity, and is monatomic.
MOLYBDENUM Symbol Mo. At. wt. 96. Val. II. or VI. Sp. gr. 8.6. Discovered by Hjelm, 1790.	Found chiefly in wulferite and molybdenite, which resembles black lead.	A very hard, silver-white metal, with a melting point above that of platinum.	The chief use of molybdenum is in the manufacture of tool steel. Its alloy with nickel is used for large cranks, guns, rifle barrels, wiring, and boiler plates.	Not a base-forming element.
NEON Symbol Ne. At. wt. 20. Discovered by Ramsay and Travers, 1898.	Present in the atmosphere to the extent of one or two parts per 100,000.	A colorless, gaseous element, chemically inactive.	Disinclined to unite with other elements.	Neon glows red-orange in a vacuum tube, and is marked by strong red and green lines in its spectrum.
NICKEL Symbol Ni. At. wt. 58.7. Val. II. and IV. Sp. gr. 8.8. Disc. by Cronstedt, 1751.	Occurs free in meteorites and in niccolite and nickel glance. It is manufactured chiefly from garnierite. Extracted from the ores by smelting and electrolysis.	A silver-white, lustrous metal that is magnetic, ductile, hard, tenacious, and capable of taking a fine polish. Its melting point is about 1400° C.	Nickel forms nickelous and nickelic oxids and hydroxids; used in making alloys, currency, nickel-plating. The carbonate is used in electroplating.	Rusts very slowly in moist air.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
NITROGEN Symbol N. At. wt. 14.04. Valence III. and V. Sp. gr. of gas 0.97; liquid 0.80. Discovered by Rutherford in 1772.	Four fifths of the atmosphere. Prepared by burning the oxygen out of the air with phosphorus, which forms phosphorus pentoxid (P_2O_5) and dissolves in water; by passing nitrous oxid over heated copper, $N_2O + Cu = CuO + N_2$; by action of chlorin upon ammonia, $3Cl_2 + 8NH_3 = N_2 + 6NH_4Cl$.	Odorless, colorless, tasteless, not combustible nor a supporter of combustion. Animals in an atmosphere of N die for want of oxygen. One of the most inert of the elements, except in the nascent state. Liquefies by pressure at −146°; boils at −194°.	Carbon dioxid (CO_2). Ammonia gas (NH_3). Ammonia liquor (NH_4OH). Nitric acid (HNO_3), and the nitrates. Important in the manufacture of explosives, antipyrine, and dyes.	Differs from O by not supporting life or combustion; from chlorin by its absence of color or odor; from hydrogen by its weight and its incombustibility; from CO_2 by its weight.
OSMIUM Symbol Os. At. wt. 191. Val. II. or VII. Sp. gr. 22.5. Discovered by Tennant, 1804.	Found native alloyed with rhodium, ruthenium, and palladium.	A lustrous, bluish-white, hard, crystalline metal, extremely infusible.	Osmium is used to make the filaments of incandescent electric lamps, as an alloy for machinery bearings, and as tips of gold pens. Osmic acid is used in microscopy.	Its compounds with oxygen form four oxids. When ignited, insoluble in all acids.
OXYGEN Symbol O. At. wt. 16. Valence II. Sp. gr. 1.1504. Discovered by Priestley in 1774.	1. Mercuric oxid (HgO) heated in a tube gives metallic mercury and oxygen. HgO + heat = Hg + O. 2. Potassium chlorate ($KClO_3$) heated in the presence of black oxid of manganese, gives oxygen. $2KClO_3 + MnO_2 = 2KCl + MnO_2 + 3O_2$.	Colorless, tasteless, odorless, soluble in water sparingly. Unites with many substances, forming oxids. Supports combustion. Ozone (O_3) is an allotropic form,—a colorless or bluish unstable gas with a strong odor. Boils at −181.4° C.; freezes at −235° C.	Most abundant element in nature. Found in air, water, and all oxids, etc. Uses: Indispensable to human and animal life, and to the support of flame. Used in medicine, for collapse and heart failure.	A glowing splinter or an ignited sulphur-tipped watch spring will burn in it. Differs from other supporters of combustion in the violence with which bodies burn in it. Does not burn itself. Absence of color and odor distinguishes from some other gases.
PALLADIUM Symbol Pd. At. wt. 106.5. Val. I., II., IV. Sp. gr. 11.4. Disc. by Wollaston, 1803.	Found in grains usually containing platinum and iridium, gold and silver, also gold and lead.	A grayish-white, lustrous metal, fairly malleable and very ductile.	Used for making scales and division marks on scientific instruments, for coating and preserving silvered wire; used in dentistry.	Combined with oxygen, forms four oxids. Noted chiefly for its great tendency to absorb hydrogen.
PHOSPHORUS Symbol P. At. wt. 31. Val. III. and V. Sp. gr. 1.8. Discovered by Brand, 1674.	Found in nature in the form of phosphates. Prepared from bones by distillation. Occurs in allotropic forms as red, yellow, or ordinary, and crystalline phosphorus.	Yellow form, a waxy solid; combustible on exposure to the air; kept under water; is cut with ease; faint odor of garlic. Red form, dull, odorless, tasteless powder.	It forms three hydrids and three oxids. Red phosphorus used for friction matches, in phosphates (for fertilizers), in rat poisons, and for phosphor-bronze.	Distinguished from sodium and potassium by odor, color, combustibility, and behavior in water. Odor is distinctive. Red form burns with slight friction.
PLATINUM Symbol Pt. At. wt. 194.8. Valence II. or IV. Sp. gr. 21.5. Discovered 16th century.	Found in composition with other rare metals in the river deposits in the Ural Mountains.	A very heavy, grayish-white, malleable, ductile and tenacious metal, melting at 1700-2000° C. Expands almost equally with glass. Does not rust. A fair conductor of electricity and resists the action of many chemical elements.	Compounds of platinum and potassium used in photography; spongy platinum used in self-lighting gas burners, and metal platinum used in manufacture of electric apparatus.	Does not melt in the Bunsen flame. Small chemical activity.
POTASSIUM Symbol K. (*Kalium*) At. wt. 39.15. Valence I. Sp. gr. 0.87. Discovered by Davy, in 1807.	Occurs in many silicates in the mines of Stassfurt, Prussian Saxony. 1. Electrolysis of solution of potassium hydroxid (KOH). 2. Leaching hard-wood ashes.	White, brittle, solid, decomposes water as sodium does. Burns with a lilac color when thrown on water. Melts at 62.5°; boils at 720°.	Has many compounds. Potassium hydroxid (KOH) for washing or as lye, and in soap making. Potassium carbonate and potassium nitrate or saltpeter, potassium chlorite ($KClO_3$), used in medicine.	Burns with a violet or lilac flame in flame test. Potassium salts usually impart violet color to Bunsen flame.
RADIUM Symbol Ra. At. wt. 225. Disc. by M. and Mme. Curie, 1902.	Obtained from pitchblende, carnotite, and a few other rare uranium-containing minerals. A metal of the alkaline earth.	A substance three million times as active as uranium. It maintains its own temperature, 1.5° C., above its surroundings, and emits heat radiations in enormous quantities without combustion, chemical change, or decrease in energy.	Bromid and chlorid are its compounds. Radium salts have been applied to the cure of lupus; and are now being directed to the cure of cancer.	Radium gives a crimson color to flame. A radium salt contained in a celluloid capsule will, if left awhile on the skin, cause a wound hard to heal. Radium emanation is not permanent, and loses half its activity in four days.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
RHODIUM Symbol Rh. At. wt. 103.0 Val. II. or VIII. Sp. gr. 12.1. Disc. by Wollaston, 1803.	Occurs with other members of the platinum group, and alloyed with gold.	A white, hard, malleable metal, melting at about 2000° C.	It combines with oxygen and forms about four oxids. Its salts form red solutions. An alloy with platinum is used in some forms of pyrometers, and its alloy with steel is also valuable.	Insoluble in all acids, even aqua regia.
RUBIDIUM Symbol Rb. At. wt. 85.5. Valence III. Sp. gr. 1.5. Discovered by Bunsen, 1861.	Found with cæsium in lepidolite and petalite, in water from various springs, in ashes of seaweed and tobacco, in tea, and beet-root. Prepared by electrolysis.	A silver-white, soft metal that melts at 38.5° C., and evolves a bluish vapor at a dull, red heat. The most positive element next to cæsium.	With oxygen rubidium forms a monoxid similar to that of potassium. No oxid has been isolated.	Rubidium oxidizes rapidly in air, and decomposes water. Gives red color when heated in a non-luminous flame.
RUTHENIUM Symbol Ru. At. wt. 101.7. Val II. or VII. Sp. gr. 12.3. Discovered by Claus, 1845.	Occurs in its metallic state in platinum ores and in osmiridium, also as the sulphid in laurite.	A white, lustrous, hard, heavy, brittle metal that melts at about 2000° C; very infusible.	It forms several chlorids and oxids, which, in turn, form various salts, of no importance commercially.	Dissolves slowly in aqua regia, but insoluble in other acids.
SAMARIUM Symbol Sm. At. wt. 150.3. Valence III. Sp. gr. 7.8. Disc. by Boisbaudran, 1879.	A rare element occurring in samarskite and thorite.	The element has not been isolated.	Its compounds are oxid, a very faint yellow powder, and chlorid, topaz-colored deliquescent crystals.	Samarium is characterized by its spark spectrum, and by the absorption spectra of its salt solutions.
SCANDIUM Symbol Sc. At. wt. 44.1. Valence III. Discovered by Nilson, 1879.	A very rare metal occurring in gadolinite and euxenite.	The element has not been isolated.	Forms colorless salts, derived from an oxid.	Spectrum (spark) is characteristic and very complex.
SELENIUM Symbol Se. At. wt. 79.2. Val. II. or VI. Sp. gr. 4.5 (c). Disc. by Berzelius, 1817.	Occurs with copper, lead, silver, sulphids, and several rare minerals, as well as in the lavas of Vesuvius.	It is of a dark brown or gray color by reflected light, but red in thin pieces by transmitted light. Selenium is both odorless and tasteless.	The crystalline variety of the element conducts electricity, upon which property the photophone was based. Its compounds are similar to those of sulphur.	Selenium burns with a reddish-blue flame that has an odor resembling horseradish.
SILICON Symbol Si. At. wt. 28.4. Valence IV. Sp. gr. 2.48. Discovered by Berzelius, 1823.	As silica or oxid of silicon, occurs in nature as quartz, rock crystal, amethyst, flint, agate, jasper, opal, sand, and many other earthy forms.	Exists in two forms: 1. Dark brown powder, melting with difficulty, known chiefly through its compounds. 2. Very lustrous, gray, metal-like leaflets.	A compound containing silicon and sodium is known as soluble or water glass. Used as a coating for stone, making artificial stone, glass, soap, fireproofing, and for preserving eggs.	1. Burns when heated in air: insoluble in water. 2. Does not change when heated.
SILVER Symbol Ag. (*Argentum*) At. wt. 107.93. Valence I. Sp. gr. 10.5. Prehistoric.	Occurs as argentite, stephanite, ruby silver ore and silver chlorid, or horn silver. Also mixed with lead or copper ore.	A pure white metal with brilliant luster. Harder than gold. Very malleable and ductile. Best conductor of heat and electricity.	Silver nitrate, used in medicine, photography, electroplating, and silvering mirrors. Alloyed with copper to make it harder. Used for coins and ornaments.	By blowpipe analysis, reduction, and extraction of the metal.
SODIUM Symbol Na. (*Natrium*) At. wt. 23.05. Valence I. Sp. gr. 0.98. Discovered by Davy, 1807.	Electrolysis of solution of moist sodium hydroxid (NaOH); by reducing sodium carbonate with coal and chalk; by reducing sodium hydroxid with an iron carbid,—Castner process. Sodium chlorid forms two thirds of solid matter in sea water and the great salt deposits.	Light, malleable, ductile, silver-gray, lustrous, soft metal; decomposes water by setting free one atom of H, and forming sodium hydroxid (NaOH), with the hydroxyl radical. Melts at 96.6°; boils at 742°.	Sodium hydroxid, washing soda, or soda lye, used in soap making. Sodium chlorid, or common salt (NaCl); sodium carbonate and bicarbonate (baking soda); sodium nitrate (Chile saltpeter); borax, soluble glass, and hyposulphite of soda used in photography.	Burns with yellowish flame in flame test. All sodium salts color Bunsen flame yellow.
STRONTIUM Symbol Sr. At. wt. 87.6. Valence II. Sp. gr. 2.5. Discovered by Davy, 1808.	Found in celestine, strontianite, and other minerals, also in mineral and sea waters and ashes of certain plants.	A yellow metal, which melts at a moderate red heat, malleable and ductile, and is less electropositive than calcium and the alkali metals.	Strontium combines with oxygen to form a monoxid and a dioxid. Used to separate sugar from beet-root molasses and in pyrotechny.	Strontium oxidizes quickly in air, and burns brilliantly when heated. It acts on water, setting hydrogen free. Its salts color Bunsen flame red.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
SULPHUR Symbol S. At. wt. 32.06. Valence II., IV. or VI. Sp. gr. 2.043. Prehistoric.	Occurs native near volcanoes, and mixed with ores as sulphids. Takes on several forms according to temperature: rhombic, prismatic, and amorphous. Sicily yields 500,000 tons of sulphur a year.	Brittle, yellow, lustrous, hard. Unites readily with oxygen, and directly with copper, zinc, and iron to form sulphids. Melts at 114°, boils at 444°.	Sulphur in matches, gunpowder, and vulcanizing. Hydrogen sulphid (H_2S), a gas used in laboratory testing of minerals and metals. Sulphur dioxid (SO_2), disinfectant, bleaching, and making sulphuric acid, which is of wide industrial use.	Burns with bluish, pale, lambent flame; giving off suffocating odor. Its gas does not burn or support combustion.
TANTALUM Symbol Ta. At. wt. 183. Valence V. Sp. gr. 16.8. Discovered by Ekeberg, 1802.	Occurs associated with columbates in columbite, tantalite, and yttrotantalite. Its separation is by a long complicated chemical method.	A rare metal resembling platinum, when pure, malleable and very ductile; when impure it is a black powder that assumes an iron-gray metallic luster under a burnisher.	Tantalum drawn into wire is used in incandescent electric lamps. Chief compounds are its acidic oxid, and its compound with potassium and fluorin.	Its salts are called tantalates. When heated in air, begins to oxidize, turning yellow.
TELLURIUM Symbol Te. At. wt. 127.6. Val. II. or VI. Sp. gr. 6.2. Disc. by Reichenstein, 1782.	Occurs free, and as graphic tellurium, as nagyagite, as silver tellurid, and as bismuth tellurid, also in gold and copper ores.	A white, shining, crystalline, brittle solid, which melts at about 452° C., resembles selenium. It is a black powder when formed by precipitation.	Tellurium combines with oxygen to form three oxids, two of which unite with water to form acids, which in turn yield a series of salts.	Burns to the dioxid with a blue flame, when heated in air.
TERBIUM Symbol Tb. At. wt. 160. Valence III. Discovered by Mosander, 1843.	Still doubtful whether terbium is a single substance or a mixture.	The metal has not been isolated but belongs to the rare earths.	Its oxid is a dark orange powder.	
THALLIUM Symbol Tl. At. wt. 204.1. Val. I. or III. Sp. gr. 11.9. Discovered by Crookes, 1861.	Occurs with copper and silver, in crookesite, in pyrites, in the seleniferous deposits from sulphuric acid, in other minerals, and in mineral waters. Prepared from flue-dust of works in which sulphuric acid is made.	A soft, crystalline, lead-like metal, melting at 290° C; a poor conductor of electricity.	It combines with oxygen to form a monoxid and trioxid, which yield a series of salts known as the thallous and thallic compounds. Its compounds are very poisonous, in effect resembling lead poisoning.	Thallium tarnishes rapidly when exposed to the air, becoming coated with oxid, which preserves the rest of the metal. Thallium may be detected by the green line in its flame spectrum.
THORIUM Symbol Th. At. wt. 232.5. Valence IV. Sp. gr. 11.2. Disc. by Berzelius, 1828.	Occurs in monazite, orangeite, thorite, and other rare minerals. Radiothorium—a radioactive substance, a product of thorium.	A grayish-white powder which assumes an iron-gray luster when burnished; somewhat brittle, infusible, insoluble in water.	It forms two oxids, dioxid or thoria, and probably a peroxid or heptoxid. Thoria is used in the manufacture of the Welshbach gas mantles.	Thorium takes fire when heated in air, burning with a bright flame
TIN Symbol Sn. (*Stannum*) At. wt, 119.0. Valence II. or IV. Sp. gr. 7.3. Prehistoric.	Found in nature chiefly as the mineral cassiterite or "tinstone" (SnO_2). Ore is washed, roasted, and smelted. The reduced metallic tin is tapped off and melted from impurities.	A silver-white, malleable, ductile metal, of low tenacity, and highly crystalline. Melts at 232° C., boils at 1500° C. Poor conductor of electricity. Takes a high polish. Tin is little acted on by air. Heated in air, it rapidly oxidizes, forming tin dioxid, used for polishing.	Used to coat other metals to prevent rusting or corroding, as a lining for copper vessels and lead pipes to prevent these poisonous metals from contaminating food and water. Tin dioxid forms stannates with basic oxids, sodium stannate being used in calico printing. Stannous chlorid is used as a mordant. Tin is used in the manufacture of tin plate, tin foil, alloys, bell metal, bronze, gun metal, pewter, type metal, etc. Stannic sulphid, known as "mosaic gold," was formerly used for gilding, imitating bronze, etc.	
TITANIUM Symbol Ti. At. wt. 48.1. Val. IV. Sp. gr. 3.5. Discovered by Gregor, 1789.	Occurs in anastase, brookite, and rutile, in titanite of iron, and in other minerals.	A dark gray amorphous powder resembling reduced iron. It is distinguished from almost all other metals for its capacity of uniting with nitrogen at a high temperature.	Titanium gives hardness and toughness to steel and a fine luster to silver, and also increases the brilliancy of arc lamps. Its compounds with oxygen are dioxid, trioxid, and sesquioxid. Titanates are formed from the dioxid.	Burns with an intense light when heated to redness in the air. Decomposes boiling water, and is soluble in dilute acids.
TUNGSTEN (*Wolframian*) Symbol W At. wt. 184.0. Val. VI. Sp. gr. 19.3. Disc. by d'Elhujar, 1783.	Occurs in wolfram or tungstate of iron, and in scheelite or calcium tungstate.	A bright, steel-gray, hard, brittle, crystalline substance, difficult of fusibility; high unknown melting point.	Sodium tungstate, one of its compounds, is used for fireproofing textiles, as a mordant, and as a bronze pigment. Tungsten is used as an alloy with steel and nickel.	Oxidized in air only at red heat; slowly attacked by water containing carbonic acid.

Name of Element.	Mode of Preparation.	Properties.	Chief Compounds and Uses.	Tests and Characteristics.
URANIUM Symbol U. At. wt. 238.5. Val. IV. Sp. gr. 18.7. Disc. by Klaproth, 1789.	Found as an oxid in uraninite or pitchblende, and also occurs in uranocher.	A hard, silvery-white, somewhat malleable metal which melts near white heat, or a grayish-black powder. It has the highest atomic weight of all the elements.	It produces uranic salts. Uranic oxid also acts as an acid, forming uranates of the alkali metals. The compounds are used in china painting, and as photographic reagents.	Easily oxidized in air on heating; decomposes water slowly.
VANADIUM Symbol V. At. wt. 51.2. Valence V. Sp. gr. 5.9. Disc. by Berzelius, 1831.	Found in mottramite, vanadinite, roscoelite, and other minerals, in the form of vanadates.	A light gray, crystalline, lustrous powder, very infusible; not magnetic.	Forms an alloy with platinum, produces five oxids, besides several chlorids. Used to harden steel, in dyeing, and in making ink.	Powder burns in Bunsen flame; does not oxidize in air at ordinary temperature.
XENON Symbol Xe. At. wt. 128. Sp. gr. 3.5. Discovered by Ramsay and Travers, 1898.	A gas found in the atmosphere, in quantities of one part in 20,000,000 parts of air. Its boiling point is —109.18 C., and its melting point, —140° C.	The heaviest and rarest of the elementary gases of the argon family. It is colorless.	It has no reactions and is monatomic.	Xenon when sparked in a vacuum tube is marked by a characteristic blue glow, which changes to green on the introduction of a Leyden jar, and shows distinctive spectrum lines.
YTTERBIUM Symbol Yb. At. wt. 173.0. Valence III. Discovered by Marignac, 1878.	A very rare metal occurring in gadolinite, euxenite and samarskite.	It has not been isolated from other elements.	It forms with oxygen (Yb_2O_3), and a sulphate, ($Yb_2(SO_4)_3 \cdot 8H_2O$).	
YTTRIUM Symbol Yt. At. wt. 89.0. Valence III. Sp. gr. 3.8. Discovered by Wöhler, 1828.	Found with other cerium metals as a silicate, in gadolinite and allanite, and as a fluorid in yttocerite.	A dark gray powder that assumes the luster and color of metallic iron when burnished.	It forms a sesquioxid, which is a yellowish-white powder. It is said to be used in the Nernst incandescent electric lamp.	The oxid glows strongly when heated. The metal has a characteristic spark spectrum.
ZINC Symbol Zn. At. wt. 65.4. Valence II. Sp. gr. 7.1. Discovered by Paracelsus, 1520.	Occurs in ores; sphalerite, smithsonite or calamine, willemite, zincite, and franklinite. Principally obtained from zinc oxid.	A bluish-white crystalline, brittle, lustrous metal.	In sheets used for roofing, mixed with copper to form brass, for coating or galvanizing; zinc sulphate, or white vitriol, in medicine; zinc chlorid, an antiseptic, a caustic, and an irritant poison.	When strongly heated in air it burns with a bluish-white flame, giving zinc oxide.
ZIRCONIUM Symbol Zr. At. wt. 90.6. Valence IV. Sp. gr. 4.2. Discovered by Berzelius, 1825.	Occurs in combination with silica in the mineral zircon, and also in certain rarer minerals, including eudialyte, fergusonite, and polymignite.	A black amorphous powder which has also been obtained as a lustrous, gray, brittle, crystallized solid. Its melting point is above 1300° C.	The dioxid, a white, tasteless powder, has been used instead of lime in the oxyhydrogen flame, and with other rare earths for the mantle of the Welsbach burners. The oxid also yields zirconates. The pure crystals are used in jewelry.	Only oxidized at a very high temperature.

Note. The following list contains some non-metals and rare metals, with the properties, compounds, etc., which have thus far been discovered:—

Didymium. Symbol **Di.** Said to be a compound of the two elements, *neodymium* and *praseodymium*; it is a yellowish-white, malleable, ductile metal; it oxidizes in air; burns when finely divided, producing much light. At. wt. 142 (?); sp. gr. 6.5; several oxids are said to exist. It was discovered in 1842 by Mosander, in mineral cerite.

Dysprosium. Symbol **Dy**; at. wt. 162.5. An element of the rare earth group.

Europium. Symbol **Eu**; at. wt. 152. A metallic element of the rare earth group, discovered spectroscopically by Demarçay in 1896.

Lutecium. Symbol **Lu**; at. wt. 174. A metallic element separated from ytterbium in 1907, by Urbain, in Paris, and by Welsbach in Vienna.

Neodymium. Symbol **Nd**; at. wt. 143.6; valence III.; sp. gr. 7. One of the metallic elements of *didymium*, discovered by Welsbach in 1885; so called from the pink salts to which it gives rise in the solution.

Polonium. This element is so named by its discoverer, Mme. Curie, from her native country, Poland. It was the first of the radio-active substances antedating radium, and was discovered by her in an impure form in 1898. February 15, 1910, her success in producing "a new element possessing radio-activity superior to radium" was announced. Unlike radium, which conserves its energy for an indefinite period, polonium loses its radio-activity rapidly. A tenth of a milligram produced, lost half in 140 days, the time used in the experiment.

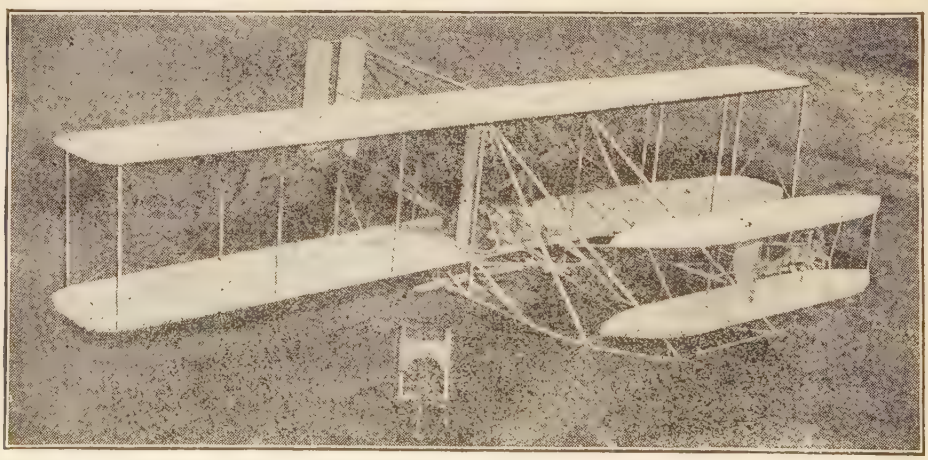
Praseodymium. Symbol **Pr**; at. wt. 140.5; valence III. or IV.; sp. gr. 6.5. One of the two components of *didymium*; so called from the green color of its salts; discovered by Welsbach in 1885.

Thulium. Symbol **Tm**; at. wt. 171; valence III.; found in gadolinite; resembles ytterbium; discovered by Cleve in 1879.

Victorium. A probable chemical element discovered by Sir William Crookes in 1901, by fractionization of yttrium salts. Atomic weight about 117. Named in honor of Queen Victoria.

AERONAUTICS AND AVIATION. The invention of balloons followed quickly upon the discovery of hydrogen gas made by Cavendish in 1766. After a series of experiments with this light gas the Montgolfier brothers, Etienne and Joseph, made balloons of silk in 1782; and in the following year succeeded in raising a balloon 35 feet in diameter to a height of 1,500 feet. The first aerial voyage was made by De Rosier in 1783 at Paris, when a flight of 25 minutes was sustained. The English Channel was crossed from Dover to Calais by balloon in 1785 by Blanchard and Jefferies. The first descent by a parachute was made in 1797 by Garnerien. The modern balloon is made of any pliable cloth, but preferably of silk, and is varnished to render it air-tight. The bag is ordinarily from 20 to 30 feet in diameter and is protected by a network of cords, to the ends of which, under the bag, a car is attached for the accommodation of passengers. This car is usually a large wicker basket. In the top of the bag is inserted a valve connected with the car by a valve cord, which permits control of the supply of gas in the bag. The equipment of a car consists of ballast, usually sand in bags, a barometer for telling the height reached, a map, a compass, and a grappling iron or anchor to assist in alighting. The upward and downward flight of the balloon is controlled by the ballast or sand which is thrown out to cause the balloon to ascend, and by the valve which permits the escape of gas and causes the balloon to descend. These are the only motions over which the aeronaut has control in a balloon. The onward motion is entirely dependent upon the direction of the wind. Dirigible balloons are those provided with apparatus which to some extent control the onward motion of the balloon. The earliest experiments in this direction were made in 1883 by Tissandier; Count Zeppelin, whose record in 1909 of 900 miles in direct flight was the greatest attained up to that time, began his experiments in 1900; and Santos-Dumont in 1901 made several ascents in Paris, sailing from St. Cloud around the Eiffel Tower, which was up to that time a remarkable feat. The steering apparatus is some form of screw propeller operated by benzine motors. Other directions in which the solution of the problem of aerial flight has been attempted with a great measure of success are several classes of air ships including those forms in which screw propellers revolving on vertical axes sustain or lift the weight of the apparatus; those in which flight is accomplished by the beating or flapping of wings; and the aeroplane contrivances which have superseded all forms of airships except the dirigible balloons. The greatest success has been attained by the American inventors, Orville and Wilbur Wright, brothers, of Dayton, Ohio, whose successful solution of aerial problems has won for them great fame both at home and abroad.

THE ZEPPELIN AIRSHIP OVER FRIEDRICHSHAFEN.



THE WRIGHT AEROPLANE.

The longest recorded flights are those of Count Zeppelin (1909) of over 900 miles by dirigible balloon; the famous trip of the Centaure from Paris to Russia, 1,193 miles, an ordinary balloon filled with a mixture of hydrogen and illuminating gas (1900); and one from Paris to Sweden of 824 miles in the same year.

It is impossible to give all the important aviation events of 1909. The new science of flight swept through the civilized world like a tornado, and the innovations and phenomenal successes were bewildering. Thousands of notable flights were made. Exhibitions of aviation apparatus were held in Paris December 24-30, 1908, and September 25-October 17, 1909; in London March 19-27, and July 6-August 4; in Frankfort July 10 and October 19; while meets, tournaments, and other contests of varying types were held at Rheims August 22-29; at Brescia September 5-20; at Berlin September 26-October 3; at New York September 25-October 3; at St. Louis October 4-10; at Blackpool October 22-29; and at Doncaster, England, October 15-23.

Among the scintillant cross country flights was that of Bleriot, who flew from Tours to Artenay without landing in 1908, and from Etamps to Chenilly, 26 miles, July 13, 1909, also crossing the English Channel in an aeroplane July 25, 1909; Latham tried unsuccessfully to cross July 19 and July 25, but flew over Berlin September 27, and made 90 miles an hour down the wind at Blackpool, England, October 22, 1909. H. Farman flew from Chalons to Suippes, 40 miles, July 23, also flying 112 miles at Rheims, August 27, in 3 hours and 10 minutes, and a flight of 144 miles at Mourmelon, November 3, in 4 hours, 6 minutes, and 25 seconds. Orville Wright did good work at Fort Myer July 27-30, and Wilbur Wright at New York, October 4; de Lambert flew over Paris October 18, and Delegrange broke the world's aeroplane speed record October 26, with 1 mile and 860 yards in 1 hour and 47 and 1-5 seconds. The Mourmelon record of Farman beat all aeroplane records for distance and endurance in an aeroplane, winning him the Michelin Cup; the best previous record being his flight of 111.78 miles at Rheims, when he won the Grand Prix de la Champagne. January 12, 1910, at Los Angeles, Paulhan, in a biplane, reached a height of 4,165 feet, in 7 minutes and 30 seconds.

J. A. D. McCurdy made some good records for Canada at Baddeck and at Hammondsport; at the latter place, on July 4, in a biplane, McCurdy reached a height of 3,420 feet with "The Bug," and on March 11, 1909, he went 19 miles in 22 minutes in the biplane, "Silver Dart." F. W. Baldwin, also a Canadian, at Hammondsport reached 319 feet with a biplane.

The casualties were heavy; Eugene Lefebvre was killed at Juvissy on September 7, and the same day Enea Rossi was killed at Rome, testing a machine he had invented. September 22 the most distinguished aviator in France, Capt. L. F. Ferber, was killed at Boulogne by an unlucky landing, and September 25 the balloon "Republique" exploded at Moulins, France, killing four army officers.

It is interesting to recall that the first "Hudson Flight" was made August 3, 1895, by Carl E. Myers, of Frankfort, N. Y., who, in his "Sky-cycle-airship," flew by man power from the Brooklyn Navy Yard across to New York, returned to Brooklyn, again crossing New York to the Hudson River, and following the water to a safe landing at Yonkers. The principle of his machine was the action of air produced from a helix of canvas, and applied to a hydrogen gas spindle. It was then exhibited in 13 states and is claimed to have reached a height of 11,800 feet.

Interesting Motor Aeroplane Flights 1909-1910.

Date.	Machine.	Name.	Place.	Distance.	Time.	Persons.	Remarks.
June 12	Monoplane	Bleriot	Juvissy	984 feet	.....	3	
July 10	Biplane	Paulhan	Doual	1.25 mile	.....	1	First flight.
July 13	Monoplane	Bleriot	Mondesir	26 miles	0.44.30	1	Cross country.
July 19	Monoplane	Latham	Calais	11 miles	.....	1	Fell in English channel.
July 19	Biplane	Paulhan	Doual	12.1 miles	0.22.53	1	Cross country.
July 23	Biplane	Farman	Chalons	40 miles	1.5.00	1	Cross country.
July 24	Biplane	Curtiss	Mineola	25 miles	0.52.30	1	Won Scientific American cup.
July 25	Monoplane	Bleriot	Calais	32 miles	0.37.00	1	First across British channel.
July 27	Monoplane	Latham	Calais	20 miles	.....	1	Fell in British channel.
July 27	Biplane	Sommer	Chalons	25 miles	1.23.30	1	Cross country.
Aug. 2	Biplane	Sommer	Chalons	9 miles	0.12.00	1	Cross country.
Aug. 7	Biplane	Sommer	Chalons	.....	2.27.15	1	New world's record.
Aug. 25	Biplane	Paulhan	Rheims	81 miles	2.43.24	1	Third distance prize.
Aug. 26	Monoplane	Latham	Rheims	96 miles	2.18.00	1	Second distance prize.
Aug. 26	Biplane	de Lambert	Rheims	72 miles	1.52.00	1	Fourth distance prize.
Aug. 27	Biplane	Farman	Rheims	112 miles	3.4.57	1	First distance prize.
Aug. 27	Biplane	Lefebvre	Rheims	12.4 miles	0.20.47	1	Boldness and skill.
Aug. 27	Monoplane	Latham	Rheims	508 feet	.....	1	First altitude prize.
Aug. 27	Biplane	Tissandier	Rheims	69 miles	1.46 32	1	Sixth distance prize.
Aug. 28	Monoplane	Bleriot	Rheims	6.3 miles	0.7.48	1	First prize six miles.
Aug. 28	Biplane	Curtiss	Rheims	12.4 miles	0.15.56	1	Won Bennett cup.
Aug. 29	Biplane	Curtiss	Rheims	18.6 miles	0.23.30	1	First prize 30 kilometers.
Aug. 29	Biplane	Curtiss	Rheims	6.2 miles	0.7.51	1	Second prize 10 kilometers.
Sept. 8	Biplane	Cody	Aldershot	40 miles	1.3.00	1	Cross country.
Sept. 12	Biplane	Rougier	Brescia	31 miles	1.10.18	1	Reached 380 feet altitude.
Sept. 13	Biplane	Paulhan	Tournal	.....	1.35.00	1	Cross country.
Sept. 13	Monoplane	S. Dumont	St. Cyr	5 miles	0.12.00	1	Cross country.
Sept. 15	Biplane	Calderara	Brescia	5.6 miles	.....	2	Won Oldofredi prize.
Sept. 17	Monoplane	S. Dumont	St. Cyr	10 miles	0.16.00	1	Cross country.
Sept. 18	Biplane	Or. Wright	Berlin	.....	1.35.47	2	With Capt. Englehardt.
Sept. 20	Biplane	Calderara	Brescia	31 miles	0.50.51	1	Second speed prize.
Sept. 25	Biplane	W. Wright	New York	.....	.....	1	Circled "Liberty."
Sept. 27	Monoplane	Latham	Berlin	6.5 miles	0.13 00	1	Berlin suburbs.
Sept. 28	Biplane	Rougier	Berlin	31 miles	0.54.00	1	Reached 518 feet.
Oct. 1	Biplane	Rougier	Berlin	80 miles	2.38.00	1	First distance prize.
Oct. 3	Biplane	Farman	Berlin	62 miles	1.40.00	1	Third prize.
Oct. 4	Biplane	Or. Wright	Berlin	21 miles	0.33.33	1	Reached height 1,600 feet.
Oct. 4	Biplane	W. Wright	New York	21 miles	0.33.33	1	Grant's tomb and back.
Oct. 18	Biplane	de Lambert	Juvissy	31 miles	0.49.39	1	Eiffel Tower and back.
Oct. 19	Biplane	Paulhan	Blackpool	15.75 miles	0.32.18	1	Third distance prize.
Oct. 20	Biplane	Farman	Blackpool	47 miles	1.32.16	1	Won $10,000 prize.
Oct. 20	Monoplane	Le Blon	Doncaster	.....	.....	1	Flight in gale.
Oct. 22	Monoplane	Latham	Blackpool	.....	.....	1	Flight in gale.
Oct. 26	Monoplane	Delegrange	Doncaster	6 miles	0.7.36	1	Over 50 miles an hour.
Oct. 26	Biplane	Sommer	Doncaster	29.7 miles	0.44.53	1	Won Whitworth cup.
Nov. 3	Biplane	Farman	Mourmelon	137.25 miles	4.6.25	1	Said to be 150 miles.
Nov. 20	Biplane	Paulhan	Mourmelon	37 miles	0.55.00	1	Cross country at 1000 feet.
1910.							
Jan. 12	Biplane	Paulhan	Los Angeles	165 feet	0.07.30	1	
Mar. 5	Aeroplane	Farman	Mourmelon	14 miles	1.16.35	3	Two passengers.
Mar. 5	Aeroplane	Farman	Mourmelon	.....	1.02.00	3	Two passengers.

WIRELESS TELEGRAPHY. Ordinary telegraphy is widely understood as a transmission of certain characters, or signals, to a distance, the original medium being a "line" of five insulated metallic wires having at each end five galvanometers. The letters were merely combinations of deflections to right or left, known to-day as the Morse code. Later a single galvanometer was used; a receiver was perfected in which signals were heard, seen, and recorded and this was in universal use until operators learned to read from the sound of the "key." Then came the submarine telegraph or cable; and finally what is known as "wireless," the science of receiving and sending messages between distant points by means of electrical signals without the aid, or use, of connecting wires. For many years the investigations of Henry, Hertz, Lodge, and others, gradually led up to an apparently probable issue; the first successful commercial system was that of Guglielmo Marconi (1897). He used electric waves of high frequency set up by an induction coil in an oscillator, the waves being launched into space by an antenna at a considerable altitude. The receiving apparatus was another antenna in circuit with a coherer, and small battery for operating an ordinary telegraphic receiver through a relay. The antenna is a wire or combination of wires supported high in the air to directly transmit electrical waves into space, or to receive such waves; the anticoherer is (in one form) a scratched deposit of silver on glass used in connection with the receiver to read wireless signals; a coherer is a device in which imperfectly conducting contact between pieces of metal, etc., resting loosely against each other, is materially improved in conductivity by the influence of Hertzian waves; a common form in wireless is a pinch of steel and silver filings (in equal parts) between terminal wires, or plugs, known as conductor plugs. When a message is sent, a Hertzian wave is produced by electrical devices, and consists of a series of vibrations, which are launched into the "all pervading ether" (as distinguished from the air). These vibrations issuing from an infinitesimal point pass into the ether and spread in ever widening waves, just as light is supposed to spread, or as a stone dropped into a pool sends recurrent ripple after ripple from the point of immersion to the utmost margin of the pool. When these vibrations, reaching to a great distance, affect a receiving apparatus, a signal is made and the watching operator from the movements of the receiver can interpret the signals. To date we must be content to know there is some carrying body in all space, to transmit these vibrations, which scientists have termed "ether," and that it is a medium for conveying electricity, heat, and light. It conveys the sun's rays, and it has been possible to calculate the speed of the vibrations we call "light," these reaching 186,400 miles per second.

Just as the human ear notes the receipt of air vibrations, so did the eye note the ether vibrations of the old time beacon fires; these so affected the eyes of the watchers that they received certain sensations which experience taught them was a bright light at a distance, which had a prearranged meaning, and therefore was readily understood. Both the ear and the eye are limited in range of air or ether vibrations. To make a flame visible at any great distance a powerful flame must appear; a candle becomes indistinct and disappears with slowly increasing distance; there must be made a correspondingly great disturbance in the ether or the flame will not be seen, and this disturbance was made by the large, hot flame of the beacon fire. This is the principle of wireless telegraphy. The ether must be disturbed by a powerful series of vibrations if the message is to be carried to any distance. This was obtained by the discovery and the study of the other disturbances in the ether than those we know as light. If an insulated body be given a charge of electricity any light object brought near it is suddenly attracted, indicating a decided electrostatic disturbance in the ether and the modern wireless telegraph system is dependent on this electrostatic condition.

It was discovered by Dr. Hertz while he was endeavoring to prove the electro-magnetic theory of light. Electric waves were known in 1866, their length was claimed to have been calculated, their nature and behavior predicted, but none had discovered any method of detecting these waves which were known to exist in the ether when a sudden electrical discharge occurred. Hertz set up waves in the ether by an electric discharge from an induction coil; he believed the ether was disturbed at each concussion of a spark discharge, and with a short length of wire having a brass knob at each end and the wire bent to a circle, leaving only a small air gap between the knobs, he found that a spark between the knobs followed the spark concussion from the induction coil. Dr. Sylvanus Thompson of London made the same discovery in 1876, but never dreamed he had discovered the evidence of electric waves crossing space.

It was soon seen that these electric waves might thus be used for transmitting signals to a distance without wires; but the scientists did not yet grasp the commercial element. The detector discovery merely gave impetus to the consideration of space telegraphy; then the principles of the coherer showed that the passage of an electric current through the metal filings met great resistance, but that the passage of an electric wave met with greatly reduced resistance, and that the semi-cohesion remained until the filings were again shaken, thus giving time for the effect to be observed in an ordinary telegraphic instrument.

At first there was considerable "interference"; that is to say, a number of receivers would receive a message, instead of only the one for which it was intended. This was eliminated to a great degree, but not absolutely by "tuning." This is the employment of coils and antennae of certain correlative extent so that a certain definite rate of vibrations is set up in the ether, and only the receiver that is "tuned" to that particular set of vibrations will satisfactorily respond. Thus, two receivers differently tuned, side by side, can receive individually messages sent by two distinct transmitters, each message being intended only for the receiver responding to its "tuning." This was an immense advance, eliminating "interference," and most important in war, or with private or state messages.

In order to reach the maximum distance, it was desirable to produce as energetic waves as possible, and many methods have been devised. It was only when one of the conductors in the transmitter was connected to earth that long distance transmission became possible; only a few miles could be spanned by the first Hertzian waves, which would radiate out into all space, while the waves set up by the grounded transmitter, with a receiving instrument similarly connected to earth, would keep within the immediate neighborhood of the earth. For distances up to 200 miles a storage battery and an induction coil will produce the necessary ether disturbance, but for a greater distance a steam or other engine, and a dynamo, must be used to supply the greater energy to the electric waves. One of the transatlantic stations is equipped with a 200 horse power plant. In the recent Marconi transmitter, and in the Lepel and Poulsen systems, the current is no longer in intermittent sparks, but is a true alternating current, continuing uniformly as long as the key is pressed down, giving possibilities of more accurate "tuning," and considerable economy in power. The wireless telephone is now promised, and may mean still another revolution in transmitting and receiving methods.

The possibilities of "wireless" are not limited to sending messages, and the operation of machinery by wireless electricity is the latest avenue of development. Already, in a small way, it has been possible to start, stop, and control distant motors by wireless, but the engine must still be where the actual work is done. In February, 1910, tests were made in France of a torpedo containing a motor battery of accumulators, an apparatus for receiving wireless waves, and an explosive charge of 1,800 pounds, or nine times as much as the ordinary torpedo; above this was a floating sister torpedo which carried two masts, and the antennae for receiving the waves. The masts bore electric lights arranged to be invisible to the enemy. The torpedo was floated, and, on the operation of a keyboard, responded sharply, going ahead, turning in its own length, and proving absolutely under control. These torpedoes are very expensive, ranking up to $11,000 each.

Wireless Telegraphic Events.

1842. Morse sent wireless signals across Susquehanna River.
1897. Dr. Marconi introduced the high wireless or aerial.
1902. Messages between Cape Breton and Cornwall, England.
1904. First ocean wireless newspaper published on liner.
1907. Wireless messages accepted by post office, England.
1909. Passengers and crew of "Republic" saved by wireless.

GEOLOGY.

Origin of the Earth.—It is to the astronomer that the geologist must look for the proofs of the origin of the earth. Among the exploded hypotheses that held their ground for long periods in old times the more important are the Ptolemaic and the Copernican systems.

The Ptolemaic System. Ptolemy of Alexandria (130-150) was the founder of a theory called the Ptolemaic system, based largely upon the materials gathered by such earlier astronomers as Hipparchus and Eratosthenes, who computed the size of the earth by means even now considered the best—the measurement of an arc of the meridian. The advocates of the Ptolemaic theory assumed that every planet revolves in a circle, and that the earth is the fixed center around which the sun and the heavenly bodies move. They conceived that a bar, or something equivalent, is connected at one end with the earth; that at some part of this bar the sun is attached; while between that and the earth, Venus is fastened, not to the bar directly, but to a sort of crank; and farther on, Mercury is joined on in the same way. They did not fully understand the nature of these bars—whether they were real or only imaginary—but they did comprehend their action, as they thought; and so they supposed the bar revolved, carrying the sun and planets along in a large circle about the earth; while all the short cranks kept flying around, thus sweeping each planet through a smaller circle. The movements of the planets were to the ancients extremely complex. Venus, for instance, was sometimes seen as "evening star" in the west; and then again as "morning star" in the east. Sometimes she seemed to be moving in the same direction as the sun, then, going apparently behind the sun, she appeared to pass on again in a course directly opposite. At one time she would recede from the sun more and more slowly and coyly, until she would appear to be entirely stationary; then she would retrace her steps, and seem to meet the sun. All these facts were attempted to be accounted for by an incongruous system of "cycles and epicycles." The system of Ptolemy passed current for 1400 years, and during this time astrology was ranked as one of the most important branches of knowledge. Star diviners were held in the greatest estimation, and the issue of any important undertaking, or the fortune of an individual, was foretold by means of horoscopes representing the position of the stars and planets. The system of the astrologers was very complicated, and contained regular rules to guide the interpretation, so intricate that years of study were required for their mastery. Venus foretold love; Mars, war; the Pleiades, storms at sea. Not only the ignorant were the dupes of this system, but the learned also accepted it,—Lord Bacon believing in it most firmly.

The Copernican System. This system represented the sun to be at rest in the center of the universe, and the earth and planets to move round it as a center. It got its name from Copernicus (1473-1543), who (although some vague general notion of the system seems to be due to Pythagoras) first distinctly drew the attention of philosophers to it, and devoted his life to its demonstration. For the rest, the glory of development on the lines he broadly laid down belongs to Kepler, Galileo, and others, particularly to Newton, who finally marked out the form of modern theoretical astronomy. The discoveries by Copernicus mark one of the greatest steps ever taken in science.

Modern Hypotheses. — Astronomers agree that the earth was in some way evolved from a nebula in some form.

Nebular Hypothesis. The Nebular Hypothesis assumes that the solar system was once an enormous mass of gaseous substance. Rapid rotation arising in this gaseous mass, it took the form of a disc, and at last inertia (popularly but erroneously called centrifugal force), overcoming cohesion, whole rings and fragments flew off from this disc, and by gravitation contracted into spheroid masses. As, in the original mass, the velocity of the outer circle of each body thrown off is greater than the inner circle, this causes each spheroid to revolve on its own axis. This process goes on, and the central mass continues to cool and shrink until we have at last a central body with a number of smaller spheroidal bodies revolving around it in orbits; the smaller, the nearer they are to the central orb. Certain points are assumed in this hypothesis to explain the distribution of matter in our solar system. It is assumed that in throwing off great masses from the central disc, immense quantities of minute particles were also thrown, which continue to revolve, in the same plane with the large mass around the central body. By slow degrees these minute atoms, by the law of gravitation, were aggregated into the mass nearest to them. These subordinate aggregations would form with most difficulty nearest the large central mass, because of the superior attractive force of the latter, wherefore the interior planets—Mercury, Venus, the Earth, and Mars—are smaller than the two great orbs in the zone beyond them. These two enormous planets, Jupiter and Saturn, occupy the space where conditions are most favorable to subordinate aggregations; but beyond them the gravity of aggregating material becomes reduced, and so the planets found in the outer zone, Uranus and Neptune, are smaller than the planets of the middle zone. This hypothesis was first suggested by Sir William Herschel, and was adopted and developed by Laplace. It has been called the Laplacian or gaseous nebular hypothesis.

Meteoric Hypothesis. This is a modification of the Laplacian hypothesis and was worked out by G. H. Darwin. It supposes that the parent nebular matter was a swarm of meteors which acted as a coarse gas and coalesced under the dynamic laws of gases.

Planetesimal Hypothesis. This supposes the aggregation of infinitesimal planetoids by a process of accretion. The parent nebula was of the common spiral type in a finely divided solid or liquid state. The knots of the nebulæ were the nuclei of planets resulting from the accretion of the nebulous haze. The orbits were elliptical and crossed one another in the shifting of the ever-varying mass. At each crossing the process of accretion went on; the growth was exceedingly slow; and as the mass increased in density

and size, the internal temperature rose higher and higher. This hypothesis has been greatly advanced and elaborated through the efforts and contributions of Prof. T. C. Chamberlin and Dr. F. R. Moulton. It differs widely from the gaseous, molten-mass theories of the Laplacian and meteoritic hypotheses, overcomes many of the objections to both of these, and is rapidly assuming the form of a tenable, satisfying explanation of the origin of the earth.

GEOLOGIC DIVISIONS:-

Cenozoic,	Present. Pleistocene. Pliocene. Miocene. Oligocene. Eocene.
Mesozoic,	Upper Cretaceous. Lower Cretaceous (Comanche or Shastan). Jurassic. Triassic.
Paleozoic,	Permian. Coal Measures or Pennsylvanian. Subcarboniferous or Mississippian. Devonian. Silurian. Ordovician. Cambrian.
	Great Interval.
Proterozoic,	Keweenawan. Interval. Animikean or Penokean or Upper Huronian. Interval. Huronian.
	Great Interval.
Archeozoic,	ARCHEAN COMPLEX: Great Granitoid Series including Laurentian. Great Schist Series or Mona, Kitchi, Lower Keewatin, Coutchiching, or Lower Huronian.

Archeozoic Era.—The Archeozoic era is the age when the oldest accessible rock formation was made. The name Archeozoic (oldest life) implies that the oldest accessible rocks were made at a period when life in some form existed in the world. There is some reasonable doubt whether there may not be some rocks now accessible whose formation antedated the existence of life. To meet this doubt the term Archean Complex is used to cover the terms Azoic and Eozoic used in the older geological nomenclature. The Archean rocks include those igneous and meta-igneous rocks which antedate the oldest sedimentary formation. Archean rocks are the result of great volcanic activity; and are classed as a great schist series and a great granitoid series. To the former belong the formation of the Lake Superior region; to the latter, the granites and gneisses known as the Laurentian —a name derived from the St. Lawrence River in Canada, where the formation is abundant and where the largest surface area of Archean rocks in America lies. The peninsula of Labrador, thence to the Great Lakes, thence east of the valley of the Mackenzie to the Arctic Ocean is largely occupied by Archean rocks. In the United States they occur in a broken series of tracts from Maine to Alabama, along the western side from New Mexico to Alaska, and tracts in Michigan, Wisconsin, Minnesota, and in the Adirondack region of New York. No fossils have been found in Archean rocks, though there are strong indications that life in some form was present. The only statement that can be made regarding the duration of the Archeozoic era is that it was very long indeed; perhaps it exceeds that of all subsequent time.

Proterozoic Era.—This term corresponds to the term Algonkian used in other systems. The period includes the time which elapsed from the time of the formation of Archean rocks and those of the Paleozoic era when life was very abundant. The fossil remains and evidences of life in the rocks of this era are very meager; yet it is very significant that the oldest well-defined fossil of the era is a crustacean, which occupies a high place in animal development. Characteristic traits of rocks of this era are weathering of rocks and sedimentation,—both marks of long exposure to atmospheric and water agencies and erosion. Proterozoic rocks are classified according to age into three groups: (1) The Huronian, from the region north of Lake Huron, where the formation was first clearly distinguished; (2) the Animikean or Penokean, named from the occurrence of the formation in localities in Minnesota and Wisconsin respectively; and (3) Keweenawan, from the Keweenaw peninsula in northern Michigan on the shore of Lake Superior. Each of these formations is thousands of feet in thickness, and consists of such sedimentary rocks as conglomerates, shales, limestones, sandstones, and quartzites. In addition to the localities mentioned, there are a few scattered areas in the United States in which Proterozoic rocks are found. They are rather more abundant in Canada. It is among the Archean and Proterozoic rocks in the region of Lake Superior that the enormous deposits of iron ore are found,—more than are to be found in any other region of equal area anywhere in the world. The fact that Proterozoic sedimentary rocks are known to be 30,000 feet thick and that these are separated by periods of unconformity make it extremely probable that duration of the Proterozoic era, while this vast deposit of nearly six miles in thickness was being laid down by the waters which carried it, must be reckoned by millions, if not tens of millions, of years.

Paleozcic Era.—This first era of abundant life is divided into periods as follows: (1) The Cambrian, (2) the Ordovician, (3) the Silurian, (4) the Devonian, (5) the Subcarboniferous or Mississippian, (6) the Coal Measures or Pennsylvanian, and (7) the Permian.

1. *The Cambrian Period.*—The Cambrian period is divided into Lower or Georgian (Vt.); Middle or Acadian; and Upper or Potsdam (N. Y.), Saratogan or St. Croix. Lower and Middle Cambrian rocks occur on this continent in two general regions, one in the east and one in the west. The first extends from Labrador, Newfoundland, New Brunswick, Nova Scotia, through New England, the Hudson-Champlain valley, across the Appalachian mountains to Alabama (but not near the Atlantic coast). The western area extends northward from the Great Basin region to the Arctic. The presence of marine fossils within the areas mentioned shows that they were covered by the sea in Cambrian times. The Upper Cambrian, Potsdam, Saratogan, or St. Croix epoch saw the Appalachian and the Cordillera regions still under water and also

a large part of the interior of the continent now submerged. The Upper Cambrian formations are believed to lie over nearly the whole of that part of the United States between the Appalachian and the Rocky Mountains. The fossils found in Cambrian rocks are chiefly species of trilobites among which the genera *Olenellus, Paradoxides, Olenoides,* and *Diplocephalus* are notable examples. Cambrian rocks are shale, as near Quebec (5,000 to 6,000 feet thick); shale on limestone, as between the Adirondacks and the Green Mountains; from 10,000 to 12,000 feet of slate (shale) and sandstone on limestone, as in Washington County, N. Y.; shale or slate and sandstone or quartzite, as in Tennessee and North Carolina; and shale, sandstone, and limestone 10,000 feet thick, as in Georgia and Alabama. Estimates of the duration of the Cambrian period range from 1,000,000 to 3,000,000 years.

The Ordovician or Lower Silurian Period. This period is subdivided into Lower Ordovician or Canadian, Middle Ordovician or Mohawkian, and Upper Ordovician or Cincinnatian. There is such difference in both the thickness of Ordovician sedimentary rocks and in the nature of the rocks themselves that it is difficult to give in general terms any fitting description of the geological movements and transformations which will apply to the continent as a whole. Sections descriptive of the country vary so that many terms of only local application must be used. Limestones, dolomites, shales, and slates predominate; the marbles of the Taconic Mountains; the oil and gas wells of Ohio and eastern Indiana have their sources in this formation; the lead and zinc ores of Wisconsin, Iowa, Illinois, and Missouri are found in its rocks; and the phosphatic Ordovician limestones of Tennessee yield fertilizing phosphates. Life during the period continued in an unbroken series from the Cambrian. With the geographical changes in the contour of the continent there came an addition to the life, most noticeably in the appearance of vertebrates in the form of fish-like fossils found near Cañon City and elsewhere in Colorado. It was during the Ordovician period that the trilobites, so abundant in the Cambrian period, reached the highest point in number of genera—77 genera of Ordovician trilobites being known as against 53 Cambrian and only 31 Silurian. Fossil remains include also the cephalopods, the largest form of Ordovician life; gasteropods; pelecypods or lamellibranchs; brachiopods, the most common fossil of the period; bryozoans; echinoderms; cœlenterates or corals; sponges; annelids, and protozoans.

Silurian or Upper Silurian Period. Among the great continental changes it is supposed that during the last stages of the Ordovician period and the earlier part of the Silurian period large areas of the continent of North America slowly emerged from the great sea which had for so long covered so much of it. Mountains slowly and very gradually emerged, and there was more land surface than there had been at any previous period since the early Cambrian days. The oldest rocks of the Silurian system are the Oneida. These rocks are chiefly sandstone and conglomerate, containing many quartz pebbles. The Oneida also forms the crest of the Kittatinny range in New York, Pennsylvania, and New Jersey. The Medina formation of sandstone and shale lies above the Oneida. The third oldest Silurian formation is the Clinton, which extends farther west to Lake Huron and Indiana, and south into Alabama and Georgia. Clinton rocks are mainly sandstone and shale containing iron ore; in New York, Alabama, and Wisconsin. The earlier periods containing large deposits of iron ore are the Archeozoic, Huronian, and Animikean. The Niagara formation covers a great deal of New York, Ontario, Ohio, the southern peninsula of Michigan, parts of Indiana, Illinois, Wisconsin, and Iowa. The Niagaran rocks are shale, limestone, and some well-defined coral reefs. The Salina group contains deposits of limestone, shale, and rock salt, and, sometimes, gypsum. Beds of rock salt occur in New York, sometimes from 40 to 80 feet thick; four salt beds mixed with shale are known near Cleveland. In the Silurian period echinoderms, including blastoids, crinoids, cystoids, starfishes; brachiopods; cephalopods; bryozoans; corals; few trilobites (only 31 genera, of which 11 were new); sponges; and a few fishes, the only representatives of the vertebrates. The largest animals were the crustaceans, the great *Eurypterus* (one and one half feet long) and the *Pterygotus* (which in the next period, the Devonian, attained a length of six feet). The earliest known scorpions occur in Silurian rocks.

Devonian Period. Lower Devonian includes the Helderbergian and Oriskanian series. Helderbergian rocks are found in Maine, Gaspé, New Brunswick, and Nova Scotia; in the Appalachian belt; and in the lower Mississippi basin. The rocks are largely limestone, and run from 300 to 600 feet thick in New York and Pennsylvania, and in Gaspé there is a bed of limestone 2,000 feet thick, partly Helderbergian. The Oriskany formation is found in the Appalachian district, in the Mississippi basin, and in the St. Lawrence basin. Cumberland, Maryland, is the center of the Oriskany belt. Middle Devonian includes the Onondaga limestones in New York and east of the Mississippi, and the Hamiltonian or Erian series in the same areas and southward consisting largely of shales and limestones. The Upper Devonian consists of the Tully, Genesee, Portage, or Senecan formations of limestones, Genesee shales, and limestones; the Chemung and Catskill formations of the Chautauqua series, conglomerates, red shales, and sandstones. The Devonian rocks yield oil and gas in western Pennsylvania, southwestern New York, West Virginia, and Ontario (Canada); black phosphates of Tennessee. In the Devonian period there was a marked increase in the mollusks, both in number and development; in the Onondaga period true marine fish are found in great beds and masses near Columbus, Ohio, and at North Vernon, Indiana; corals were profuse; cephalopods developed notably. Sharks 20 feet in length occur in Hamilton or Erian rocks. Brachiopods reached the period of highest development in the Devonian period,—about 103 genera being known. Plant life is represented by marine plants (algæ); land plants included ferns, tree-ferns, equisetales (horsetails), and calamites, and other gymnosperms. Wings and other fragments of insects, undoubtedly Devonian, have been found at St. John, New Brunswick (Canada), which resemble neuropters, one

having a wing spread of perhaps five inches. From the same locality are reported terrestrial mollusks, myriapods, arachnoids, and a scorpion.

The Subcarboniferous, Lower Carboniferous, or Mississippian Period. In earlier classifications, the entire period from the close of the Devonian to the end of the Paleozoic era was called the Carboniferous period; but it has been thought well to subdivide it more closely. A great continental submergence followed the Devonian period. Beds of Mississippian rocks are thickest in the Appalachian Mountains; in Pennsylvania there is 1,400 feet of Pocono sandstone with 3,000 feet of Mauch Chunk shale upon it; in Maryland the deposit is 1,300 feet thick; in West Virginia, over 2,000 feet thick; in Oklahoma, 1,800 feet; in the Black Hills, about 400 feet; in Colorado, about 500 feet; near the Grand Cañon of the Colorado in Arizona, 1,800 feet. The crinoids reached their highest development in the Mississippian period, 63 genera being known; spirifers, pelecypods, brachiopods, and gasteropods (some air-breathers) were known; cephalopods and trilobites were rare; 400 species of fish are known from America, chiefly sharks. The plants of the Devonian period persisted. The footprints of a supposed land animal or amphibian, the *Paleosauropus primaevus,* found in the Mauch Chunk shale near Pottstown, Pa., show six double imprints with the track of the hind foot partly overlapping that of the fore foot. The stride is 13 inches and the width of the track between outer toes is eight inches. Marks of a trailing tail are also seen. No fossil remains of insects have been found.

Carboniferous, Coal Measures, or Pennsylvanian Period. This system is divided into the Pottsville conglomerate or millstone grit and the coal measures, which consists of beds of shale, sandstone, conglomerate, limestone, coal, and iron ore in a succession of alternating series. The productive areas of coal deposits in North America are (1) the anthracite field of eastern Pennsylvania, 484 square miles; (2) the Appalachian field running from northern Pennsylvania to Alabama, 850 miles long and covering 70,800 square miles; (3) the Northern Interior field in the southern peninsula of Michigan, covering 11,000 square miles; (4) the Eastern Interior field in Indiana, Illinois, and Kentucky, covering 58,000 square miles; (5) the Western Interior and Southwestern fields, from northern Iowa to central Texas, 800 miles in length and covering 94,000 square miles, taking in parts of Iowa, Nebraska, Missouri, Kansas, Arkansas, Oklahoma and Texas; and (6) the New Brunswick-Nova Scotian field on both sides of the Bay of Fundy, covering 18,000 square miles. The Coal Measures present most interesting studies in plant and amphibian life. These are the first marked examples of land life, the forerunners of the land vertebrates. There are more specimens of terrestrial plant and animal life to be found in the Coal Measures than in preceding or succeeding periods, not, perhaps, because more plants and animals lived but by reason of the remarkable preservation of so many fossil remains in the coal beds. The pteridophytes were highest in the scale; gymnosperms ranked second; angiosperms had not yet appeared; and there are some traces of bacteria. Among the pteridophytes were the true ferns, fern-like gymnosperms, calamarians, and other horsetails, giant lycopods, all in great profusion. Land animals included amphibians, insects, spiders, scorpions, and myriapods. Fresh water and salt water life was abundant, and embraced all of the representatives of preceding periods; the crinoids and the trilobites were fast disappearing.

The Permian Period. This is the last of the Paleozoic Era, and is by many regarded only as a continuation of the Carboniferous. During this time large parts of the central and eastern portions of the United States emerged from the epicontinental sea, which now contracted into lakes and inland seas connecting with the ocean in part. It was during this period that the so-called "Upper Barren Coal Measures" of Pennsylvania, West Virginia, Ohio, and Maryland were laid down by the process of sedimentation. The Permian strata are perhaps best seen in Texas, Kansas, and Nebraska, which at this time were under comparatively shallow water. In the first of these localities depths of from 4,000 to 7,000 feet of sedimentary Permian rocks are not uncommon. By the time of the close of the Paleozoic Era, the Appalachian Mountain system had developed; the Ouachita Mountains were defined; and the submerged part of the continent had greatly decreased in area. From these changes in the geographical aspect of the country, it is only consistent to infer corresponding changes in climate, water circulation, and in the distribution of plants and animals. The amphibians were a prominent feature of the Permian period, as they were in the Carboniferous; the primitive reptiles made their appearance, or greatly increased, in the closing ages of the Paleozoic era. The Permian fish, both fresh water and marine, were both abundant and highly developed.

Mesozoic Era. This era is divided into (1) the Triassic period, (2) the Jurassic period, (3) the Comanchean or Lower Cretaceous period, and (4) the Upper Cretaceous period.

The Triassic Period. Triassic strata are known in the Atlantic slope east of the Appalachians, in the western interior, and on the Pacific coast. On the Atlantic slope the Triassic patches extend from Nova Scotia to South Carolina, and are grouped under the name of Newark, from Newark, N. J. Here the Triassic rocks are conglomerates, breccias, sandstones, shales, and some limestones. The Triassic beds vary from 3,000 to 15,000 feet in thickness. In the western interior, Triassic deposits are found in Texas, the Black Hills of South Dakota, and interruptedly from New Mexico to British Columbia along the eastern slope of the Rockies, for the most part unsatisfactorily distinguished from the Permian rocks. The beds run from 100 to 2,500 feet in thickness. On the Pacific slope the Triassic system has its greatest development in America. In the West Humboldt range of Nevada the beds are 17,000 feet thick. In the summits of the Sierras in northern California and up the coast to Queen Charlotte Islands the deposits are notable. This great development of Triassic rocks in the West is due to the fact that the Pacific Ocean borders were far inland over what is now the Pacific coast. The most remarkable feature of plant life in the Triassic

period was the predominance of the gymnosperms, which took the place which the pteridophytes held in the Carbonaceous period. Conifers and cycads were foremost. Among land animals many of the Permian period persisted, but the higher forms of reptiles appeared in the Triassic. The dinosaurs, the chelonians or turtles, the plesiosaurus, the crocodiles, and ichthyosaurs were prominent on land. In sea life the ammonites held first place, followed by the pelecypods and gasteropods among the invertebrates.

Jurassic Period. It is extremely doubtful whether any Jurassic rocks are to be found on the eastern coastal plain. Marine Jurassic beds of limestone were recently discovered in Texas; and some are known in eastern Mexico. But it is along the line of the Rocky Mountains and on the Pacific coast that the large Jurassic deposits are found. The system, however, does not exceed 2,000 feet in depth in California; but in western Nevada it is sometimes from 5,000 to 6,000 feet in depth, made up of slates or limestone. Marine life predominated; the ammonites still lead among invertebrates; sea urchins were rapidly and markedly developed; crabs and modern types of crustaceans appeared; sponges and foraminifera were abundant; and the great sea reptiles, such as the ichthyosaurs, plesiosaurs, and sea crocodiles, reached their highest development in this period, and present a most remarkable and wonderful fauna. Among plants the cycadeae were so distinctive that the Jurassic has been named the "age of cycads"—yews, cypresses, arbor vitæs, pines, and gingkos. On land the dinosaurs and other carnivorous reptiles attained remarkable size; the herbivorous dinosaurs developed greatly, and soon eclipsed in size the carnivorous species. One herbivorous dinosaur found in Wyoming measured 75 feet in length; while a carnivorous dinosaur from Colorado measured only 17 feet in length. The stegosaurus of Colorado and Wyoming is a remarkable specimen of an armed dinosaur. The pterosaurs were the first development of aërial reptile life which we know about, and included the rhamphorhyncus and pterodactyl. The earliest known bird was the *Archeopteryx macrura.* The insects included cockroaches, crickets, flies, and ants, but no butterflies or moths, as there were as yet no angiospermous plants.

Lower Cretaceous or Comanchean Period. At the beginning of this period the greater part of North America was above sea level. Texas and Mexico were under water as far north as the Ouachita Mountains; the sea then flowed over the great central plain from the Mackenzie River on the north to the Rio Grande on the south; later, this great mediterranean sea disappeared. The Lower Cretaceous along the Atlantic coast is called the Potomac series; along the eastern part of the Gulf coast it is called the Tuscaloosa series. The system passes over Texas into New Mexico, and probably Arizona, into Kansas. In the northern interior, Lower Cretaceous occurs in parts of Wyoming, South Dakota, and Colorado; farther north it is seen in Montana, Alberta, Assiniboia, and the Queen Charlotte Islands. On the Pacific coast it is seen in California, Oregon, Washington, and British Columbia. Each of these parts have local names and subdivisions which serve to complicate a by no means simple period. A most important phase of the Lower Cretaceous period is the introduction of angiosperms, both monocotyledons and dicotyledons, which appear first in the Potomac series, and had so fully developed that in the succeeding period they had overrun the continent. These early angiosperms were plants familiar to us, including the sassafras, laurus, eucalyptus, and myrica. The cycads, conifers, and ferns which dominated preceding periods, now sank to a subordinate place.

Upper Cretaceous Period. Further exposures of the continent occurred in the Upper Cretaceous period. New Jersey, Delaware, Maryland, and Virginia are among the parts which then emerged. Beds of clay, sands, greensand marl, with but little limestone, are characteristic of this area. Along the Gulf coast these beds extend from Georgia, through Alabama and Mississippi to western Tennessee and Kentucky. In the interior they are found in Texas, Kansas, and to the north. On the Pacific coast the rocks of this period are found, somewhat scattered, in California, Oregon, Washington, and British Columbia. The plants of the Upper Cretaceous period had a distinctly modern or present-day appearance, many of our varieties of angiosperms being abundant; monocotyledons, including palms and grasses, were becoming abundant, and the new flora was widely distributed. Among animals the dinosaurs were still predominating, and presented most peculiar forms. The flying reptiles had developed, and some presented a wing-spread of 20 feet and had great powers of flight. Sea animals included a few, but gradually disappearing, ichthyosaurs and plesiosaurs, and many and important types of sea serpents, sea turtles, and sea birds. Rhizopods or foraminifers were more prominent than in any preceding period, and sea urchins were conspicuous.

Cenozoic Era. This embraces all of the remaining periods of the geological history of the earth, and is the era of modern life.

The Eocene Period. Land formations of the Eocene period are (1) marine deposits found on the borders of the continent, especially around the Gulf area, on the southeastern Atlantic coast, in the West Indies, and on the Pacific coast; (2) brackish water deposits in Washington and Oregon; and (3) fresh water deposits from lakes, river, ponds, etc., in scattered regions among the mountains of the West and upon the adjacent plains. Eocene life shows very marked differences from that of the Cretaceous period. Marine life was almost wholly changed; the great saurians disappeared; the reptile forms were markedly transformed; and placental mammals took a commanding position, probably on account of the development of the angiosperms which afforded food for the grass-eating herbivores, that in turn supplied food for the carnivores. While these animals were very different from those with which we are familiar, there may be traced back to them the descent of modern types. They were the ancestors of our types, and the great number of genera which were represented and the suddenness of their development are points of interest in the period.

The Oligocene Period. The Oligocene has not been used in the older systems of geological classifications of North America, but has been prominent in Old World geology. To secure

uniformity and to aid paleontological classification, it is now being recognized as a distinctive period between the Eocene and the Miocene. The rocks which are considered as belonging to the Oligocene period are certain marl beds on the Atlantic coast in North and South Carolina and some in Florida; the Gulf formations of Alabama, Mississippi, Louisiana, and part of Texas; and extensive areas in Colorado, Wyoming, Nebraska, and South Dakota. It is interesting to note that amber, a fossilized resin found on the Baltic shores, occurs in the Lower Oligocene of Europe. Amber is of great paleontological importance as a natural means of preserving insects. They, it is supposed, alighted upon the resin when it was soft and became imbedded in it, so that about 2,000 species of Oligocene insects have been thus preserved, entombed in the amber. The trees of the Oligocene period were both evergreen and deciduous,—yews, pines, sequoias, but very few palms. Among the land animals were such as the *Titanotherium validum* (a skeleton of which is in the Carnegie Museum in Pittsburg), which were midway between the rhinoceros and the elephant, the *elotheres* or giant hogs, and the three-toed horses.

The Miocene Period. Miocene formations are marked by slight coastal additions to the southeastern Atlantic coast, to the Gulf coast, along the Pacific coast, and in the interior in Nevada, Montana, Arizona, Texas, and New Mexico. The Miocene rocks are of nearly all of the sorts common to sedimentary deposits of marine and fresh water. The flora of the Miocene period was little different from that of the Oligocene, excepting in an increase in deciduous trees and grasses. The disappearance of some of the tropical and subtropical plants argues a change in climatic conditions. The horse, the tapir, the lowland rhinoceros, peccaries, camels, squirrels, beavers, gophers, and rabbits persisted from the Oligocene period. To these were added the mastodon or elephant forms, especially the Tetrabelodon, Dibelodon, and the ruminants of the deer and ox family. Little is known of Miocene birds. Turtles, lizards, and crocodiles had taken on their modern forms.

The Pliocene Period. Pliocene formations, so far as known, cover an area similar to those in which Miocene deposits are found. There was an upbuilding of the peninsula of Florida, and the shores around the Gulf, and for a short distance up the Atlantic coast, and along the Pacific coast. These deposits were, of course, marine. The lacustrine and other fresh water deposits are known in the interior east of the Rocky Mountains, on the border of the Great Plain; the auriferous gravels of California began in the Miocene and continued through the Pliocene. Patches of gravel are found in Minnesota, Wisconsin, Iowa, Illinois, Arkansas, Indiana, Kentucky, and Tennessee, which are referable to the Pliocene period. The Lafayette formation, named from Lafayette County, Miss., is composed of gravel, sand, silt, and clay welded together.

The Pleistocene or *Glacial Period.* The great feature of the Pleistocene period was the covering of from six million to eight million square miles of the earth's surface with ice sheets. Just previous to this covering with ice, the districts so covered had enjoyed a mild climate. This fact is so striking that it tends to obscure other important events in the period. Nearly one half of North America was buried under ice. The three centers were (1) Labrador, (2) Keewatin, just west of Hudson Bay in Canada, and (3) the Cordilleran ice sheet in the Rocky Mountains in Canada. The southern well-defined limit in North America ran in an irregular line from New Jersey, west through Pennsylvania, Ohio, Illinois, Missouri, Kansas, and Nebraska, and northwest through Montana, Idaho, and Washington. In the east its southern boundary nearly followed the course of the Ohio River, and the most southerly point of the lowland glaciation reached was about 37° 30′, near what is now the mouth of the Ohio. Mountain peaks and eminences south of this line were affected, but in widely scattered localities. About one half of the glaciation of the entire world was in North America, and about one half of the remainder was in Europe. A strange feature is the fact that Alaska was only slightly affected. The area over which the ice spread is now covered by clay, sand, and bowlders, and this mantle is called the drift. The great bowlders have been in many cases forced into unusual and strange positions by the ice flow. The bowlders and the bed rock are marked with grooves and striæ caused by the pressure of the superincumbent mass. The drift ranges in depth up to 500 feet. The drift is classified into ground moraines, terminal moraines, and lateral moraines. These moraines are great heaps of bowlders, gravel, clay, and sand. The terminal moraines mark the advance and retreat of ice sheets. Migrations of both plants and animals mark the extraordinary changes of temperature which accompanied the Glacial period. There is evidence of five or six backward and forward movements, some of which, it is believed, covered fully 2,000 miles in North America, and exceeded 1,000 miles in Europe. This alternate advance and retreat of the ice sheet resulted in a marked intermingling of floras and faunas. In Great Britain remains of the musk ox, now exclusively arctic, have been reported as found along with those of the hippopotamus, now strictly tropical; and in France the relics of the reindeer are similarly associated with those of the lion. The climate of some interglacial epochs was evidently warmer than at present. In the Toronto beds, remains of the papaw and osage orange and other trees occur, now reaching their average northern limits about 300 miles farther south. South of the ice sheets in North America the mammoth, mastodon, bison, reindeer, and musk ox were abundant and characteristic animals, while the saber-toothed cat, tapir, llama, and horse were nearly extinct. The mammoth was abundant in Mexico and the southern states, and ranged northward. The mastodon occupied a large area in the northern states, extending into Canada, and the south. The musk ox and reindeer occurred as far south as Virginia.

While most European geologists have concluded that man was present in central and southern Europe during the later part of the glacial period, convincing evidence of glacial man in North America has not been discovered. The final retreat of the ice sheets from middle latitudes terminated the Pleistocene and marked the beginning of the Present or Human period.

BIOLOGY.

Biology is the science of life; the study and knowledge of living beings and organized matter as distinguished from inanimate things or inorganic matter. In a broad sense it may be understood to include every form and function of living beings, and under this conception all human knowledge, together with every achievement of human progress, are facts of biological science. However, as generally understood, biology treats of the origin, structure, development, function, reproduction, and distribution of plants and animals.

Evolution.—The theory of evolution, comprehensively considered, attempts to account for the origin of created things, particularly the earth, with its past and present plant and animal life, including the origin and development of the human race. It is concerned with problems of development, ranging from that of the formation of a star from nebular or planetesimal matter to the production of the sugar beet by husbandry, and from those involving the simplest volitional acts in animals to the transcendent powers of the human mind. This theory, which possesses the greatest philosophical and scientific significance, has its foundation in certain unities, universally existent and demonstrable. Among these are the universality of natural laws, unity of structure in plants and animals, and in their mode of reproduction,—all arising from germs or eggs; the universal presence of protoplasm as the material basis of life, and the contractility of protoplasm as the source of all movements of plants and animals. From the philosophical point of view, all this implies an infinite power or creator working in and through the material and immaterial universe by unchanging natural laws.

Inorganic Evolution considers the development of the material universe, particularly that of the solar system and the earth, the latter involving the origin of the minerals composing its mass, and the formation of the air and water. Chemical evolution takes into account the gradual upbuilding of matter from its ultimate, preëlemental particles to the elemental condition, thence through molecular compounds of increasing complexity to the most complex of all—protoplasm, the material basis of life, which marks the limit of physico-chemical development.

Organic Evolution is a theory of descent, of development from simple, general types to complex, specialized forms, and undertakes to account for the origin of species by the operation of natural laws.

Aristotle (384-322 B. C.), the greatest philosophical naturalist of the ancients, is considered the father of the theory of descent. He conceived a series of organisms intergrading from jellyfishes to man, and asserted his belief in heredity. St. Augustine, in the fourth century, explained the origin of things by a series of causal factors. Nine hundred years later Thomas Aquinas supported this teaching. However, beginning in the sixteenth century and continuing until after the middle of the nineteenth, the doctrine of special creation was universally maintained. A few, however, questioned it. Among them was the German philosopher, Leibnitz (1646-1716), who declared his belief in the continuity of nature, and in a universal connection between species, which he maintained could be changed by a change in environment. The French naturalist, Buffon (1708-1788), asserted that all animals may have originated from a single ancestral type, affirming, and as often denying under hostile criticism, his belief in the mutability of species. Erasmus Darwin (1731-1802), grandfather of Charles Darwin, maintained that all animals have developed from a single primordial "filament," and more or less clearly defined sexual selection, protective mimicry, the law of struggle, the effects of climate and of use and disuse as causes of variation.

The great French naturalist, Lamarck (1744-1829), who was the true founder of modern evolution, published his views extensively during the first decade of the nineteenth century. He taught that all organisms develop from germs, that development is always from the simple to the complex; that vestigial structures, such as the internal limb bones of whales or the vermiform appendix in man, are remains of once actively used structures, and that characters acquired during the life of the individual, particularly the effects of use and disuse, may be inherited. These views were vigorously opposed by Cuvier, and were generally discredited until Charles Darwin and Alfred Russell Wallace, acting independently of each other, formulated the great theory of descent which has revolutionized all scientific teaching.

In 1859, after more than 20 years of the most painstaking research, following a notable five years' journey around the world as a naturalist, Darwin published his epoch-making "Origin of Species," containing overwhelming arguments for the doctrine of descent. These views, ably supported by Huxley, Herbert Spencer, Haeckel, Asa Gray, and others, became widely accepted by philosophers and scientists. The chief tenet of the new theory was natural selection. Darwin maintained that among plants and animals there exists an all-prevailing tendency to fortuitous variation; that when variations are favorable to the organism they are preserved; that natural selection, otherwise stated by Herbert Spencer as "the survival of the fittest," is a determining factor in preserving variations. Darwin did not claim that this process of elimination, resulting in the permanency of the best adapted, is the only factor in organic evolution, but emphasized that it is a most important one. Stimulated by the masterly example of Darwin, who was an investigator of the highest order, subsequent research in comparative anatomy, embryology, and paleontology has contributed a vast mass of confirmatory evidence, and established practically universal belief in the theory of descent. Present day scientists, however, are not agreed as to the relative significance of the now recognized factors of evolution, including that of natural selection itself, which is being subjected to rigorous review, and undoubtedly there are unknown, and, possibly, there are undiscoverable, factors in evolution.

Mental Evolution, which lies at the basis of social and religious evolution, is exemplified in the fact that, while man is the only fully self-conscious reflective, thinking animal, it is impossible to establish a line of demarcation between the mental acts of animals and of man. The beginnings of reason are manifest in animals,

and, notwithstanding the immense difference between the mental attributes of man and the rudimentary faculties of animals, there is evidence that his exalted intellectual qualities had their origin in the animals which preceded him in development. The difference in the size and shape of the skull between the living and most ancient fossil races of mankind, the evidence found in the vestigial structures inherited from other animals, the culture-record of man,—his gradual mastery of the elements, of fire, tools, soil cultivation, subjugation and domestication of animals, of the useful arts, sciences, and fine arts; his recognition of ethical principles, of the divine in the universe and in human nature, all indicate a development from the simple to the complex in full harmony with the principles of evolution.

The establishment of the theory of evolution is the greatest intellectual achievement of this age. Not only have important discoveries in biological science arising from stimulated research, such as the germ origin of disease and antitoxin treatment, been of great benefit to mankind, but in the realm of modern economics, sociology, psychology, and ethics the principles of evolution have been profoundly influential. The evolution theory, with its immediate corollaries, has immensely enlarged our conception of Deity, of the universe, of the world, its history and life, and of man's past, present, and future place in it.

BOTANY.

Botany is the science of plant life. Plants may be considered from different points of view, each resulting in a distinct division of the science of botany.

Structural Botany or **Morphology** is the study of the form and structure of plants, more particularly of the shape and relation of their parts or members. It passes into plant anatomy or histology, which deals with the finer, for the most part microscopic, characteristics of vegetable tissues.

Physiological Botany or **Plant Physiology** is the study of the plant in action, its life processes and functions.

Cytology is the study of the cells, the fundamental elements from which all plant structures are developed.

Systematic Botany or **Taxonomy** is the study of the classification of plants, and of their grouping into floras.

Ecology or **Plant Sociology** is the study of the relations of plants to other plants, and to animals, and of their adjustment to their physical surroundings.

Economic Botany is the study of plants in relation to their usefulness to man.

Palaeobotany or **Geological Botany** is the study of fossil plants, of extinct plant life,—a subject which derives its chief interest from the important light it throws upon the ancestry, development, and affinities of existing vegetation.

Genetics. Under this name, of rather recent introduction, are grouped the various phenomena of plant and animal heredity.

Morphology. The organic unit of plant life as of animal life is the cell, the essential element of which is protoplasm or life substance. All plant structures or organs, no matter how large or complex, arise from combinations of these cells.

In the simplest plants the plant activities, such as nutrition, reproduction, respiration, and movement, are all carried on in a single cell, but as we ascend in the scale of development, increasingly complex structures for the carrying on these activities appear. In the liverworts there are expansions of simple cellular tissue into leaf-like organs but lacking the distinctive structure of true leaves. In mosses imperfect structures considerably resembling, not only leaves, but stems and roots, appear, and finally, in the fern plants, true plant vessels and woody tissue are developed, and hence highly organized true roots, stems, and leaves occur. Along with this increasing complexity of structures connected with the nutritive functions, there occurs also an equal advance in structures concerned with the other functions, until, in the seed plants, we find almost infinite variation in form, structure, and adaptation of various plant organs, innumerable forms of leaves which have to do with nutrition and respiration, and of floral parts which have to do with reproduction. The study of these structures has been called Structural Botany or Organography, now largely superseded by the term Morphology.

Physiology. The activities or work of the living plant may be presented under: (1) Stability of Form, (2) Nutrition, (3) Respiration, (4) Movement, (5) Reproduction.

STABILITY. In the most delicate plants with thin cell walls, rigidity of form is maintained by internal pressure upon their walls, the protoplasm of active cells manifesting this power to draw liquids within the cell wall and retain them under pressure. This turgid condition of active cells gives rise to tensions in adjoining tissues which also contributes to rigidity and permanence of form.

NUTRITION.

Food. Primarily all plant food is inorganic, and must always contain carbon, oxygen, hydrogen, and nitrogen, together with smaller quantities of sulphur, phosphorus, potassium, magnesium, calcium, and iron, all of which must be introduced into the plant in liquid or gaseous form—hydrogen and oxygen from water, carbon from carbon dioxid in the air, and the other elements in various salts dissolved by water in the soil before entering the plant.

Absorption. In all land plants possessing green parts, carbon dioxid is absorbed immediately from the air through the surfaces of the leaves. The mineral salts dissolved in water in the soil are absorbed by the roots.

Transpiration. More water with its content of dissolved salts is absorbed through the roots than is needed for food. The salts are retained but the surplus water is evaporated through the stomates or breathing pores of the leaves, the amount thus transpired by a large leaf area being very great, some trees being planted to drain marshy ground by transpiration through their leaves.

Photosynthesis. Every green plant possesses the power to manufacture, from the inorganic elements in the air and water, its own food. The process whereby the carbon of the carbon dioxid from the air and the oxygen and hydrogen of water are recombined as starch, sugar,

COFFEE
(COFFEA ARABICA)

TEA
(THEA SINENSIS)

or cellulose, through the agency of the chloroplasts in the green cells and sunlight, is called photosynthesis. It is primal and fundamental, as organic life, both plant and animal, derives all its food ultimately from green plants, and depends for existence upon this process.

RESPIRATION. Plants need to breathe and do breathe by a process essentially similar to that of animals, oxygen entering the plant through the stomates or breathing pores of the leaves and being absorbed by the living cells, while carbon dioxid is given out by the same cells and finally escapes by diffusion.

MOVEMENT. Many low plants, such as bacteria and diatoms, possess the power of locomotion; the naked protoplasm of slime molds slowly creeps over surfaces; the zoöspores and ciliated sperms of lower plants swim freely. In complex plants locomotion mostly disappears, but certain portions of the plants move, usually slowly, but sometimes with great rapidity. Hygroscopic movements occur in dry tissues. Growth movements, due to internal causes, such as those of tendrils, and to external causes, such as turning or growing of leaves or stems toward the light (heliotropism), or of roots downward, due to gravity (geotropism), are characteristic of higher plants. The leaves of certain plants manifest marked irritability when mechanically disturbed, such as the sensitive plants, as do also the modified leaves of carnivorous plants which entrap insects.

REPRODUCTION. There are two distinct methods: Reproduction by division, which is always asexual, called Vegetative Reproduction, and Reproduction by Spores, which may be either sexually or asexually produced.

Vegetative Reproduction. In the lowest plants the method is cell division, a single-celled plant splitting into two similar single-celled plants, as in Protococcus and other lower algae, and bacteria. In more complex plants vegetative reproduction or propagation is effected by various outgrowths of the body, such as the gemmae of liverworts, and the buds, bulbs, tubers, and modified branches of higher plants.

Reproduction by Spores. Cells specially organized for spore production occur in all but the lowest groups. The first spores produced appear to have arisen from the internal division of a mother cell, and are asexual spores. But even in the higher thallophytes we find spores formed by the union of two specialized cells called gametes, which are sexual spores. Among the lowest plants the pairing gametes are alike, that is, apparently unisexual, but among somewhat higher forms they become distinctly bisexual, as sperms, or male cells, and as eggs, or female cells, and this soon gives rise to an alternation of generations between sexual and asexual spore-producing forms which prevails throughout the whole plant kingdom from the more complex thallophytes to the highest plants.

Classification or **Taxonomy.** Beginning with the simplest and lowest forms and progressing upward through more and more highly organized intermediate groups to the plants of the greatest development and complexity of structures, four great natural divisions are recognized, as follows:—

I. **Thallophytes,** Thallus plants.
II. **Bryophytes,** Moss plants.
III. **Pteridophytes,** Fern plants.
IV. **Spermatophytes,** Seed plants.

All known plants are readily referable to these divisions, but it does not follow that these are equivalent natural groups. Some maintain that there should be more groups of primary rank, and others hold there should be fewer, but the

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PLANT KINGDOM.

Table of the Principal Groups of Plants.

Thallophytes or Thallus plants	Algae and Algoid forms	Cyanophyceae	blue-green algae.
		Chlorophyceae	green algae.
		Phaeophyceae	brown algae.
		Rhodophyceae	red algae.
	Fungi and Fungoid forms	Schizomycetes	fission fungi, bacteria.
		Myxomycetes	slime molds.
		Phycomycetes	algae fungi, water molds.
		Ascomycetes	sac fungi, lichen fungi.
		Basidiomycetes	basidium fungi, rusts, mushrooms.
Bryophytes or Moss plants	Hepaticae	liverworts.	
	Musci	mosses.	
Pteridophytes or Fern plants	Lycopodiales	Sigillaria and Stigmaria, Lepidodendra	(fossil).
		Lycopodiaceae	club mosses.
	Equisetales	Calamites	(fossil).
		Equisetaceae	horsetails.
	Filicales	Cycadofilices	cycad ferns
		Filices	true ferns.
Spermatophytes or Seed plants	Gymnospermae or Naked-seeded	Cycadales	cycads.
		Gnetales	gnetums.
		Ginkgoales	ginkgo.
		Coniferales	evergreens.
	Angiospermae or Covered-seeded Flowering plants	Monocotyledoneae	(one-leafed seed), cereals, palms, lilies.
		Dicotyledoneae	(two-leaved seed), oak, apple, pea, sunflower.

arrangement as stated is more widely accepted and used than any other classification.

Fundamental distinctions between these primary groups may be stated as follows:—

Thallophytes have thallus bodies, but lack the peculiar reproductive structures of the next higher group called archegonia; Bryophytes possess archegonia but lack fibro-vascular bundles, i. e., true plant ducts and woody tissue, which characterize all plants higher in the scale than Bryophytes; Pterodophytes have fibro-vascular bundles but do not produce seeds; Spermatophytes have seeds.

Thus it will be seen that in each ascending group characteristic structures have been developed not possessed by any of the groups which stand below them.

Thallophytes (*θαλλός*, young shoot, *φυτόν*, plant) are the simplest of plants and represent the initial stages of development in the plant kingdom. Wherever vegetable life exists, thallophytes constitute a part of it, being the last plants to disappear in the polar regions, on high mountains, and in the depths of the sea. In size, form, structure, and mode of life, they present immense variety; many are exceedingly minute, some bacteria requiring lenses of the highest magnifying power for their detection; others, such as diatoms and yeast plants, though microscopic are readily observed; many filamentous algae are so insignificant as to escape ordinary attention; a vast number, however, are objects of familiar notice, such as molds, mildews, mushrooms, lichens, and common seaweeds; while some of the great marine species develop enormous structures exceeding 500 feet in length. They exhibit all of the principal functions of plants though there is no differentiation of any portion of the plant-body or thallus into specialized organs such as the roots and leaves of higher plants. All are composed entirely of cellular tissue and many consist only of a single cell which performs all of the essential activities—being able either to manufacture its own food from inorganic elements, or to assimilate food prepared by other organisms, and to reproduce its kind by cell division. Reproduction is of two sorts: (1) by vegetative multiplication or fission, and (2) by spores, which may be either asexually or sexually produced—the former prevailing exclusively among the lowest forms, and persisting in all, while many multiply not only by fission, but by both kinds of spores as well;—bisexuality, which characterizes all higher plants, being clearly established in the higher algae. Thallophytes have developed in two great groups or parallel series, algae and fungi. Algae possess chlorophyll (green pigment) and sustain themselves independently, like other green plants; fungi never possess chlorophyll and are incapable of independent existence.

Bryophytes (*βρύον*, moss, *φυτόν*, plant). Moss plants. One of the four great divisions or subkingdoms of plants, ranking between the thallus plants, thallophyta, and the fern plants, pteridophyta, in organic development; readily distinguished from the former by characteristic reproductive structures, called archegonia, and by distinct alternation of generations, and from fern plants by the absence of vascular tissue. They consist of the liverworts (*Hepaticae*), which descend nearly to the thallophytes in simplicity of structure and the mosses (*Musci*), which approach the pteridophytes in development. All are green plants, mostly terrestrial, and composed entirely of cellular tissue. Liverworts possess only thalloid structures without stems or roots, and with cellular expansions simulating leaves. In mosses there are structures resembling stems and leaves which are very imperfect compared to the true stems and leaves of higher plants, as there is no vascular tissue, and there are no true roots though their function is performed by corresponding organs.

The conspicuous, independent, green plant is the sexual generation, gametophyte, and gives rise to a dependent, non-vegetative, so-called fruiting form, the asexual generation, or sporophyte, which, in turn, gives rise to a new sexual generation. Therefore, as in pteridophytes, complete alternation uniformly prevails, and, excepting the absence of vascular tissue, the most striking difference between these classes lies in the fact that while in bryophytes the sexual generation, or the gametophyte, is the leafy, visible plant and the asexual generation, the sporophyte, is not prominent, in pteridophytes the asexual generation is the conspicuous, permanent plant and the sexual generation is inconspicuous and temporary.

Pteridophytes (*πτερίς*, fern, *φυτόν*, plant). Fern plants. One of the four primary divisions or subkingdoms of plants, ranking next to the flowering or seed plants, spermatophytes, in the scale of development. The pteridophytes are distinguished at once from the bryophytes and thallophytes below them by the presence of vascular tissue, and by the possession of true roots, stems, and leaves, and on the other hand they strikingly differ from the flowering plants above them by the absence of seeds. Well marked alternation of generations occurs, and in this they differ from bryophytes in that the asexual generation, sporophyte, is the vegetative, conspicuous, nutritively permanent, independent plant, while the sexual form, gametophyte, is minute, transient, and inconspicuous. The leafy plant, sporophyte, produces spores. These fall to the ground and germinate, producing minute, green, thalloid structures, called prothallia, which bear the sex organs—antheridia and archegonia. This sexual plant, gametophyte, is distinct and independent. A fertilized egg cell on the prothallium germinates, producing the large, leafy, but asexual form or sporophyte, which in turn produces spores, thus completing the cycle of alternation. By reason of vascular tissue, and the development of strong woody fibers and conducting systems, fern plants average much larger than bryophytes, ranging in size from minute floating forms to immense palm-like tree ferns of the tropics, 40 feet high with leafy fronds 12 to 15 feet long.

Spermatophytes (*σπέρμα*, seed, *φυτόν*, plant). Seed plants. The highest of the four primary divisions or subkingdoms of plants, differing from all others by the production of seeds, and embracing the conspicuous vegetation of the earth—herbs, shrubs, and trees, and including practically all of the useful plants, cultivated or otherwise employed by man. Over 100,000 species have been described by botanists, divided into two well-marked but very unequal natural groups:—

Gymnosperms, which produce naked seeds, immensely abundant in earlier geologic ages but now represented by only about 400 living species.

Angiosperms, which produce seeds in closed ovaries, now overwhelmingly predominant in the plant kingdom.

While vascular tissue first appears in the fern plants it attains its highest structural adaptation and specialization in this group.

Alternation of generations is not apparent to ordinary observation and can be demonstrated only by laboratory methods and with the microscope, owing to the minuteness of the sexual generation or gametophyte. Contrary to long established popular notion, the whole visible plant is sexless and is a true sporophyte. The true sexual generations arise from spores produced by the sporophyte, but are entirely concealed within certain portions of its structure. The pollen grains discharged from the stamens of flowers, are not the male element, but are only sexless spores, just as the spores shed by ferns are sexless, but the germinating pollen grain gives rise to a microscopic plantlet which is sexual, and produces sperm cells. Likewise the pistil and its contained ovule are not the female generation but simply a spore-producing structure of the asexual plant. However, within the ovule a sexless spore (megaspore) germinates and gives rise to a few-celled plantlet which is sexual and produces the egg cell. A germinating pollen tube, containing the sperm cell, penetrates the ovule, and fertilization is effected by fusion of the sperm and egg cells. The fertilized egg cell in the female plantlet develops into the embryo and the outer walls of the ovule develop into a tough or horny coat, and this with the contained embryo and the remains of the female plantlet, endosperm, make up the seed. Three generations are thus represented in the seed: (1) the old, sexless generation, sporophyte, by the seed coat; (2) the female generation, gametophyte, by the nutrient portion or endosperm; and (3) the new, asexual generation, sporophyte, by the embryo. This group is still popularly called flowering plants, but not all produce flowers. These plants were long called Phanerogams, meaning evident sexual reproduction, but it is in fact least evident in this group. The name Siphonogama, referring to the fertilization by the pollen tube, has been proposed, but not widely used. As all produce seeds and no other plants do, the name seed plants (spermatophytes) promises to be permanent.

CULTIVATED PLANTS.

Origin.—The cultivation of plants for food and other useful purposes antedates the historical period of the human race.

It began in those remote epochs when the progenitors of the present dominant peoples, having emerged from primitive savagery, were struggling upward through barbarism by successive conquests of nature and natural forces. In common with the acquisition of weapons and tools, the use of fire and the domestication of animals, the cultivation of plants must be reckoned as one of the great factors in the progress of the race.

History.—The earliest records show that a large proportion of the plants which are still of supreme importance to mankind were well established in cultivation at the dawn of history. It is impossible to state with any degree of exactness how long the most ancient of these have been in cultivation. For example: it is known that wheat and rice have been planted by man for at least 5,000 years, but we possess no data enabling us to estimate how many centuries, or, as seems more probable in the light of modern research, how many thousands of years, these plants had been grown previous to their first mention in available records.

In China at an annual ceremony, established 2700 B. C., wheat, rice, millet, sorghum, and the soy bean were directed to be planted by royal edict.

In Egypt, wheat, barley, and millet have been found in the earliest monuments; mummies were wrapped in linen cloth, indicating the ancient culture of flax; a drawing delineating the fig occurs in the pyramid at Gizeh; the watermelon is represented in ancient paintings; and the olive, date palm, grape, lentil, bean, and lupine were among the plants cultivated in the valley of the Nile at least 4,000 years ago.

In Switzerland the lake dwellers of the Stone Age possessed wheat, the lentil, and the apple, and later, when these communities had acquired the use of bronze, their agriculture included oats, millet, the broad bean, pea, poppy, and the pear.

In Peru, Indian corn was discovered in the catacombs of the Incas, and the lima bean and peanut have been found in the tombs at Ancon, indicating an ancient cultivation and use at the period of Spanish discovery.

In Mexico, tobacco pipes in great numbers and variety of design have been found in the ancient tombs of the Aztecs, and are also found among the remains of the mound builders of North America.

Method of Diffusion.—Agriculture, in so far as the cultivation of the principal plants is concerned, was developed in three great regions of the world, viz.: (1) China, (2) southwest Asia including Egypt, *i. e.*, from the Ganges to the Nile, and (3) intertropical America from Mexico to Peru.

China had cultivated many important plants for at least 3,000 years before intercourse with India and western Asia began, about 150 B. C. At that time the broad bean, cucumber, alfalfa, sesame, saffron, pear, spinach, and watermelon were among the useful plants introduced into China from the West, which likewise began to receive cultivated plants from the far East.

In ancient times the peoples in the region between India and Egypt, including the Mediterranean basin, exchanged cultivated plants easily. The Aryan invasion of Europe, the struggles between Assyria and Egypt, various migrations and conquests, notably the expedition of Alexander the Great to India, diffused the then cultivated plants throughout the entire region so that, after the establishment of intercourse with China, this region possessed nearly all of the useful plants of the Old World. At the period of the Crusades comparatively few cultivated plants remained for exchange, although sugar cane and some minor fruits were then brought to Europe.

The discovery and settlement of the Americas was the next great event in the diffusion of cultivated plants. The potato, maize, tobacco, prickly pear, tomato, peanut, and other valuable plants were then transported to Europe and Asia, and Old World plants in great numbers introduced into the new. The slave trade with Africa and the discovery of the Pacific Islands and Australia, together with the vast extension of modern commerce, completed the world-wide dispersion of cultivated plants existing at the present day.

Order of Introduction.—The most anciently cultivated plants were those producing seeds, roots, or fruits affording substantial food for man. Among some fifty plants known to have been in cultivation upwards of 4,000 years, all but a few are food plants, none are fodder plants for animals, and only two are green vegetables. To this most ancient group belong the cereals: wheat, barley, millet, rice; the legumes: bean, lentil, chick pea, lupine; the fruits: apple, peach, apricot, olive, fig, date palm; the vegetables: cabbage, onion, turnip, purslane; and it also includes the fiber plants: flax and hemp; the dye plants: saffron and carthamine; and the beverage plant, tea.

Among the plants which have been cultivated since the beginning of the Christian era, but not definitely known to have been in cultivation for as long a period as 4,000 years, although it is highly probable that a number of them exceed it, are the cereals: oats, rye, and probably maize; the vegetables: beet, carrot, lettuce, celery, pea, asparagus, and probably the potato and sweet potato; the fruits: orange, lemon, grape-fruit, cherry, and plum; the aromatic plants: pepper and nutmeg; the dye plants: madder and indigo; the narcotic plants: poppy, betel-pepper, and probably tobacco; and the fiber plant, cotton.

During the last 2,000 years the plants brought into cultivation have been of much less general economic importance, being, chiefly, fodder plants for domestic animals, vegetables, medicinal plants, and minor fruits. No cereal grain of the first order has been established,—the buckwheat developed in Asia during the middle ages being of little consequence in comparison with the standard grains.

Among the plants developed in agriculture and horticulture during the past 2,000 years, the following are the most important: buckwheat, commonly, though incorrectly, classed as

a cereal; the vegetables: horseradish, parsnip, parsley, chicory, endive, artichoke, pumpkin, squash, tomato, lima bean, okra, New Zealand spinach (*Tetragonia*), and mushrooms; the fruits: currant, gooseberry, raspberry, blackberry, strawberry, cranberry, muskmelon, persimmon, and pineapple; the fodder plants: red, alsike, purple, and Egyptian clover, guinea grass and timothy grass; the fiber plants: jute, sea island cotton, and sisal; the aromatic plants: red pepper, cinnamon, clove, and hop; the medicinal plants: cinchona and coca; the pistachio nut and peanut, and the beverage plants: coffee, maté, and cacao (cocoa).

With the exception of those plants established or brought into extensive use subsequent to the discovery of America, the great majority of this group dates from the middle ages. In the five centuries from 1200 to 1700, little increase was made in the number of plants in cultivation. Coffee and some of the clovers appear to have become established during this period. While great diffusion and increase in the area of distribution occurred during the period following American discovery, few plants new to cultivation were developed. During the eighteenth century, the American strawberry and persimmon in the United States, sea kale in Europe, and the tetragonia from New Zealand were contributed. Of these the strawberry ranks first, having become the leading small fruit in the United States.

The adoption of scientific methods in agriculture and the invention of labor-saving machinery in the nineteenth century produced an expansion in the area of cultivation unparalleled in history. While valuable new races and varieties of previously established plants have been added, the only new plants which have assumed intercontinental importance during the past century are the blue gum (*eucalyptus*), grown for quick timber and eucalyptus oil, and the cinchona tree, the source of quinine, both dating from about 1850. In the United States during this period the list of small fruits has been increased by the development of the blackberry, the raspberry, and the cranberry, which have now attained considerable local importance.

Botanical Rank.—Cultivated plants which have risen to economic importance belong to those groups which are highest in the scale of organic development.

With the exception of the mushroom, which is a fungus, all are spermatophytes, that is, flowering or seed-bearing plants. Each of the great divisions of the spermatophytes, the endogens and the exogens, has noteworthy representatives in cultivation. To the endogens belong the cereals, the fodder grasses, palms, and a number of vegetables and fruits, while the exogens embrace the legumes and most vegetables, fruits, and fiber plants.

The plants now in cultivation are distributed among more than fifty natural families. Among the most important of these families are the following, with examples under each:—

Grass Family (*Gramineae*), including wheat, rice, barley, oats, rye, maize, millet, sorghum, sugar cane, timothy grass.

Palm Family (*Palmaceae*), containing the date palm, oil palm, cocoanut, areca nut.

Lily Family (*Liliaceae*), represented by the onion, leek, garlic, asparagus.

Mustard Family (*Cruciferae*), which includes the radish, horseradish, cabbage, turnip, watercress, mustard.

Pea Family (*Leguminosae*), containing the bean, pea, lentil, lupine, clover, alfalfa, peanut, indigo.

Rose Family (*Rosaceae*), includes the apple, peach, pear, almond, apricot, plum, cherry, quince, raspberry, blackberry, strawberry.

Parsley Family (*Umbelliferae*), represented by the carrot, parsnip, celery, parsley.

Gourd Family (*Cucurbitaceae*), includes the gourd, cucumber, watermelon, muskmelon, pumpkin, squash.

Sumac Family (*Anacardiaceae*), mango, pistachio nut, cashew, sumac.

Myrtle Family (*Myrtaceae*), blue gum, guava, pomegranate, clove.

Madder Family (*Rubiaceae*), cinchona, coffee, madder.

Nettle Family (*Urticaceae*), breadfruit, fig, mulberry, hemp, hop, china grass.

Orange Family (*Aurantiaceae*), to which belong the orange, lemon, lime, grape-fruit.

Potato Family (*Solanaceae*), containing the potato, tomato, tobacco, red pepper, egg plant.

Sunflower Family (*Compositae*), represented by lettuce, chicory, endive, salsify, artichoke, carthamine.

It is worthy of notice that the great family of *Compositae*, embracing about one tenth of all flowering plants and ranking highest of all plants in specialization and development, should furnish such a meager list of economic plants, while the contribution of the grasses and palms, much inferior in number of species and far below in the scale of development, is of incalculable value to mankind, furnishing the major portion of food for the human family and sustenance to the most important domestic animals.

Number of Species.—Compared to the total number of wild plants the list of those attaining stable economic rank in cultivation is surprisingly small.

In the group of flowering plants (*spermatophytes*) there exist in nature upwards of 150,000 species. Yet from this vast array agriculture and horticulture have wrested only about 300 plants which have become of permanent usefulness. This does not include plants grown purely for ornamental purposes, for flowers, or foliage, but only those whose practical utility is of more than local or temporary importance, such as food, fodder, textile, tinctorial, and beverage plants.

Geographical Distribution.—The Old World has contributed about four fifths and the New World about one fifth of cultivated plants. Asia has been the chief contributor in the Old World, with Europe second. The regions furnishing the great majority of species of Old World origin are: China, India, with the East India Islands, southwestern Asia, the Mediterranean basin, including the Nile region. The region furnishing the most important New World plants is intertropical America, Mexico to Peru, and particularly the Andean plateaus.

Comparatively few useful plants have been developed outside of these focal areas, and none of the first order. The Arctic and Antarctic

zones have contributed none, neither has South Africa, Patagonia, or Argentina. Australia and New Zealand have produced so far only the blue gum (*Eucalyptus*) and the so-called New Zealand spinach (*Tetragonia*), both relatively unimportant.

It is remarkable also that the United States, a region of high average fertility, possessing a rich and varied flora of upwards of 12,000 flowering plants, should have added relatively such a small list to the economic plants of the world. The pumpkin and Jerusalem artichoke among vegetables and the American grape, strawberry, plum, blackberry, raspberry, and cranberry among fruits constitute its chief contribution. Of these the strawberry and grape are the most valuable. As yet none of these are extensively cultivated in other regions of the world. However, by grafting the European vine upon the root of the American grape, the great vineyards of France and south Europe have been saved from destruction by the insect pest, Phylloxera, making the New World grape perhaps our most valuable economic addition to Old World plants.

Changes under Cultivation.—Great modifications in the various plant parts, the root, stem, leaves, and flowers, are brought about by cultivation, most of which disappear in a short time if the plant is allowed to relapse into the wild state. However, there are a few cultivated plants which have never been discovered in a wild state, and which will not propagate themselves if abandoned. Among these are wheat and Indian corn. Like the dog among domestic animals these plants seem to have been so greatly modified through ages of cultivation that it is impossible for them to exist without the agency of man. The changes by which plants have been adapted more and more perfectly to the needs of man have been effected chiefly by selection. The choice, generation after generation, of the best developed individuals is a process of cumulative improvement capable of well nigh inconceivable results. Thus the saccharine content in the juice of the sugar beet has by careful selection been increased more than a hundred per cent. Robustness and stature can often be greatly augmented by cultivation in enriched soil. Many plants have been greatly improved by being hybridized with related stock. The earlier conception of cultivated plants as species specially created for the benefit of man instead of having been brought to their present state of usefulness through his age-long husbandry, led to artificial distinctions between cultivated and wild forms of the same plant. The writings of the earlier botanists, including those of the great Linnæus himself, are widely in error with reference to these relationships, and the connection of most cultivated plants with their parent wild species remained unrecognized or unknown until after the beginning of the nineteenth century. In 1807 Humboldt wrote: "The origin, the first home, of the plants most useful to man and which have accompanied him from the remotest epochs is a secret as impenetrable as the dwelling of all our domestic animals." Since Humboldt's time the researches of botanists throughout the world have revealed the wild form and region of origin of nearly all cultivated plants.

In case of plants of recent introduction, such as the strawberry, American grape, raspberry, and blackberry, the connection between the wild and cultivated forms is now a matter of common knowledge, and the relationships of those established during the last two thousand years are almost equally well known to science. It has also been found that about two thirds of the most anciently cultivated plants still grow wild in a form corresponding to some variety in cultivation. However, in the case of a small number of the most ancient group, the wild forms apparently have ceased to exist. Just as the wild progenitors of the camel appear to have perished prehistorically, just as the aurochs, ancestor of the domestic ox, disappeared from European forests during the middle ages, and as the buffalo has vanished from American plains during the last half century, likewise the parent wild species of tobacco, wheat, maize, broad bean, lentil, ervilla, chick pea, and probably the sweet potato and carthamine, have become extinct.

Consequently the very existence of these depends upon their cultivation. However, a plant once in cultivation is rarely, if ever, completely abandoned, even in case of species of minor importance. When replaced by more useful plants, or when largely discontinued for any economic reason, limited cultivation persists, as in case of dyer's woad when supplanted by indigo. The mallow grown as a vegetable by the Romans, and fennel and cummin once widely used in medicine, are doubtless still locally planted. Indigo and madder have been largely replaced commercially by chemical products from coal tar, yet both will be long continued in cultivation in some regions of the world. An interesting example of introduction, long use, and final abandonment is furnished by the history of alexanders, a plant closely related to spinach and celery, and, at one time, the most widely grown umbelliferous vegetable in Europe. Theophrastus (about 372-287 B. C.) refers to it only as a medicinal plant. About 500 years later Dioscorides (about 150) describes it as edible, indicating its cultivation, and in 600 years more we find Charlemagne (742-814) ordering it to be planted on his farms. Great use of it was made particularly in Italy for a long period, but in 1800 its cultivation was hardly remembered in England and France, and it is not mentioned in their gardeners' books since. Thus we see how a plant, economically important for 1,500 years and still abundant in a wild state, was entirely supplanted in cultivation by other plants better fitted to the needs of man.

Extensive cultivation in any region does not necessarily indicate ancient use there; neither does recent introduction denote a plant new to husbandry. The Chinese, who have grown tea for ages, formerly supplied the outside world, yet India, where cultivation began about 1870, now exports more tea than China. The increasingly popular grape fruit, or pomelo, an ancient Asian citrus fruit, has become established in Florida and California during the last 25 years.

The following table gives historical and economic data concerning some of the most important cultivated plants, based largely upon the researches of the great Swiss botanist, Alphonse de Candolle:—

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Agave (Amer. Aloe, Century Plant)	*Agave americana*	Amaryllis Family *Amaryllidaceae*	Perennial	Mexico
Alfalfa (Lucerne)	*Medicago sativa*	Pea Family *Leguminosae*	Perennial	Central Western Asia
Almond	*Amygdalus communis*	Rose Family *Rosaceae*	Small tree	Mediterranean basin, Western Asia
Apple	*Pyrus Malus*	Rose Family *Rosaceae*	Small tree	Europe, Asia Minor
Apricot	*Prunus armeniaca*	Rose Family *Rosaceae*	Small tree	China
Areca Nut Palm (Betelnut)	*Areca Catechu*	Palm Family *Palmaceae*	Small tree	Malay Archipelago
Arnotto or **Anatto**	*Bixa Orellana*	Bixa Family *Bixaceae*	Small tree	Tropical America
Arrowroot	*Maranta arundinacea*	Arrowroot Family *Marantaceae*	Perennial	Tropical America
Artichoke (European)	*Cynara Cardunculus*	Sunflower Family *Compositae*	Perennial	Southern Europe, Northern Africa
Artichoke (Jerusalem)	*Helianthus tuberosus*	Sunflower Family *Compositae*	Perennial	Ohio and Mississippi valleys
Asparagus	*Asparagus officinalis*	Lily Family *Liliaceae*	Perennial	Europe, Western Asia
Avocado or **Alligator Pear**	*Persea gratissima*	Laurel Family *Lauraceae*	Tree	Mexico
Banana	*Musa sapientum*	Banana Family *Musaceae*	Perennial	India

Years of Known Cultivation.	Historical Notes.	Economic Importance.
1000	Cultivation in Mexico far antedates Spanish discovery. Introduced into Europe 1561 from South America.	Extensively cultivated in the plateau of Mexico. Pulque, the national beverage of the Mexicans, is made from the fermented sap, and by distillation mescal is obtained. From very closely related, possibly identical, species are derived the valuable fibers maguey or Pita flax and sisal hemp, used for cordage, binding twine, etc.
2500	Introduced into Greece 470 B. C. from Persia. Mentioned in Vergil. Brought to Mexico and S. America by Spanish. Introduced into California in 1854 from Chile.	A most valuable fodder plant of great importance throughout the world. Grown extensively in Europe, Asia, Africa, North and South America. Especially adapted to dry regions, producing enormous crops under irrigation. Extensively grown in Kansas and Oklahoma without irrigation, and is chief forage crop in Colorado, Utah, California, and other western states under irrigation.
4000	Cultivation prehistoric in western Asia. Mentioned by Theophrastus, Pliny, and Dioscorides.	Sweet almonds commercially important in S. Europe, W. Asia, N. Africa, and California, but the United States import about $1,000,000 worth of nuts annually in addition to present production. Bitter almonds limited in cultivation; used in making flavoring extracts and prussic acid.
4000	Cultivation prehistoric. Abundantly used by Lake Dwellers of the Stone Age in Italy and Switzerland.	Most important fruit of the temperate zone, area of production, consumption, and variety of product being considered, ranking with the grape, olive, orange, lemon, and banana, among the six leading fruits of the world. North America is preëminently the leading apple growing region. Cultivation dates back to the earliest settlements, the records showing production of 500 barrels of cider by one man in New York in 1639. In the United States, New York, Pennsylvania, and Ohio produce about one third of the total crop.
4000	Cultivation in China antedates 2000 B. C. Introduced into S. E. Europe at the time of Alexander the Great, about 325 B. C.	Extensively grown in N. India, Persia, S. Europe, and Egypt. Although marketable quantities are grown in New York, crop commercially important in the United States only in California and Oregon, whence large quantities of the fresh and dried fruit are shipped to the eastern states and abroad.
2000	Anciently cultivated by Malaysian peoples. Introduced into China 111 B. C.	Great quantities of the nut are grown in India, Cochin China, Ceylon, and the Malaysian Islands; a considerable article of trade in the East, where betel chewing is practised. The areca nut mixed with lime and chewed with betel leaves acts as a stimulant and blackens the teeth. The nut also yields a kind of catechu.
1000	Cultivation prehistoric in tropical America. Now naturalized in India.	Also called anotto, arnatto, and annotta. Source of most widely used dye for coloring dairy products, being the standard butter and cheese color in the United States, England, and Holland. Has limited use as a dye in calico printing. Anciently used by natives of Brazil, Central America, and West Indies to stain their bodies red, and by Mexicans in painting.
300	Cultivation widely diffused in tropical America and West Indies since Spanish discovery. Also introduced on the coast of Guinea in Africa.	Widely cultivated in the East and West Indies and in Africa for food. Large imports of prepared arrowroot made to Europe and the United States. A starch food highly esteemed for invalids and children.
2000	Cultivated by the Romans. Introduced into England 1548. Naturalized as a weed in the pampas of Buenos Aires, spreading over vast areas in the nineteenth century.	Much grown and highly valued table vegetable in Europe. Sparingly used in the United States. In wild state called cardoon.
300	Tubers used by the Indians. Introduced into England 1616. Now cultivated in Europe.	As yet grown only to a limited extent in the United States, chiefly as food for pigs. Very little used as table vegetable. Yields enormous crops, 200 to 500 bushels per acre. Alcohol is made from the tubers in Europe.
2000	Much changed by cultivation, the succulent young stems used for food attaining many times their normal size in the wild state.	Increasingly popular table vegetable. Cultivation becoming important market garden industry near the large cities of Europe and the United States.
400	Common names absurd. Not a pear and bears no known relation to the alligator. Avocado is a corruption of the Mexican name.	Fruit highly prized and much grown in tropical countries; is both wild and cultivated in Mexico, West Indies, and Brazil. Cultivation now established in S. Florida and S. California.
4000	Cultivation antedates historical records in India. Pliny mentions that the Greeks under Alexander the Great saw it in India.	The most important tropical fruit widely used in temperate regions, extensively cultivated in tropical countries throughout the world. Produced in enormous quantities in the West Indies and Brazil, and shipped in constantly increasing volume to the United States and Europe. Beginning with a few hundred bunches in 1870, consumption in the United States has increased to upwards of $5,000,000 worth annually. Banana flour is becoming a staple article of food.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Barley	*Hordeum vulgare*	Grass Family *Gramineae*	Annual	Asia
Bean, Broad	*Vicia Faba*	Pea Family *Leguminosae*	Annual	Southwest Asia
Bean, Lima	*Phaseolus lunatus*	Pea Family *Leguminosae*	Annual	Brazil
Bean, Navy or **Kidney**	*Phaseolus vulgaris*	Pea Family *Leguminosae*	Annual	South America
Bean, Soy	*Dolichos soja*	Pea Family *Leguminosae*	Annual	China, Japan, Java
Beet	*Beta vulgaris*	Goosefoot Family *Chenopodiaceae*	Biennial or Perennial	Mediterranean region
Betel Pepper	*Piper Betle*	Pepper Family *Piperaceae*	Shrub	Malay Archipelago
Blue Gum	*Eucalyptus globulus*	Myrtle Family *Myrtaceae*	Tree	Australia
Breadfruit	*Artocarpus incisa*	Nettle Family *Urticaceae*	Tree	Sunda Islands
Broom Corn	*Sorghum saccharatum var.*	Grass Family *Gramineae*	Annual	Tropical Africa
Buckwheat	*Polygonum Fagopyrum*	Buckwheat Family *Polygonaceae*	Annual	Manchuria, Siberia
Cabbage	*Brassica oleracea*	Mustard Family *Cruciferae*	Annual, Biennial, Perennial	Europe
Cacao	*Theobroma Cacao*	Byttneria Family *Byttneriaceae*	Small tree	Amazon and Orinoco valleys
Carrot	*Daucus Carota*	Parsley Family *Umbelliferae*	Biennial	Europe

Years of Known Cultivation.	Historical Notes.	Economic Importance.
4000	Cultivation extremely ancient. Found in oldest Egyptian monuments and in remains of Lake Dwellers of Stone Age in Switzerland. Mentioned by Theophrastus.	Important grain, ranking sixth among cereals, being preceded by wheat, rice, maize, oats, and rye. Greater part of crop in Europe and the United States used in the manufacture of beer. The finest malting barley is grown in Bohemia. Produces crop in great extremes of climate, being grown in Norway, Alaska, and Iceland, also in Algeria, Egypt, and India, as well as in temperate regions. California leads production in the United States.
4000	Cultivation dates back to the Bronze Age by Lake Dwellers of Switzerland and Italy. Known to the Hebrews 1000 B. C.	Important article of food in Europe and W. Asia; also valuable forage plant; grown in gardens and as a field crop. All species of the bean have a very high food value; are relatively cheap in price, but much less easily digested than cereals.
400	Found in old Peruvian tombs. Introduced into Africa during period of the slave trade.	Widely cultivated in tropical Africa, sparingly in temperate regions. Production in the United States most extensive in California.
400	Introduced into Europe subsequent to discovery of America.	Extensively grown in the United States, over 150 varieties in cultivation, as a garden vegetable, "string beans," as a fodder crop, and for food. The closely related "frijole" is universally grown in Mexico and Spanish American countries, where it ranks next to maize as a staple food.
4700	Very ancient in China; records show cultivation dating to 2700 B. C.	The common bean of China and Japan, grown in immense quantities. Various preparations form a part of the daily food, to a considerable extent taking the place of meat in supplying the proteid elements. Now grown in Europe and southern and southwestern United States as forage and soiling crop.
2200	Anciently cultivated for leaves and roots used as vegetable. Sugar beet culture modern, being established in Germany and France about 1810.	The chief source of sugar, furnishing about three fifths of the total product; sugar cane, which for 2,000 years had contributed practically all of the world's supply, being reduced to second place during the last half century by the enormous sugar beet crops of Europe—Germany, France, and Russia leading in production. The sugar beet industry is increasing very rapidly in the United States, notably in Michigan, Nebraska, Colorado, California, and Utah. The development of a profitable amount of sugar in the beet is one of the most remarkable agricultural achievements of the nineteenth century, elevating an ancient but minor garden vegetable to front rank among the economic plants of the world.
2300	Leaves chewed with areca nut since 400 B. C. by Malays of the East Indies.	Cultivation extensive in the East Indies, where the consumption of leaves by chewing with the areca nut is enormous. Narcotic stimulant.
75	Introduced into Europe, Asia, Africa, and America about 1850. First planted in California in 1856.	Said to be the most rapidly growing tree in the world; wood hard, difficult to work, used for wheel spokes, mining timber, carpentry, not attacked by borers. Leaves yield eucalyptus oil, important medicinally.
400	In cultivation in tropical East Indies when first visited by Europeans.	Fruit one of the chief food products of the Indian Archipelago and the Pacific Islands. Bark furnishes fiber for clothing. The milky juice and wood are also of value.
4000	The species of *Sorghum*, of which this is one of many varieties, has been in cultivation since very ancient times. Grown in the United States before 1800.	This variety of the *Sorghum* is grown for broom making only in Italy, France, Germany, and the United States. Illinois, Kansas, Missouri, and Oklahoma, ranking in the order named, produce seven eighths of the crop, Illinois growing about one half of the total crop of the United States. (See *Sorghum cane.*)
2000	Introduced into Europe from northwestern Asia during the Middle Ages.	A food plant of minor importance compared to the standard cereals, but extensively grown in European and Asiatic Russia, where buckwheat porridge is a common article of diet, and to a smaller extent in other European countries and in the United States. In the United States buckwheat flour is used chiefly for pancakes or griddlecakes, infrequently for bread. Production declining, the crop of 1900 being one third less than that of 1860. Japanese varieties of value as honey plants.
4000	Ancient Greeks cultivated three varieties. Pliny mentions six. In modern cultivation varieties very numerous.	Widely cultivated in the Old World, particularly in Europe, and grown on a greater number of farms in the United States than any other vegetable. Over 150 varieties are enumerated. Ages of cultivation have developed the widely modified forms, kale, kohlrabi, cauliflower, Brussels sprouts, also the tree- or cow-cabbage grown for cattle in France, often attaining a height of 10 feet and sometimes 12 or 15 feet.
1000	Anciently cultivated in tropical America.	Source of cocoa, chocolate, and the soft solid oil called cocoa butter, which constitutes over 50 per cent of the seeds. The fruit is eaten and also used in making a fermented liquor.
2000	Introduced into England from Holland about 1500. In wild state becomes troublesome weed.	In general but limited cultivation as stock food and garden vegetable in Europe and the United States.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Carthamine	*Carthamus tinctorius*	Sunflower Family *Compositae*	Annual	W. Asia, Arabia
Cashew	*Anacardium occidentale*	Sumac Family *Anacardiaceae*	Tree	Tropical America
Cassava	*Manihot utilissima*	Spurge Family *Euphorbiaceae*	Small shrub	Tropical America, Brazil
Castor Oil Plant	*Ricinus communis*	Spurge Family *Euphorbiaceae*	Annual, Small shrub	Tropical Africa, Abyssinia
Celery	*Apium graveolens*	Parsley Family *Umbelliferae*	Biennial	Europe, No. Africa, Western Asia
Century Plant (see Agave)				
Cherry	*Prunus Cerasus*	Rose Family *Rosaceae*	Small tree	W. Asia, E. Europe
Chickling Vetch	*Lathyrus sativus*	Pea Family *Leguminosae*	Annual	West Asia south of the Caucasus
Chick Pea	*Cicer arietinum*	Pea Family *Leguminosae*	Annual	Persia
Chicory	*Cichorium Intybus*	Sunflower Family *Compositae*	Perennial	Europe, Northern Africa, W. Asia
China Grass	*Boehmeria nivea*	Nettle Family *Urticaceae*	Perennial, Shrub	China, Japan
Cinchona	*Cinchona Calisaya*	Madder Family *Rubiaceae*	Small tree	Peru, Bolivia
Cinnamon	*Cinnamomum zeylanicum*	Laurel Family *Lauraceae*	Small tree	Ceylon, India
Clove	*Caryophyllus aromaticus*	Myrtle Family *Myrtaceae*	Small tree	Molucca Islands
Clover (Alsike)	*Trifolium hybridum*	Pea Family *Leguminosae*	Perennial	Temperate Europe
Clover (Egyptian)	*Trifolium alexandrinum*	Pea Family *Leguminosae*	Annual	L. Syria, Asia Minor
Clover (Italian)	*Trifolium incarnatum*	Pea Family *Leguminosae*	Annual	Southern Europe
Clover (Red)	*Trifolium pratense*	Pea Family *Leguminosae*	Perennial	Europe, Algeria, Western Asia

Years of Known Cultivation.	Historical Notes.	Economic Importance.
4000	Grave clothes of mummies are dyed with carthamine and fragments of the plant are found in ancient Egyptian tombs. Introduced into China about 150 B. C.	Used since remote antiquity as a red dye for cotton and silk; now largely supplanted by coal tar colors except in India and China, where it is still an article of local commerce. Cultivated in France, Spain, Italy, India, and China. The extract mixed with talcum forms the cosmetic known as rouge.
400	Widely diffused in tropical countries since Spanish discovery, particularly in India and Guinea. Introduced into East Indies by Portuguese.	Much cultivated in the tropics for fruit and nuts used for food. Fruit also furnishes a vinous liquor, and the tree yields a gum similar to gum arabic.
1000	Long cultivated in Brazil, and after Spanish discovery extended to Africa and Asia.	Chief source of tapioca. Important food plant in tropical countries. Cultivation now established in Florida.
4000	Prehistorically cultivated. Seeds found in ancient Egyptian tombs. Mentioned by Theophrastus and Dioscorides.	Cultivated in Italy, France, Spain, Algeria, India, West Indies, South America, and the United States for oil expressed from seeds. Cultivation in the United States limited mainly to Oklahoma, Kansas, Illinois, and Missouri and of little importance. Oil largely used in medicine and the arts, and in India as lamp oil.
3000	Anciently grown in Mediterranean region. Mentioned in Homer's *Odyssey*.	Widely cultivated in Europe and rapidly increasing in the United States, in 1900 rising to tenth rank in acreage devoted to garden vegetables.
2000	Grown before Christian era in W. Asia and S. Europe. Mentioned in Vergil's *Georgics*.	Cultivated in temperate regions of Europe, Asia, and the United States. Is included among the 15 leading fruits of the world. Ranks about eighth among fruits of the United States. Pennsylvania and California lead in production.
2000	Cultivation in S. Europe dates back to Greeks and Latins. Now cultivated in N. India and W. Asia.	Minor food plant cultivated in India, Germany, France, and some other countries for its seeds.
4000	Cultivation ancient in India. Referred to in Homer's *Iliad* and by Theophrastus.	Grown extensively in Asia for the table and for stock food. Seeds sometimes substituted for coffee.
2000	Cultivated by the Greeks and Romans.	Chief use as an adulterant for coffee, the practice originating in France. Chiefly grown in France, Holland, Germany, and Scandinavia, but recently becoming of commercial consequence in limited areas in the United States, Michigan producing about nine tenths of the crop.
	Not a grass, but a nettle, closely related to the hemp and the hop. Cultivation begun in S. France about 1850 and sparingly in S. United States about the same time.	Valuable fiber plant, mostly grown in China and India. Excellent fiber, stronger than hemp, and nearly as pliable as silk. Used in making China grass cloth and bank note paper.
250	Bark introduced into Europe in 1639 by the Countess of Cinchon, whence the name. Now extensively cultivated in India, Japan, Ceylon, and Jamaica.	Source of quinine, the most important drug in tropical medicine, and widely used throughout the world. Cultivation becoming more and more extensive.
150	Cultivation begun in Ceylon about 1765. Bark of wild trees used from remote antiquity.	Cultivated for bark in Brazil, West Indies, Egypt, and Java, but cultivation now declining in favor of coffee.
300	Brought to Europe by Portuguese after the establishment of East Indian trade.	Valued spice tree; the dried flower buds are the cloves of commerce. Cultivated on many tropical islands and coasts, chiefly in the Moluccas, Sumatra, Java, Mauritius, Zanzibar, Jamaica, and French Guiana. The oil of cloves widely used in flavoring and perfumery and also in medicine.
500	Introduced into Great Britain from Sweden in 1834.	Named for Alsike, Sweden, where it has been long cultivated. One of the best clovers, but as yet only sparingly cultivated in the United States. Excellent honey plant.
500	Cultivation universal though not ancient in Egypt. Now being introduced in S. United States.	Especially adapted to warm climates; principal food of cattle in Egypt. In the United States sparingly cultivated in the Southern States.
500	Cultivation long only local in S. France. Introduced into Italy and England during the last 100 years. Now extending to the United States.	Valuable fodder plant in S. France and Italy. In the United States cultivation is increasing though not extensive.
500	Introduced into England from the Netherlands in 1663.	A most valuable forage and soiling plant, the leading leguminous fodder of the North Central and Eastern United States, where it is relatively as important as alfalfa in the West or the cow pea in the South. In common with other clovers and most leguminous fodders it is of great value in crop rotation, enriching the soil through the agency of bacteria living in the roots, which transfer nitrogen from the air to the soil, a remarkable natural process of fertilization.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Coca	*Erythroxylon Coca*	Erythroxylon Family *Erythroxylaceae*	Small shrub	Peru and Bolivia
Cocoa (see Cacao)				
Cocoanut Palm	*Cocos nucifera*	Palm Family *Palmaceae*	Tree	Malay Archipelago
Coffee	*Coffea Arabica*	Madder Family *Rubiaceae*	Small tree	Abyssinia, Arabia
Coracan	*Eleusine coracana*	Grass Family *Gramineae*	Annual	India
Corn, Indian, Pop-corn, Sweet Corn. (see Maize)				
Corn Spurry	*Spergula arvensis*	Pink Family *Caryophyllaceae*	Annual	Europe
Cotton (Common)	*Gossypium herbaceum*	Mallow Family *Malvaceae*	Annual, Small shrub	India
Cotton (Sea Island)	***Gossypium barbadense***	Mallow Family *Malvaceae*	Annual, Small shrub	West Indies, Tropical America
Cow Pea	*Vigna Catjang*	Pea Family *Leguminosae*	Annual	Southeastern Asia. Malay Archipelago
Cranberry	*Vaccinium macrocarpon*	Heath Family *Ericaceae*	Small shrub	Northeastern United States and Canada
Cucumber	*Cucumis sativus*	Gourd Family *Cucurbitaceae*	Annual	India
Currant (Black)	*Ribes nigrum*	Gooseberry Family *Grossulariaceae*	Small shrub	Europe, Siberia, Manchuria
Currant (Red)	*Ribes rubrum*	Gooseberry Family *Grossulariaceae*	Small shrub	N. Europe, Siberia, N. U. S. and Canada
Date Palm	*Phoenix dactylifera*	Palm Family *Palmaceae*	Tree	S. W. Asia, N. Africa
Egg Plant	*Solanum Melongena*	Potato Family *Solanaceae*	Annual	India

Years of Known Cultivation.	Historical Notes.	Economic Importance.
1000	Cultivation and use ancient in Peru and Bolivia. Supplies of leaves found buried with mummies in Peruvian tombs.	Source of cocaine. Extensively cultivated in South America, Ceylon, India, and Java. Yearly production of leaves used in South American trade estimated at 50,000,000 pounds. Coca chewing is almost universal among peoples of the Andean region.
3000	Ancient cultivation in East Indies. Now extended to tropical coasts throughout the world.	A most useful tropical tree, extensively cultivated on the coasts of India, the East and West India Islands, and Brazil. Leading food plant of the Pacific Islands. Besides the cocoanut, and its dried kernel, the copra of commerce, as chief products, palm wine, arrack, and sugar are made from the juice; fiber for cordage is obtained from the stems and coir from the husk of the nut. Cultivation has been established in Florida.
500	Beginning of cultivation uncertain, but not ancient. Introduced for cultivation in South America by the Dutch in 1718.	Coffee and tea are preëminently the leading beverage plants, cacao, maté, and the various substitutes being relatively insignificant. Commercially of great importance. Largely grown in Brazil, Mexico, Central America, West Indies, Arabia, Java, Sumatra, Ceylon, India, and Hawaii, Brazil leading with a production of over one half of the world's crop. In the United States the consumption greatly exceeds that of tea; in England tea is preëminently first.
2000	Cultivation ancient in India. More recently extended into Japan, Egypt, and Abyssinia.	Seeds similar to millet; used for food. Cultivated in India, Malay Archipelago, Japan, Egypt, and Abyssinia.
1500	Cultivation dates to the late Romans. Now widely diffused in N. Africa, W. Asia, to Hindustan and Java. Sparingly naturalized in the United States.	Cultivated for fodder in southern Europe.
2200	Known to ancient Greeks. Introduced into China about 900. Cultivation begun in Virginia in 1721. First export in 1784.	The most valuable textile fiber plant. Crop commercially important in the United States, British India, Egypt, Russia, China, Brazil, Mexico, Peru, and Turkey, which usually rank in the order named, the United States producing two thirds and upwards of the world crop annually, with British India and Egypt next in importance, these three countries usually producing over nine tenths of the export crop. Grown on upwards of a million farms in America, the leading agricultural crop of the Southern States, Texas leading in production. Total crop second in value only to corn in the United States, of which about nine tenths is for fiber and about one tenth for cotton seed product, oil, stock food, etc.
500	Cultivation well established in West Indies, Mexico, Peru, and Brazil at time of earliest Spanish discovery.	Very valuable for its long fiber. Grown in the West Indies, tropical America, and the southern United States, particularly in Georgia, South Carolina, and Florida. Production limited in amount, constituting about one per cent. of the total cotton crop in the United States.
500	Cultivation widely diffused in tropical regions since establishment of European trade with the East following Spanish discovery. Introduced in S. United States about 1725.	Grown for food and forage in most tropical and subtropical countries. The most important fodder and soiling crop of the southern United States, corresponding in value to red clover in the Northeastern region and to alfalfa in the West.
100	Cultivation begun in Massachusetts about 1800. Now sparingly cultivated in England.	Cultivation important in certain limited areas in the United States. Massachusetts grows three fifths, New Jersey one fourth, and Wisconsin one tenth of the total crop of about 1,000,000 bushels.
4000	Cultivation prehistoric. Known to Greeks and Romans. Introduced into China about 150 B. C.	Widely grown throughout the world. Stands sixth in acreage devoted to garden vegetables in the United States.
1500	Cultivation begun in Europe during early Middle Ages.	Extensively grown in Continental Europe, Scotland, and Canada; sparingly in the United States. In France the *liqueur de cassis* is made from the fruit.
1200	Unknown to Greeks and Romans. Cultivation dates from the Middle Ages. Rare in England until after 1600.	Very widely grown in Europe and the United States, chiefly for jellies. New York and Michigan lead in production.
4000	Very ancient cultivation in Egypt and Babylonia. Mentioned by Herodotus. Is the palm of the Bible.	Furnishes the date of commerce, also oil, fiber, and wood. Much cultivated in southwestern Asia and northern Africa, and to some extent in China, France, and Italy. Chief source of wealth in Arabia.
4000	Anciently cultivated in India. Now extensively grown in East Indies; sparingly in temperate United States.	Important vegetable in the East Indies. Culture and use in the United States limited but increasing.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Endive	*Cichorium Endivia*	Sunflower Family *Compositae*	Annual	Mediterranean basin to Turkestan
Ervilla	*Ervum ervilia*	Pea Family *Leguminosae*	Annual	Mediterranean basin
Fenugreek	*Trigonella foenum-graecum*	Pea Family *Leguminosae*	Annual	W. Asia, N. E. India
Fig	*Ficus Carica*	Mulberry Family *Moraceae*	Small tree	Mediterranean basin to Afghanistan
Flax	*Linum usitatissimum*	Flax Family *Linaceae*	Annual	Western Asia
Garlic	*Allium sativum*	Lily Family *Liliaceae*	Perennial	Desert of the Kirghiz, W. Asia
Gooseberry	*Ribes Grossularia*	Gooseberry Family *Grossulariaceae*	Small shrub	Eur., N. Afr., W. Asia
Grape (American)	*Vitis Labrusca*	Grape Family *Vitaceae*	Shrub	N. E. United States
Grape (European) (The Vine)	*Vitis vinifera*	Grape Family *Vitaceae*	Shrub	W. Asia, Mediterranean basin
Grape Fruit	*Citrus decumana*	Orange Family *Aurantiaceae*	Tree	Pacific Isl., E. of Java
Guava	*Psidium Guayava*	Myrtle Family *Myrtaceae*	Small tree	Tropical America
Hemp	*Cannabis sativa*	Nettle Family *Urticaceae*	Annual	Siberia

Years of Known Cultivation.	Historical Notes.	Economic Importance.
2000	Probably cultivated by Greeks and Romans, but proof not fully clear.	Widely grown salad plant in Europe; sparingly in the United States.
3000	Cultivated by ancient Greeks and Romans. Seeds excavated on the site of Troy. Still grown by modern Greeks and also in Italy.	Useful fodder plant; seeds also of some value, but the formerly extensive cultivation in Europe now confined to forage growing in Greece and Italy.
2000	Cultivation common in ancient Greece and Italy. Now abandoned in Europe, but maintained in India, W. Asia, and the Nile valley since remote antiquity.	Spring fodder plant; seeds used in medicine.
4000	Cultivation prehistoric. Pictured in a pyramid in Egypt. Mentioned by Archilochus 700 B. C., also by Herodotus, Theophrastus, and Plato.	Valuable fruit; extensively cultivated in subtropical countries, particularly in Spain, Italy, and S. France, in Europe, and in southwestern Asia. Grown in the Gulf States and in California. Chiefly important as dried fruit. All dried figs in the United States are produced in California; commercial figs largely from Asiatic Turkey, though Smyrna figs are now established in California.
5000	Remotely ancient in cultivation. Egyptian mummy cloths are woven from flax fiber.	Second only to cotton as a fiber plant, and linseed oil production important. Chief fiber production is in Russia, Sweden, Germany, Austria, and Ireland, Russia leading. In the United States fiber production, once important, is practically abandoned. Chief seed production is in Russia, British India, United States, and Argentina, in average years ranking in order named, the United States producing about one fifth of the world crop, chiefly grown in North and South Dakota, Minnesota, Iowa, and Kansas.
2000	Moderately ancient cultivation in China. Herodotus affirms that the ancient Egyptians grew it, but no records remain.	Generally used as a condiment in southern Europe; not popular and only sparingly used in the United States. Oil of garlic used medicinally.
400	Cultivation may date to the Middle Ages. Became common in Germany and Holland about 1500 and was introduced into England during the sixteenth century.	Highly prized in northwestern Europe; not cultivated in southern Europe; reaches highest perfection in England. In the United States, while widely grown, is of minor importance, ranking sixth among small fruits, being preceded by the strawberry, raspberry, blackberry, cranberry, and currant.
300	First vineyard planted by Lord Delaware in 1610, but not extensively grown until after the introduction of the Concord grape during the last century. While the Concord, Catawba, Isabella, Hartford, and most of the cultivated varieties originated from the wild northern fox or plum grape, *Vitis Labrusca*, the Clinton grape was derived from the wild species, *Vitis riparia*, and most of the American wine grapes from the native summer grape, *Vitis aestivalis*.	Since 1860 culture has made remarkable progress, the last census showing crop exceeding $8,000,000 in value. New York produces one third of the American grape crop and is followed by Ohio, Pennsylvania, Michigan, Illinois, Indiana, Missouri, and Kansas, in order named. Notwithstanding the extensive culture of the European grape in the Pacific States, the American grape constitutes three fifths in value of all grape products of the United States. Millions of young vines have been shipped to Europe to be top grafted with the European vine. This procedure has protected the great vineyards of France, Italy, and Spain from the ravages of the *Phylloxera*, the American grape root successfully resisting the pest.
5000	Remotely ancient in Egypt. Used by Lake Dwellers of the Bronze Age in Italy. Cultivated by the Phoenicians, Hebrews, Greeks, and Romans. Introduced into China 120 B. C.	Shares leading rank with the apple among world fruits. Cultivation important in every continent. Chief products, raisins, currants, and wine of great commercial importance. Raisin production largest in Spain, but important in southwestern Asia, Australia, and California. Currants are small seedless raisins, mostly grown in Greece (name derived from Corinth). Wine is made throughout the world, total production estimated at 4,000,000,000 gallons, France, Italy, and Spain contributing about three fourths of this enormous amount. The European grape products of California,— wine, raisins, and table grapes,— amount in value to two fifths of all grape products of the United States.
2000	Long cultivated in India and Malay Archipelago. Cultivation established in Florida and California during last 25 years.	Anciently cultivated and much prized fruit in India, China, East Indies, and Pacific Islands. Also called shaddock from name of the captain who first introduced it into the West Indies. Now successfully established in Florida and California, and rapidly becoming popular table fruit in the United States.
400	Commonly grown from Mexico to Peru at date of Spanish discovery. Since widely diffused in East and West India Islands, India, and China. Recently established in Florida and California.	Valuable fruit, strictly tropical, chiefly grown in the East and West Indies, but now well established in Florida and to some extent in S. California.
4000	Anciently cultivated in China, central Asia, and Russia. Probably brought into Europe by Scythians about 1500 B. C. Mentioned by Theophrastus and in the Talmud.	Important fiber plant, ranking next to cotton and flax. Extensive cultivation in Europe, notably in S. Russia, for fiber, and in India for seed and narcotic products. Fiber production in the United States practically limited to Kentucky; was most important about 1860; now declined to less than one tenth of former yield, due to introduction of jute, manila, and sisal hemp for cordage.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Henna	*Lawsonia alba*	Loosestrife Family *Lythraceae*	Shrub	W. Tropical Asia
Hop	*Humulus Lupulus*	Nettle Family *Urticaceae*	Perennial	Europe, W. Asia, N. America
Horseradish	*Radicula Armoracia*	Mustard Family *Cruciferae*	Perennial	Eastern Europe
Indigo	*Indigofera tinctoria*	Pea Family *Leguminosae*	Shrub	India
Jujube	*Zizyphus vulgaris*	Buckthorn Family *Rhamnaceae*	Small tree	N. China
Jute	*Corchorus capsularis*	Linden Family *Tiliaceae*	Annual	India
Kafir Corn	*Sorghum saccharatum var.*	Grass Family *Gramineae*	Annual	Tropical Africa
Leek	*Allium ampeloprasum var. porrum*	Lily Family *Liliaceae*	Perennial	Mediterranean basin
Lemon	*Citrus medica*	Orange Family *Aurantiaceae*	Small tree	India
Lentil	*Ervum Lens*	Pea Family *Leguminosae*	Annual	W. Asia, Greece, Italy
Lettuce	*Lactuca Scariola*	Sunflower Family *Compositae*	Annual, Biennial	S. Europe, N. Africa, W. Asia
Lime	*Citrus medica var. acida*	Orange Family *Aurantiaceae*	Small tree	India
Lucerne (see Alfalfa)				
Lupine	*Lupinus albus*	Pea Family *Leguminosae*	Annual	Sicily, Macedonia
Lupine (Egyptian)	*Lupinus termis*	Pea Family *Leguminosae*	Annual	From Corsica to Syria
Madder	*Rubia tinctorum*	Madder Family *Rubiaceae*	Perennial	W. Asia, S. E. Europe
Maize (Indian Corn)	*Zea Mays*	Grass Family *Gramineae*	Annual	Plateaus of Tropical America

Years of Known Cultivation.	Historical Notes.	Economic Importance.
4000	Antiquity of use by women as dye for staining finger nails red shown by ancient Egyptian paintings and mummies. This custom persists in the East at the present day.	Commercially cultivated in India and Arabia for the dye. Flowers used in perfumery and embalming.
1200	Cultivation first mentioned by Pepin 768. Began in England about 1525. Introduced into the United States 1629.	Came into general use in brewing in the Middle Ages; now most extensively cultivated in Germany, England, and the United States, which rank in production in the order named. New York produces one third of the American crop, maintaining first rank since 1840, Oregon, California, and Washington growing practically all of the remainder.
1000	Extensively naturalized as a weed in the United States. Non-seed bearing.	Root widely used as a condiment in Europe and the United States, but cultivation unimportant in extent.
2000	Anciently cultivated in India. The dye was known to the Romans, who called it *indicum*, thus denoting its source in their commerce. Another species (*I. Anil*) is cultivated in Mexico.	Important dye plant, yielding valuable blue dye stuff; most extensively grown in India, but production also commercially important in Java and the Philippines. Large European imports from India since 1600, but culture now seriously threatened by increasing use of aniline dyes.
2500	According to Pliny was brought from Syria to Rome in the reign of Augustus.	Dried fruit an article of commerce in S. Europe, Syria, India, and China.
2000	Long cultivated in India; much more recently in Ceylon, Sunda Islands, Philippine Islands, and southern China; introduced into portions of tropical Africa; experimentally grown in Florida.	Exceedingly valuable coarse fiber plant. Commercial production practically limited to India, where it is of great importance, the development of the jute industry and export having been enormous during the last century, export of fiber exceeding 1,500,000,000 pounds and jute cloth (gunny) 300,000,000 yards in 1898. Is replacing hemp, flax, and other fibers.
4000	Non-saccharine *Sorghums* are of ancient cultivation in Asia and Africa. Introduced into the United States about 1885 by the United States Department of Agriculture. (See *Broom Corn*, *Sorghum*.)	Successfully grown as substitute crop for Indian corn in dry regions. Has become important crop in sections of Kansas, Oklahoma, Texas, and California. (See *Sorghum cane*.)
2000	Extensively cultivated in central and southern Europe, northern Africa, and Asia. Not now found in wild state.	Extensively grown in Europe for culinary purposes; not popular, and very sparingly cultivated, in the United States.
2500	Cultivation ancient in India, whence it spread very early into Mesopotamia and Media; became known to the Greeks through the Medes, giving rise to the specific name *medica*. Mentioned by Theophrastus and Dioscorides.	Important fruit; in world-wide use; much grown in subtropical and tropical countries; the most extensively used variety of the species; the other important varieties of *Citrus medica* being the citron, bergamot, lime, and sweet lime. Cultivation in the United States limited mostly to S. California.
5000	Prehistoric. Used by Lake Dwellers. Probably the "red pottage" of Esau mentioned in Genesis.	Valuable food plant, but less popular than peas or beans in Europe. Commercial crop grown in Egypt, but extensively cultivated in Europe and Asia, and to a small extent in New Mexico and Arizona.
2200	Cultivated by the Greeks and Romans.	Widely popular and much used salad plant. Cultivated wherever climate permits throughout the world.
2000	Ancient cultivation in India, from whence it has been widely diffused in tropical countries.	Much prized acid fruit in the tropics; widely imported in temperate regions, but sparingly used, being much less popular than the lemon. Now successfully grown in Florida, which produces a small crop.
2200	Anciently cultivated in Italy. Known to Theophrastus and Pliny.	Widespread cultivation for seeds and for green manuring in Europe. Rarely cultivated in the United States.
4000	Found in ancient Egyptian tombs. Still widely cultivated in Egypt.	Cultivated for seeds used for food in Egypt and Crete since ancient times.
2000	Culture becoming non-important on account of substitution by the artificial dye, alizarin.	Once furnished the most important red dye and was extensively cultivated in Europe, East Indies, and China, but practically abandoned in Europe and rapidly diminishing in the East, being replaced by the aniline dyes.
2000	Anciently cultivated in Peru even before the Incas, and by the Toltecs and Aztecs in Mexico. Found in the catacombs of Peru and in the remains of North American Mound Builders. Darwin found ears of Indian corn buried in soil that was formerly part of the shore in Peru, but now over eighty feet above sea level. Like wheat, maize is unknown in the wild state, and evidently has been so greatly modified by cultivation as to be incapable of maintaining itself from year to year independent of human agency.	A cereal of the first rank, the chief contribution of the American continent to the food plants of the world. Cultivated extensively in North and South America, southern Europe, and Asia, total production equaling in volume that of wheat, oats, or rye; the largest and most valuable grain crop of the United States, which produces fully three fourths of the world crop. Yield greatest in the Mississippi valley, where six states, Iowa, Illinois, Missouri, Kansas, Indiana, and Nebraska, grow one half of the crop. Staple food in Mexico and Central America, and increasingly used for food in S. Europe and Asia. Sweet corn is a garden variety which has assumed great importance since the development of the canning industry, ranking in acreage with the tomato and garden pea as a vegetable and canning crop. Pop corn has become a valuable local crop in certain sections, particularly in northwestern Iowa.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Mango	*Mangifera indica*	Sumac Family *Anacardiaceae*	Small tree	India, Malay Peninsula
Manila Hemp	*Musa textilis*	Banana Family *Musaceae*	Small tree	Philippine Islands
Maté	*Ilex paraguensis*	Holly Family *Aquifoliaceae*	Small tree	Paraguay, W. Brazil
Millet (Common)	*Setaria miliacea*	Grass Family *Gramineae*	Annual	Egypt, Arabia
Millet (Italian)	*Setaria italica*	Grass Family *Gramineae*	Annual	China, Japan, Indian Archipelago
Mulberry (Black)	*Morus nigra*	Nettle Family *Urticaceae*	Small tree	Armenia, N. Persia
Mulberry (White)	*Morus alba*	Nettle Family *Urticaceae*	Small tree	India, Mongolia
Mushroom (Common)	*Agaricus campestris*	Mushroom Family *Agaricaceae*	Perennial	Northern Hemisphere
Muskmelon	*Cucumis Melo*	Gourd Family *Cucurbitaceae*	Annual	India, Guinea
Mustard (Black)	*Brassica nigra*	Mustard Family *Cruciferae*	Annual	Eur., N. Afr., W. Asia
Mustard (White)	*Brassica alba*	Mustard Family *Cruciferae*	Annual	Eur., N. Afr., W. Asia
New Zealand Spinach	*Tetragonia expansa*	Carpetweed Family *Aizoaceae*	Annual	New Zealand
Nutmeg	*Myristica fragrans*	Nutmeg Family *Myristicaceae*	Small tree	Molucca Islands
Oats	*Avena sativa*	Grass Family *Gramineae*	Annual	E. Temperate Europe
Ochrus	*Lathyrus ochrus*	Pea Family *Leguminosae*	Annual	Italy, Spain
Oil Palm	*Elaeis guineensis*	Palm Family *Palmaceae*	Tree	Guinea
Okra (Gumbo)	*Hibiscus esculentus*	Mallow Family *Malvaceae*	Annual	Tropical Africa
Olive	*Olea europea*	Olive Family *Oleaceae*	Small tree	Syria, S. Asia Minor
Onion	*Allium Cepa*	Lily Family *Liliaceae*	Biennial	Persia, Afghanistan

Years of Known Cultivation.	Historical Notes.	Economic Importance.
4000	Ancient in India. Introduced into South America (Brazil) about 1750.	Valuable fruit; cultivated in many tropical and subtropical countries, over 150 varieties being grown in India.
500	Cultivation limited to the Philippine Islands, chiefly to Luzon, where it has been long cultivated.	Yields the standard fiber for rope making and cordage. Worn-out rope makes excellent manila paper. Native clothes in Philippines woven from manila fiber. Extensively cultivated and forms one of the chief exports of the Philippines.
1000	Use ancient in Brazil and Paraguay. Cultivation increasing.	Beverage plant. Collection and preparation of leaves important industry in Paraguay and Brazil.
5000	Cultivation prehistoric in S. Europe, Egypt, and Asia. Greatly used by Swiss Lake Dwellers of the Stone Age. Mentioned by Theophrastus and Cato.	Valuable forage plant; much used in Europe, W. Asia, and the United States. Grown in every state and territory; total crop about one half that of red clover or alfalfa, Kansas leading in production.
5000	Cultivation prehistoric in Asia. In China it is sown at a royal ceremony, dating back to 2700 B. C.	In wide cultivation in Europe and Asia as forage and food plant. Important food crop in China and Japan, the latter annually using 35,000,000 bushels for human food. Seeds formerly used for food in Europe, but now chiefly fed to birds.
2000	Mentioned by Greek and Latin authors. Naturalized in Greece, Italy, and Spain. Still much cultivated in Greece.	Much grown fruit in Europe for wine making and preserving; sparingly in the United States.
4000	Ancient cultivation in China in silk culture. Planted in S. Europe since 1540; in the United States since 1830.	Wide cultivation in India, China, and Japan. Bark used in paper making. Leaves form chief food for silkworms.
1000	In cultivation since Middle Ages. The only cryptogamous plant in extensive cultivation.	Extensively grown for market near large cities in Europe and the United States.
2000	Represented in a painting found in Herculaneum. Introduced into China 800. Fruit greatly improved during last 400 years.	Much prized in cultivation in the Old World. Widely cultivated in the United States, ranking fifth in acreage among vegetables. New Jersey leads in production, growing about one seventh of entire crop. Cultivation under irrigation much developed in Colorado. Often called cantaloupe in the markets.
2000	Cultivation ancient in the Mediterranean basin. Naturalized as a weed in the United States.	Cultivated in Europe for mustard oil.
2000	See Black Mustard above.	Cultivated in Europe and sparingly in the United States for salads, for seeds used as a condiment, and for oil.
130	Brought to England by Captain Cook in 1771 and put in cultivation by Sir Joseph Banks. Now sparingly diffused in gardens in Europe and the United States.	Use similar to that of spinach. Valuable in dry countries, but not yet widely known or cultivated.
2000	Ancient cultivation in East Indies. Recently introduced into West Indies and Brazil.	Valued spice plant; in cultivation in the East and West Indies and Brazil. Annual imports to United States exceed $500,000.
3800	Prehistoric in central Europe. Found in lake dwellings of the Bronze Age. Pliny states that the Germans lived on oatmeal Not cultivated by ancient Egyptians or Hebrews. First Chinese record later than 600. Still almost unknown in India.	A cereal of the first order, extensively grown in northern Europe, United States, and Canada. Russia and the United States lead in production. Third in importance among cereals in the United States, ranking next to corn and wheat, exceeding wheat in volume but not in value. Illinois and Iowa leading oat growing states, producing about one third of total crop.
2300	Mentioned by Theophrastus, but cultivation local in S. Europe in both ancient and modern times.	A fodder plant limited in cultivation to S. Europe and Asia Minor; chiefly grown in Spain and Greece.
400	In cultivation by negroes when Guinea was first visited by travelers early in the sixteenth century. Introduced into Brazil and West Indies by slave traders, where it has now become naturalized.	Source of palm oil used for food on west African coasts and exported in large quantities to Europe for candle and soap making. It is particularly valuable in the process of making tin plate.
1500	Anciently grown in tropical Africa. Was in cultivation in Egypt in 1216. Now diffused in tropical countries and in the S. United States.	A generally used food plant most commonly employed in soups in the East and West Indies and also in the southern United States.
4000	Cultivated by ancient Egyptians. Mentioned in Homer's *Iliad* and *Odyssey*, and in the earliest Hebrew books. According to Pliny cultivation began at Rome about 600 B. C.	Important in dry countries. In extensive cultivation in Mediterranean Europe, Syria, south Africa, Australia, and California. Chief products: olive oil, which takes the place of butter in Mediterranean countries, and the dried and pickled fruit, all of which are important commercially. Olive culture in the United States is confined to California.
4000	Cultivated by the ancient Egyptians; also by the Greeks and Romans.	Extensively cultivated throughout the world. Grown in every state in the United States, New York and Ohio leading in production. Bermuda and Spanish varieties now grown in California.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Orange	*Citrus Aurantium*	Orange Family *Aurantiaceae*	Small tree	China, Cochin China
Papaw	*Papaya vulgaris*	Papaya Family *Papayaceae*	Small tree	W. Indies, Cent. Am.
Parsley	*Petroselinum sativum*	Parsley Family *Umbelliferae*	Biennial	S. Europe, Algeria
Parsnip	*Pastinaca sativa*	Parsley Family *Umbelliferae*	Biennial	N. Asia, Central and Southern Europe
Pea (Field)	*Pisum arvense*	Pea Family *Leguminosae*	Annual	Italy
Pea (Flat-podded)	*Lathyrus Cicera*	Pea Family *Leguminosae*	Annual	S. Europe, Algeria
Pea (Garden)	*Pisum sativum*	Pea Family *Leguminosae*	Annual	W. Temperate Asia
Peach	***Amygdalus persica***	Rose Family *Rosaceae*	Small tree	China
Peanut	*Arachis hypogaea*	Pea Family *Leguminosae*	Annual	Brazil
Pear	*Pyrus communis*	Rose Family *Rosaceae*	Tree	Europe, Asia Minor
Pepper (Black)	*Piper nigrum*	Pepper Family *Piperaceae*	Shrub	India
Pepper (Red)	*Capsicum annuum*	Potato Family *Solanaceae*	Annual	Brazil
Peppermint	*Mentha piperita*	Mint Family *Labiatae*	Perennial	Europe
Pineapple	*Ananas sativa*	Bromelia Family *Bromeliaceae*	Perennial	Mex., Cent. America, Colombia
Pistachio Nut	*Pistacia vera*	Sumac Family *Anacardiaceae*	Shrub	Persia, Syria
Plum (Prune)	*Prunus domestica*	Rose Family *Rosaceae*	Small tree	Asia Minor, Persia
Pomegranate	*Punica Granatum*	Myrtle Family *Myrtaceae*	Tree	Persia, Afghanistan

Years of Known Cultivation.	Historical Notes.	Economic Importance.
1500	Cultivation developed in Middle Ages. Unknown to Greeks and Romans. First planted in the United States by Spanish at St. Augustine, Florida, in 1562.	The most important subtropical fruit. Cultivated in India, Japan, East India Islands, Mediterranean countries, Brazil, and Jamaica. In the United States commercial production limited to California and Florida, California leading in production.
1000	Long cultivated in West Indies. Now diffused in all tropical regions.	Valuable fruit. Extensively cultivated in tropical countries; not exported to any extent. The wild papaw, *Asimina triloba*, of the southern United States, is an entirely different plant.
1200	Cultivated by Charlemagne. Introduced into England in 1548.	Widely grown in Europe and the United States as a flavoring plant and for garnishings, but relatively an unimportant vegetable.
2000	Cultivation developed in central and southern Europe during Middle Ages.	Limited cultivation as a winter vegetable in the United States and in Europe, but little used in comparison with the leading vegetables.
2000	Cultivation appears to have begun with the Romans and Greeks. Now widely grown in Europe, North America, and Asia as far east as India.	Valuable for food and forage. Grown on a large scale in Europe for the seeds used for food and to a limited extent for fodder; also much grown in Canada, but cultivation less important in the United States, where it is not as popular for food as the bean.
2000	Long cultivated in southern Europe and diffused by modern cultivation in western Asia.	Esteemed fodder plant, but if seeds are used for food in quantities, becomes dangerous to health. Cultivation mostly in Italy and Spain.
3800	Cultivated by Lake Dwellers of Bronze Age and by ancient Greeks. Mentioned by Theophrastus.	Highly prized garden vegetable. Cultivated in Europe, Asia, and the United States. Chiefly used as green vegetable, but also for fodder. Ranks seventh in acreage among minor vegetables in the United States. Canning green peas has now become an important industry.
4000	Cultivation prehistoric in China. Introduced among Greeks and Romans about 100.	Extensively cultivated in Europe and Asia and second only to the apple as an orchard fruit in the United States. California, Michigan, Georgia, and Texas lead in production.
1000	Ancient cultivation in South America. Found in ancient Peruvian tombs. Introduced into Africa about 1500. Important in the United States since 1866.	Now grown in all warm regions, and in the last 40 years has become important crop in the United States. Yield, about 12,000,000 bushels, of which Virginia, North Carolina, Georgia, and Alabama produce three fourths, ranking in order named. In this country crop is largely eaten as roasted peanuts, but in Europe quantities of peanut oil are produced.
4000	Prehistorically cultivated by Lake Dwellers of Bronze Age. Mentioned by Homer, Theophrastus, and Pliny.	Wide cultivation in temperate regions, but chiefly in France and the United States. Ranks fourth among American orchard fruits, being preceded by the apple, peach, and plum. Chiefly grown in California, New York, and Michigan.
2300	Long cultivated. Used as a medicine by Hippocrates 400 B. C. In Middle Ages was one of the most prized and costly spices.	The most commonly and widely used spice. Extensively cultivated in East and West Indies, Siam, and Malay Peninsula, whence millions of pounds are exported.
500	Early cultivation in the West Indies. Introduced into Europe in sixteenth century.	Also known as cayenne pepper or chili. Much grown in tropical Africa and America, but less generally used than black pepper.
150	Commercial cultivation for oil began in Surrey, England, about 1750. Now extended to the United States. Also cultivated in Japan.	Essential oil very widely used in flavoring, in making menthol, and in medicine. Grown in England and Japan, but chiefly in the United States, about one half of the commercial crop being produced in Michigan, mostly in St. Joseph county. Japan's crop is next in importance and is largely used in making menthol.
500	In cultivation at time of Spanish discovery in tropical America. Introduced in sixteenth century into India and Guinea; recently into Florida, California, and Hawaii.	Highly prized and increasingly popular subtropical fruit until recently important in greenhouse cultivation in Europe, but culture under glass now relatively unimportant, the markets being supplied from increasing outdoor plantations in the Azores, northern Africa, Queensland, Bahamas, West Indies, and Florida, the latter cultivating upwards of 14,000,000 plants. Sparingly grown in California and Hawaii.
1900	Long cultivated in western Asia. Introduced into Italy about 30.	Nut highly prized for flavoring and for oil. Cultivated in S. Europe and N. Africa.
2000	Extensively cultivated by the Romans. Mentioned by Pliny. The prune is a variety that produces fruit containing a high percentage of sugar, which can be dried without removing the skins or stones.	Extensive cultivation throughout temperate regions. Third most important orchard fruit in the United States, exceeding 8,000,000 bushels, California growing two thirds. All prunes produced in the United States grown in the Pacific States; first prune orchard planted at San José, California, in 1870. Many eastern plums are cultivated varieties of the native species, ***Prunus americana.***
4000	Cultivated throughout historic time. Represented in ancient Assyrian and Egyptian sculptures. Introduced into China 150 B. C. Cultivated in the United States in Florida and California.	Widely cultivated and highly prized fruit in S. Europe, N. Africa, and India; sparingly grown in Florida and California.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Poppy	*Papaver somniferum*	Poppy Family *Papaveraceae*	Annual	Mediterranean basin
Potato	*Solanum tuberosum*	Potato Family *Solanaceae*	Perennial	Mountains of Tropical America, Chile to Mexico
Prickly Pear	*Opuntia Ficus-indica*	Cactus Family *Cactaceae*	Small tree	Mexico
Pumpkin	*Cucurbita Pepo*	Gourd Family *Cucurbitaceae*	Annual	Temp. N. America
Purslane	*Portulaca oleracea*	Purslane Family *Portulacaceae*	Annual	Central and W. Asia, Greece
Quince	*Cydonia vulgaris*	Rose Family *Rosaceae*	Small tree	Persia, Asia Minor
Quinoa	*Chenopodium Quinoa*	Goosefoot Family *Chenopodiaceae*	Annual	Colombia, Peru
Radish	*Raphanus sativus*	Mustard Family *Cruciferae*	Annual	Temperate Asia
Rape	*Brassica Napus*	Mustard Family *Cruciferae*	Biennial	Europe
Raspberry (Black)	*Rubus occidentalis*	Rose Family *Rosaceae*	Small shrub	Eastern U. S., Canada
Raspberry (Red)	*Rubus idaeus*	Rose Family *Rosaceae*	Shrub	Temp. Europe, Asia
Rhubarb	*Rheum Rhaponticum*	Buckwheat Family *Polygonaceae*	Perennial	China
Rice	*Oryza sativa*	Grass Family *Gramineae*	Annual	India
Rye	*Secale cereale*	Grass Family *Gramineae*	Annual	Eastern Temperate Europe, north of the Danube
Safflower (see Carthamine)				

Years of Known Cultivation.	Historical Notes.	Economic Importance.
3000	Known to the Lake Dwellers. Used by Greeks and Romans. Mentioned by Homer.	Source of opium, which is the most important drug in commerce, and of poppy oil. Much cultivated, the Ganges region of India leading in production, but largely grown in China, Asiatic Turkey, and Egypt. Opium consumption greatest in China and Burma. Used in the United States and Europe chiefly in manufacture of morphine and codeine.
2000	Cultivation ancient in Peru. Widely diffused from Chile to Colombia at time of Spanish discovery but no evidences of culture in Mexico or by North American Indians. Introduced into what is now North Carolina and Virginia late in the sixteenth century. Brought to Europe first by the Spaniards early in the sixteenth century and to England by Sir Walter Raleigh in 1585.	Stands second only to corn as the most important contribution of America to the food plants of the world. Preëminently the most important vegetable grown in Europe and America. World crop enormous, exceeding 5,000,000,000 bushels; in bulk surpassing by about one half the world crop of wheat, corn, or oats. Germany, Russia, Austria-Hungary, France, the United States, and Great Britain chief producers in order named. Germany grows one third of the world crop, Russia one fifth. In the United States grown in every state and territory, also in Hawaii and Alaska.
500	Cultivated in Mexico before the Spanish conquest. One of first American plants taken to Old World. Introduced into S. Europe, Asia, and Africa. Now widely naturalized.	Grown for fruit in Mediterranean countries and Southwest Asia. Also used as hedge plant and as food plant for cochineal insect. The tuña, a closely related, perhaps identical, species, is highly valued for fruit in Mexico.
500	Cultivated by Indians at time of earliest discoveries in the United States.	Formerly much grown for table use in the United States, but now largely supplanted by improved varieties of squash. Still extensively planted, most frequently in corn fields, for stock feeding.
4000	Diffused in cultivation throughout the world since earliest times. Now extensively naturalized in the United States.	Cultivated as a pot herb in Europe. Is a common garden weed in the United States. Rarely used as a vegetable, though frequently fed to animals, particularly to pigs.
4000	Cultivation very ancient in W. Asia and in Greece. Mentioned by Plutarch and Pliny.	A minor orchard fruit not extensively grown though frequently used for flavoring, preserving, and jellies in Europe and the United States. Largest American orchards are in western New York.
1000	Extensive ancient cultivation in the Andean plateau, Colombia to Chile. Was staple food for natives of this region at date of Spanish conquest.	Meal made from seeds chief food of people inhabiting the high plateaus of Colombia, Peru, and Chile.
3000	Cultivated in gardens from China to Europe since ancient times. Mentioned in Chinese records 1100 B. C.	Cultivated in all temperate regions. Very common in gardens and universally used as table vegetable in the United States.
4000	Prehistoric cultivation in Europe.	Widely grown in Europe for oil from the seeds, for green manuring, and as green fodder for sheep. Sparingly grown in the United States for stock food.
75	Cultivation began in the United States in 1832. Now general in Eastern States.	Cultivated only in North America. The leading bush fruit of the United States and second only to the strawberry among small fruits. New York, Michigan, Ohio, and Pennsylvania, ranking in the order named, grow over one half of the total crop, which exceeds 75,000,000 quarts.
1000	Long and widely cultivated in northern Europe; sparingly in the United States.	Extensively cultivated in Europe. Both this species and a cultivated variety of the wild red raspberry (*Rubus idaeus* var. *aculeatissimus*) are widely grown in the United States, but production is small compared to that of the black raspberry.
2000	In Europe long grown as vegetable, foliage plant, and for medicinal properties of the root.	Generally grown in the United States as an early green vegetable. Cultivation, relatively, of minor importance.
5000	Mentioned in Chinese records dating back to 2800 B. C. Cultivation in S. United States began before 1700.	Grown in immense quantities in China, Japan, and India, where it is the chief food, sustaining about one third of the human race; also grown in considerable quantities in S. Europe, Egypt, and the United States. Cultivation in the United States began in Georgia and the Carolinas in 1700. Louisiana now grows three fifths of the crop, South Carolina, Hawaii, and Georgia following in the order named.
2000	Least ancient of Old World cereals. Unknown to the ancient Greeks, but mentioned by Pliny. Cultivation probably did not antedate the Christian Era in Roman countries, but may have been more ancient in Russia and Thrace.	Fifth in importance among the great cereals; outranked only by wheat, corn, rice, and oats. Russia produces about one half of the world crop, Germany second, Austria third, altogether some seven eighths of the world crop. A leading food stuff in northern Europe; is made into "black bread." Unimportant crop in the United States, comprising in value only one per cent. of our cereals.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Saffron	*Crocus sativus*	Iris Family *Iridaceae*	Perennial	Asia Minor, Greece, Italy
Sainfoin	*Onobrychis sativa*	Pea Family *Leguminosae*	Perennial	Temp. Eur., W. Asia south of Caspian Sea
Sapodilla	*Achras Sapota*	Sapodilla Family *Sapotaceae*	Tree	Cent. Am., W. Indies
Sea Kale	*Crambe maritima*	Mustard Family *Cruciferae*	Perennial	Western Europe
Sesame	*Sesamum indicum*	Bignonia Family *Bignoniaceae*	Annual	Sunda Islands
Sisal Hemp	*Agave sisalina*	Amaryllis Family *Amaryllidaceae*	Small tree	Mexico, Central Am.
Sorghum Cane	*Sorghum saccharatum*	Grass Family *Gramineae*	Annual	Tropical Africa
Spinach	*Spinacia oleracea*	Goosefoot Family *Chenopodiaceae*	Annual	Persia
Strawberry (American)	*Fragraria virginiana*	Rose Family *Rosaceae*	Perennial	N. E. U. S., Canada
Strawberry (Chilean)	*Fragraria chilensis*	Rose Family *Rosaceae*	Perennial	Chile, California
Strawberry (European)	*Fragraria vesca.*	Rose Family *Rosaceae*	Perennial	Temp. Eur., W. Asia, E. North America
Sugar Cane	*Saccharum officinarum*	Grass Family *Gramineae*	Annual	East Indies
Sumac	*Rhus Coriaria*	Sumac Family *Anacardiaceae*	Small tree	Mediterranean basin. Southwest Asia
Sunflower	*Helianthus annuus*	Sunflower Family *Compositae*	Annual	West Central U. S.
Sweet Potato	*Ipomaea Batatas*	Convolvulus Family *Convolvulaceae*	Perennial	Trop. Am., E. Ind. (?)

Years of Known Cultivation.	Historical Notes.	Economic Importance.
4000	Cultivation remotely ancient in W. Asia.	The dried flower parts furnish a dye widely used in coloring and flavoring confectionery. Now most extensively cultivated in Spain.
500	Cultivation appears to have begun in France about 1400.	Much cultivated in Europe for pasturage and hay. Almost unknown in the United States.
500	Cultivation antedates Spanish discovery in tropical America. Since much diffused in tropical regions of India and East India Islands.	Sub-acid fruit much used for desserts in West Indies and other tropical countries where it is cultivated.
200	Cultivation developed in Europe in the eighteenth century.	Blanched sprouts, similar to asparagus, highly prized in England, where it is a widely grown vegetable. Cultivation limited elsewhere.
4000	Cultivation very ancient in Sunda Islands. Introduced into India about 1000 B. C.; Egypt, about 500 B. C.; in Brazil before 1650.	Seeds used for food and yield oil used similarly to olive oil as a food and cosmetic. Much cultivated in tropical and subtropical countries of the Old World, particularly in India, China, Japan, Egypt, and Central Africa.
500	Long cultivated to limited extent in Mexico and Central America. Greatly increased in Yucatan during last 25 years.	Valuable coarse fiber plant. Cultivation an important industry in Mexico, particularly in Yucatan, and in Central America; greatly increased in recent years by extensive use of fiber in making binding twine for American harvesting machines.
4700	Anciently cultivated in Egypt, India, and China. Many varieties now grown throughout the world.	Extensively grown throughout the world, especially in China, India, Egypt, and central Africa, for seeds, syrup, and fodder. Long cultivation has developed several important varieties. These are the non-saccharine, embracing Kafir corn, dourra, rice corn, Jerusalem corn, and broom corn, grown for the seeds and fodder; and the saccharine, embracing the well-known sorghum canes, grown for syrup and fodder. Sorghum cane, broom corn, and Kafir corn are extensively grown in the United States. Syrup production reached maximum about 1880; has rapidly declined owing to introduction of glucose syrups made from corn. Tennessee, Kentucky, Missouri, and Arkansas lead in syrup production. Fodder production increasing notably in Kansas, Oklahoma, and semi-arid districts. (See *Broom Corn and Kafir Corn.*)
2000	Cultivation ancient in W. Asia. Brought into China by Chang-kien about 150 B. C. Introduced into Europe in fifteenth century.	Cultivated in Europe and America for young leaves used as greens. In wide use as a minor vegetable.
300	Introduced into England in 1629. The principal strawberry grown in the United States, where culture became important with introduction of Hovey's strawberry in 1834.	Most important small fruit of the United States; grown in every state and territory; annual yield upwards of 250,000,000 quarts, Maryland, Michigan, Ohio, New York, Tennessee, New Jersey, Illinois, and Missouri leading in production.
300	Introduced into France from Chile in 1715. Now much crossed with the American and the European strawberry in cultivation.	Pure species not much cultivated, but valuable crosses with the other cultivated species are in extensive cultivation in Europe and America. Grows wild west of the Cordilleras in Chile, also in California.
500	Cultivation began in fifteenth century. Now much crossed with preceding, forming new varieties.	Widely grown in gardens in England and N. Europe.
2000	Brought to Europe by Crusaders. Introduced into Brazil, Mexico, and West Indies, 1500-1550.	Until within 50 years the chief source of sugar, but now second to the sugar beet. In cultivation throughout tropical regions. Grown extensively in East and West Indies, Hawaii, Brazil, Argentina, Peru, Mexico, and Louisiana. Cuba, Java, Hawaii, and Louisiana lead in production, growing over one half of the world crop of cane sugar.
500	Cultivated in Spain, Italy, and Sicily for the leaves, which are used in tanning.	Leaves valuable in tanning, subserving the same use as tan bark. Cultivation increasing in southern Europe, particularly in Sicily. The leaves of wild American sumacs have been gathered for export in considerable quantities, particularly in Virginia.
500	In cultivation by the Indians, who used seeds for food and hair oil, at period of early discoveries. Introduced into Europe about 1550. Mentioned by Champlain in his travels, 1610.	Grown in Egypt, India, and particularly in southern Russia for seeds, yielding a valuable oil. Seeds fed to poultry, the seed cake to stock. Sparingly cultivated in the United States, except for ornament, although Illinois, Iowa, Indiana, and Arizona report small crops of seeds.
2000	Widely cultivated in tropical countries. Ancient in China and antedating Spanish discovery in West Indies.	Most important vegetable in tropical and subtropical countries, where it is extensively cultivated. Second only to the potato in the United States; widely grown in the South, Georgia, North Carolina, Alabama, South Carolina, and Tennessee producing over half of the total crop, which in acreage and value is about one fifth that of the potato.

Common Name.	Scientific Name.	Plant Family.	Character.	Origin.
Taro	*Colocasia antiquorum*	Arum Family *Araceae*	Perennial	India, Polynesia
Tea	*Thea sinensis*	Camellia Family *Ternstroemiaceae*	Shrub	China, Assam, Manchuria
Timothy Grass	*Phleum pratense*	Grass Family *Gramineae*	Perennial	Europe
Tobacco	*Nicotiana Tabacum*	Potato Family *Solanaceae*	Annual	Ecuador, Peru, Colombia
Tomato	*Lycopersicum esculentum*	Potato Family *Solanaceae*	Annual	Peru
Turnip	*Brassica Rapa*	Mustard Family *Cruciferae*	Biennial	Europe
Vetch	*Vicia sativa*	Pea Family *Leguminosae*	Annual	Europe, Algeria
Watermelon	*Citrullus vulgaris*	Gourd Family *Cucurbitaceae*	Annual	Tropical Africa
Wheat	*Triticum vulgare*	Grass Family *Gramineae*	Annual	Euphrates region, Asia
Yam	*Dioscorea alata*	Yam Family *Dioscoreaceae*	Perennial	Tropical Africa, Pacific Islands

Introduced Plants. A well populated region, where agriculture is extensive, contains in addition to the surviving native plants, a large number which have been introduced in various ways from other parts of the world. The ships of modern commerce have taken the rat and the cockroach to every seaport, and likewise have transported many plants which have become established in the vegetation of new regions. An introduced plant which maintains itself permanently is said to be naturalized; if it survives only temporarily and locally it is called adventitious. Colonization and trade have diffused hundreds of the plants of Europe in other continents. In turn, Europe has received many foreign plants, and there is a continuous interchange between various regions of the world. Nearly all these widely distributed plants are herbs,—a large number being the field, garden, and wayside weeds that accompany agriculture everywhere. The number of introduced shrubs and trees which have become thoroughly naturalized is small. Some plants, like the English sparrow and European rabbit among animals, have become pestiferous after gaining a foothold in a new region, such as the Canada thistle, Russian thistle, and other troublesome weeds.

In that portion of the United States and Canada lying east of the northwest corner of Minnesota and extending south to Kansas and Tennessee, containing three fifths of the population and the most extensive agriculture of North America, about 4,000 species of flowering plants are found. Of these, 666, or almost exactly one sixth, are naturalized plants, mostly introduced from Europe, although many other regions have contributed. Consequently, the flora of this area has been enriched by the addition of one foreign to each five native species. No other region in North America contains so large a

Years of Known Cultivation.	Historical Notes.	Economic Importance.
2000	Cultivation ancient in Polynesia. Reached China before 100 B. C. and long cultivated in India and Egypt. Mentioned by Pliny.	A leading food plant in the Pacific Islands, where it is widely cultivated. The starchy root is made into bread or poi.
4600	Mentioned in Chinese records dating 2700 B. C. Extensively grown in India since 1870. Experimentally grown in the southern United States.	Tea and coffee stand first among the world's beverage plants. Dried leaves produced in immense quantities for ages by cultivation in China and Japan. Cultivation becoming very extensive in India and Ceylon. Exports from India now exceed, and those from Ceylon almost equal, the export of China. Great Britain, Russia, and the United States chief consuming nations, England using about seven times as much tea as the United States, while the proportions are reversed in the consumption of coffee.
190 In U. S.	Named for Timothy Hanson, who introduced the seed in the Carolinas about 1720.	Most valuable cultivated grass in the United States; constitutes a large part of the hay crop in the North Central and Northeastern States.
2000	Almost universally used by Indians of North and South America since ancient times. Tobacco pipes abundant in Aztec tombs, also found among remains of the Mound Builders. Introduced into Europe by Oviedo about 1520. Cultivated by first colonists in Virginia.	Cultivation greatly diffused since Spanish discovery. The United States is the leading grower, production about equaling the total crop of Europe, which is mostly grown in Austria, Russia, Germany, and France. Cultivation, which began at first settlement of Jamestown, became great factor in growth of Virginia and Maryland. Kentucky, North Carolina, Virginia, Ohio, Tennessee, Wisconsin, Pennsylvania, and Connecticut lead in production. Cigars first made at South Windsor, Conn., in 1801; became commercially important after 1850. Use of tobacco now widespread among Oriental nations.
500	Cultivated in Peru at time of Spanish discovery. Formerly called "Love Apple" and considered poisonous, but during last century cultivation has become extensive in all temperate climates.	Highly prized and increasingly popular vegetable. Cultivation greatly enlarged in recent years by growth of the canning industry and locally is of much importance. Exceeded in acreage only by the watermelon and sweet corn among the minor vegetables. Crop exceeds 30,000,000 bushels, nearly half of which is grown in Maryland and New Jersey.
4000	Prehistoric in Europe, but not known to ancient Egyptians, Hebrews, or Chinese.	Much grown in England, northern Europe, and Canada for stock food. Widely, but sparingly, cultivated in the United States. Used extensively as table vegetable.
2000	In cultivation by the Romans at the time of Cato.	Valuable for seed and forage. Much cultivated in Europe, but rarely and not very successfully in the United States.
4000	Very anciently cultivated by Egyptians. Most extensive cultivation in the United States is in the Southern States; in Europe, in southern Russia.	The most popular melon in cultivation. Extensively grown in warm climates throughout the world, but most abundantly in S. Russia and the S. United States. Leads all minor vegetables in acreage, being surpassed only by the major vegetables potato and sweet potato. Texas, Georgia, North Carolina, and Missouri chief growers in the order named.
5000	Cultivation prehistoric in Asia. Grown by the Lake Dwellers, ancient Egyptians, and by the Chinese as early as 2700 B. C. Like maize, wheat is unknown in a wild state. Origin not established with certainty, but weight of evidence indicates the Euphrates region.	The most highly prized cereal in cultivation; the bread plant *par excellence* of western civilization. The world crop surpasses in value and commercial importance all other cereals, though the total yield in bushels is nearly the same as that of corn, oats, and rye. The leading wheat growing countries are the United States and Canada, Russia, France, India, Austria, Italy, Germany, and Argentina.
2000	Long cultivation in East Indies and Pacific islands. Now spread to many tropical countries.	The farinaceous roots, resembling but inferior to the sweet potato, are an important article of food in tropical Asia, Africa, and America, where it is much cultivated.

proportion of introduced plants. Of the naturalized plants, 89 are Compositae, including such common plants as the burdock, mayweed, ox-eye daisy, several thistles, and the dandelion; 66 are grasses, including foxtail grass, canary grass, beard grass, goose grass, darnel, cheat, and crab grass; 46 belong to the mustard family, containing peppergrass, shepherd's purse, mustards, and various cresses; 42 belong to the mint family, including hoarhound, motherwort, ground ivy, catnip, thyme, and various mints; 37 belong to the pulse or pea family, containing several clovers, sweet clovers, vetches, and vetchlings. A number of poisonous plants are included, among them celandine, foxglove, hellebore, henbane, jimson weed, and poison hemlock.

About four fifths of these introduced plants belong to twenty leading plant families, and this same group of families contains about two thirds of the native plants.

Native and Introduced Flowering Plants.

Northeastern United States and Canada.

Plant Family.	Native.	Introduced.	Total.
Borage Family	23	16	39
Buckwheat Family	43	14	57
Composite Family	430	89	519
Crowfoot Family	78	15	93
Ev'g Primrose Family	48	2	50
Figwort Family	86	29	115
Goosefoot Family	23	13	36
Grass Family	312	66	378
Heath Family	78	1	79
Lily Family	80	7	87
Mint Family	77	42	119
Mustard Family	56	46	102
Nightshade Family	19	14	33
Orchis Family	68	..	68
Parsley Family	57	20	77
Pea Family	145	37	182
Pink Family	37	33	70
Rose Family	183	33	216
Sedge Family	322	11	333
Violet Family	43	3	46
126 other families	1,090	175	1,265
Total	3,298	666	3,964

ANIMAL KINGDOM.

Table of the Principal Groups of Animals.

Protozoa
The simplest animals
- Rhizopoda
  - Foraminifera.
  - Radiolaria.
- Flagellata.
- Infusoria.
- Gregarina.

Coelenterata
Sponges, corals, and jellyfishes
- Porifera
  - Spongiæ
    - Calcareous sponges.
    - Siliceous sponges.
- Cnidaria
  - Anthozoa, coral polyps.
  - Hydrozoa, hydroids and medusæ.

Echinodermata
Crinoids, starfishes, and sea urchins
- Pelmatozoa
  - Cystoidea, cystids.
  - Crinoidea, stone lilies.
  - Blastoidea, blastids.
- Asterozoa
  - Ophiuroidea, brittle-stars.
  - Asterioidea, starfishes.
- Echinozoa
  - Echinoidea, sea urchins.
  - Holothuroidea, sea cucumbers.

Vermes
Worms
- Platyhelminthes.
- Rotifera.
- Nemathelminthes.
- Gephyrea.
- Annelida, sea worms.

Molluscoidea
Mollusk-like forms
- Bryozoa, sea mosses.
- Brachiopoda, lamp shells.

Mollusca
Mollusks
- Pelecypoda, lamellibranchs, bivalves.
- Scaphopoda, tusk-shells.
- Amphineura, chiton.
- Gastropoda, univalves, snails.
- Cephalopoda, nautilus, cuttlefish.

Arthropoda
Articulates
- Branchiata
  - Crustacea
    - Trilobita, trilobites.
    - Gigantostraca, horseshoe crabs.
    - Entomostraca, ostracoids, barnacles.
    - Malacostraca, lobsters, crabs.
- Tracheata
  - Myriopoda, centipeds.
  - Arachnoidea, spiders, scorpions.
  - Insecta, insects.

Vertebrata
- Cyclostomata, lampreys.
- Pisces, Fishes
  - Selachii, sharks.
  - Holocephali, spook fishes.
  - Dipnoi, lungfishes.
  - Teleostomi, ganoids and teleosts, the common fishes.
- Amphibia, amphibians, batrachians.
- Reptilia, reptiles.
- Aves, birds.
- Mammalia or Mammals
  - Prototheria, monotremes
  - Metatheria, marsupials.
  - Eutheria, placentals.

ZOOLOGY.

Zoölogy is the science of animal life. The study and knowledge of animals from different points of view give rise to special divisions of zoölogy. The study of their gross structure is Anatomy; of the form and origin of organs, Morphology; of the functions of organs, Physiology; of minute structure, Histology; of cell structure and development, Cytology; of classification, Taxonomy or Systematic Zoölogy; of extinct animals, Paleontology; of animals in relation to man, Economic Zoölogy. The study of certain groups of animals has been given special names: of mammals, Mammalogy; of birds, Ornithology; of reptiles, Herpetology; of fishes, Ichthyology; of insects, Entomology, etc.

Systematic Zoology or **Taxonomy** treats of the classification or orderly arrangement of animals according to their natural relationships. The animal kingdom is divided into great primary divisions called Branches or Phyla.

Branches are divided into Classes.
Classes are divided into Orders.
Orders are divided into Families.
Families are divided into Genera.
Genera are divided into Species.
Species are divided into Individuals.

Nomenclature is the naming of animals and the groups to which they belong so as to make the character of the animal and its place in nature clearly understood. Scientific nomenclature is concerned with the technical names uniformly used by scientists of all nations. The scientific name of an animal consists of two Latinized words. The first, the name of the genus, or the generic name, always begins with a capital letter; the second, the word denoting the species, or the specific name, is usually in the form of a Latin adjective, and begins with a small letter. For example: the scientific name of the puma, also called cougar, panther, and mountain lion, is *Felis concolor*—*Felis* being the Latin name of the cat, and *concolor*, a Latin adjective signifying uniform color. While this animal has many popular names in several languages, its name in scientific language is the same throughout the world. The further classification of the puma is as follows:—

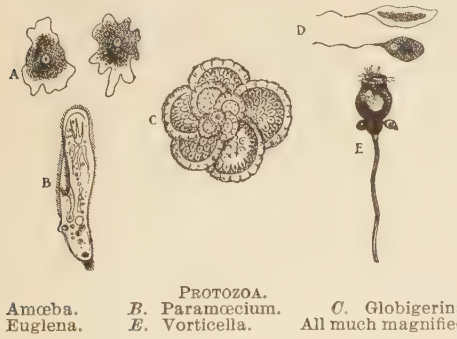
Branch: *Vertebrata*, Backboned animals.
Class: *Mammalia*, Mammals.
Order: *Carnivora*, Flesh-eaters.
Family: *Felidae*, Cat tribe.
Genus: *Felis*, True cats.
Species: *concolor*, uniformly colored.

A genus may contain many species or only one. There are **numerous** living species of

Felis, among which are the lion, *F. leo;* the tiger, *F. tigris;* the leopard, *F. pardalis;* and the jaguar, *F. onca*, but only one living species of giraffe, *Giraffa camelopardalis*. Likewise a family may consist of one or many genera, an order of one or many families, a class of one or several orders, and a branch of one or several classes.

Just as the buffalo is now disappearing, and as many species, such as the great auk, dodo, and quagga, have become extinct very recently, likewise not only an immense array of species, but whole genera, families, and orders of animals have perished in geologic times. A complete classification would include all of these. To approximate it is the vast task of paleontologists, who have already determined the relationships of thousands of fossil species. In general, the following outlines and descriptions take into account only living animals, and the classifications given are those usually followed by students of existent groups:—

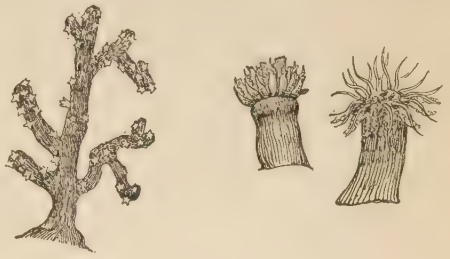
Protozoa.—The lowest forms of animal life. They are all one-celled animals, and are usually of microscopic size. They move with a gliding motion, are constantly changing form, and have no organs or true tissues. Food is absorbed at all points of the surface, and is digested in all parts of the interior. The animals reproduce by self-division, one animal breaking up into two or more; or they multiply by spores or germs. The Rhizopoda (*ῥίζα, rhiza*, root, and *πούς pous*, foot), are the lowest class of Protozoa. They all have projections from the protoplasm, called pseudopodia. These projections are used both for locomotion and for taking food. The lower rhizopods have no shell or no constant shape. The only internal resemblance to organs are vacuoles. The rhizopods are grouped in two orders: the Foraminifera and the Radiolaria. The Foraminifera (*foramen*, a hole, and *ferre*, to bear) are distinguished by the form of their pseudopodia, which are long, and connected with one another in a beautiful network of protoplasm. They have also a shell or "test" of calcium carbonate or silica, or made up of particles of sand, mud, sponge spicules, or other foreign matter glued together. The shells may be perforate or imperforate. The perforations, when present permit the pseudopodia to pass through. There are also one or more general openings in the shell to permit the body to come in contact with the surrounding water, from which food is drawn. They vary in size from microscopic up to one inch in diameter (the Nummulites). Though the shells are minute they have contributed to the building up of great deposits on the bed of the ocean, and have been important limestone builders in the past. There are four important families of Foraminifera: Gromidæ, Miliolidæ, Globigerinidæ, and Nummulinidæ. Radiolaria, the second and higher group of rhizopodous Protozoa, are divided into 85 known families, comprising many thousands of species. They are distinguished from other Protozoa by complex and beautiful shells of silicon, and a peculiar membranous inner capsule. They supply food to countless minute crustaceans, which in turn feed fishes.



PROTOZOA.

A. Amœba. *B*. Paramœcium. *C*. Globigerina.
D. Euglena. *E*. Vorticella. All much magnified.

Coelenterata. This branch of the animal kingdom consists of the simplest groups of the many-celled animals or Metozoa, as distinguished from the one-celled animals or Protozoa. It includes two main groups, the Porifera, pore-bearing animals or sponges, and the Cnidaria, animals armed with stinging cells, corals, sea anemones, and hydroids. Some zoölogists consider the Porifera a distinct branch ranking between the Protozoa and the Cnidaria, which alone are regarded as the true Coelenterates. Sponges are usually attached like plants to rocks or similar substances and increase in size by a regular process of growth. The Cnidaria comprise the Anthozoa, or coral-polyps, and the Hydrozoa, or hydroids and medusae. The Anthozoa contain the sea anemones and all of the corals except the millepores. The name, Anthozoa, means flower animals in allusion to the arrangement of the rayed tentacles about the mouth in a form which suggests a composite flower. These tentacles vary in number from two to several hundred and are armed with batteries of tinging cells (*cnidae*). Sea anemones and most Cnidaria are gorgeously colored. The Hydrozoa (*ὕδωρ, hudor*, water, and *ζῳον, zoon*, animal) comprise the hydroids and medusae. The hydroids are noted for their delicacy and beauty. They live in communities or colonies; one group feeds the colony, another protects it, and a third is devoted to reproduction.

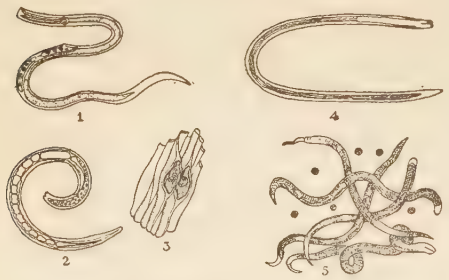


Red Coral. COELENTERATES. Sea Anemones.

Echinodermata (*ἐχῖνος, echinos*, a hedgehog, and *δέρμα, derma*, the skin) are the highest group of radiate animals. They have a tough external covering, ranging from a leathery skin to a well-defined calcareous test. The radiating parts are usually five in number. Echinodermata are provided with a mouth, alimentary canal, and a digestive system. They move about by means of the tube-like feet with a sucking disc at the end by which they cling to rocks and draw themselves about. They are divided into three classes: the Pelmatozoa, the Asterozoa, and the Echinozoa. Pelmatozoa are with few exceptions

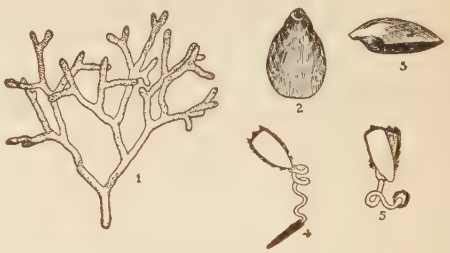
fixed to their dwelling places by stalks. They include the Cystoidea or cystids, the Crinoidea or stone-lilies, and the Blastoidea or blastids. The Cystoidea or cystids, and the Blastoidea or blastids, now extinct, were abundant in Paleozoic times. The Crinoidea or crinoids are flower-like in form. About 300 living species called sea lilies, and over 2,000 fossil species, called stone lilies, are known. The Asterozoa include the Ophiuroidea and the Asteroidea. The Ophiuroidea comprise the class of brittle stars or sand stars. They have a small, flat, roundish disc from which issue suddenly five slender, cylindrical arms. About 600 species are known. The Asteroidea are starfish. The body is five-sided and covered with short, small spines. The Echinozoa include the Echinoidea and the Holothuroidea. The Echinoidea include the sea urchins, cake urchins, sand dollars, and the heart urchins. The sea urchin has a spherical, heart-shaped or disc-shaped body covered with movable spines. The sand dollars have flat round bodies. The Holothuroidea are known as sea cucumbers, sea squirts, and sea slugs. The body is soft, worm-like in shape, and the mouth is surrounded by a circle of tentacles.

Vermes or Worms.—The animals in this group present so many differences of structure and habit that it is difficult to give in general terms a group of characteristics which will apply to all of this class. They have elongated bodies, no internal skeleton; both sides of a line drawn through the animal lengthwise are alike, and there are distinct dorsal and lateral sec-



NEMATHELMINTHINE WORMS.
1. Vinegar Eel (*Leptodera oxophila*). 2. Trichina (*T. spiralis*). 3. Trichina encysted in muscle fibers. 4. Wheat worm or Smut worm (*Anguillula tritici*). 5. Human-blood Filaria (*F. sanguis-hominis*). All much magnified.

tions. Nearly all have bodies composed of segments which are nearly alike. Almost all have powers of locomotion; they crawl; have not jointed or articulate legs, but fleshy, unjointed legs, or spines, or suckers, or bristles. Some are aquatic, some terrestrial, and some live as parasites in or on other animals. They are grouped as Platyhelminthes, Rotifera, Nemathelminthes, Gephyrea, and Annelida. The Platyhelminthes (*πλατύς, platys*, broad, and *ἕλμινς, helmins*, worm), or flatworms, have no body cavity or blood system. The body is flat and often thin and leaf-like or ribbon-like. The fluke worm or fluke infesting the livers of ruminants, causing the destructive disease known as rot in sheep, and the tapeworms parasitic in the human body and in other animals, are well-known examples. The Rotifera (*rota*, a wheel, and *ferre*, to bear) or "wheel animalcules," are minute, often microscopic, and include the smallest of the many-celled animals. The Nemathelminthes (*νῆμα, nema*, a thread, and *ἕλμινς, helmins*, a worm) are worms which do not occur in segmented form, have long, cylindrical bodies, and are known as "round worms." The skin is strong and often wrinkled. They are not known to possess any organs of special sense, except that of touch. All are parasitic except the marine forms and the paste and vinegar eels. The ascaris or roundworm and the pinworm (*Oxyurus vermiculatus*) infest the human intestines, and trichinæ, minute worms living in the muscles of the pig, when introduced into the human system cause the disease known as trichiniasis or trichinosis. The Gephyrea include many marine worms, once classed with the echinoderms as Apoda and Apedicellata. The Annelida or Annulata (*annulusa*, a little ring) are composed of many segments or rings, have a head, and are covered with bristles or hairs which assist locomotion; the blood is generally red, but often green or yellow; they breathe by gills which, in some cases, open into the alimentary canal.



MOLLUSCOID...A.
1. The Bryozoan Myriozoum. 2, 3. The Brachiopod Terebratulina, or Lamp-shell. 4, 5. The Brachiopod Lingula.

Molluscoidea. These are mollusk-like forms and include the Bryozoa or sea mosses and the Brachiopoda or lamp shells. The Bryozoa are minute marine animals growing in moss-like or coral-like colonies and secreting a calcareous zoarium. Each individual or zooid of the colony occupies a cell-like zoœcium. The mouth of each zooid is surrounded by a ring of tentacles known as the lophophore. There is no heart or circulating system; multiplication is by budding. English authorities call the group Polyzoa, but American authorities use the older term, Bryozoa. The Brachiopoda (*βραχίων, brachion*, arm, and *πούς, pous*, foot) have unequivalvate and equilateral bivalve shells. They have no organs of special sense; food, consisting of a number of floating organisms, is brought to the mouth by currents of water induced by the vibrations of cilia upon the two long spiral arms at the sides of the mouth, which also assist in respiration. Brachiopods adhere to solid bodies by a pedicel or by one of the valves of the shell. More than 4,000 species are known, of which 95 per cent. are extinct and known only in the fossil state.

Mollusca. The mollusks include the fresh-water mussels, clams, oysters, snails, slugs, cuttlefishes, squids, octopi, and all of the shellfish which have a one-valved shell. Instead of an internal bony skeleton, mollusks have a shell which both supports the soft tissues and pro-

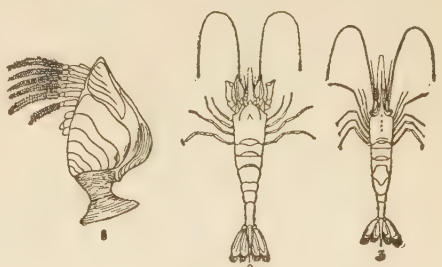
tects the delicate parts. The parts of a mollusk are the head, the trunk, a foot or muscular organ by which the animal moves about and burrows, and a mantle or tunic which enfolds the body and out of which the growth of the shell is produced. Shells are of two pieces, the bearers of which are called bivalves; or of one piece, univalves. Both land and water forms are known, but the latter are by far the more numerous. They feed on vegetable and animal matter. The order is divided into Pelecypoda (lamellibranchs and bivalves), Scaphopoda

Quahog Clam. Venus mercenaria. MOLLUSKS. Common Mussel. Mytilus edulis.

(tusk shells), Amphineura (chiton), Gastropoda (univalves, snails, etc.), and Cephalopoda (nautilus, cuttlefish). Pelecypoda (*πέλεκυς, pelekys*, ax, and *πούς pous*, foot) or Lamellibranchiata or Bivalves or Acephala or Conchifera: the shells of this group are of two pieces hinged together, such as those of oysters, clams, etc. The animals vary in size from that of the little fresh-water mollusk to that of the giant East Indian clam of three feet in length. Pelecypods have the senses of touch, smell, and hearing, while some have eyes. The ears are in the foot, and the eyes are either on the edges of the mantle or at the end of the siphon. The siphon is a double tube formed by the extension of the mantle posteriorly. One opening draws in water laden with minute animalcules, thus supplying food and at the same time oxygen-laden water for respiration by the gills; the other opening furnishes a passage through which the water depleted of its oxygen and food particles passes to the outside again.

The Scaphopoda (*σκάφη, scaphe*, a boat or bowl, and *πούς, pous*, foot) includes the tooth-shells or tusk-shells. They are common in deep water on muddy bottoms. They are shaped something like an elephant's tusk, and are open at each end. There are no head, eyes, or heart. The digging foot is small. The shells were used by the Indians on the Northwest coast as necklaces and other ornaments, and as "shell money," which they call *hi-qua*. The pieces of shell were ground down to a definite shape and carefully made. The Amphineura (*ἀμφί, amphi*, around, and *νεῦρον, neuron*, a nerve) are characterized by an arrangement of the nervous system, in which two lateral and two ventral nerve trunks are bound together and are furnished with ganglia throughout the entire length. The shell is either in eight pieces or absent. They are of small size and are found in the warmer seas. The chitons have an eight-piece shell, and can roll themselves up in balls for protection. They cling to rocks and adhere despite the heaviest surf. Over 200 species are known. The Gastropoda (*γαστήρ, gaster*, the stomach, and *πούς pous*, foot) include snails, slugs, limpets, periwinkles, whelks, and many other one-shelled or one-valved shell mollusks. They are by far the largest division of the Mollusca. They all move about by the pulling or pushing force of a single foot. Breathing is carried on in some by a single gill; in others, by a pair of gills; and in still others, by lungs. The head bears tentacles, on the tips of which are the eyes. In some cases the eyes are upon a pair of stalks which can be thrust or drawn in at will. The shells are in many cases beautifully marked and colored. The mode of breathing is made the basis of further classification. The Cephalopoda (*κεφαλή, kephale*, head, and *πούς, pous*, foot) are the highest group of mollusks. They have a circle of fleshy arms around the mouth in front of the head. These arms are tentacles or "feet." By these they catch and hold their prey and also creep about. Cephalopods can swim rapidly forward or backward, which they accomplish by ejecting spurts of water, and thus propel themselves. Only the nautilus has an external shell. The octopods or octopi have eight tentacles or arms around the mouth. They are often called "devilfish."

Arthropoda.—The Arthropoda (*ἄρθον, arthron*, a joint, and *πούς, pous*, a foot) include all of the invertebrates having jointed appendages. There are more species in this than in any other branch of the animal kingdom. The bodies consist of segments or rings covered with an outer body wall or hardened cuticle, called the exoskeleton. The eyes of all arthropods are compound, made up of a number of small eyes. The divisions are: **Crustacea** (trilobites, horseshoe crabs, ostracodes, barnacles, lobsters, and crabs), **Myriapoda** (centipeds), **Arachnoidea** (spiders and scorpions), and **Insecta** (insects). The **Crustacea** (*crusta*, a shell) include lobsters, crabs, crawfish, shrimps, prawns, barnacles, etc. All live in water, though a few are met with in damp places, such as the wood



CRUSTACEANS.
1. Barnacle. 2. Shrimp. 3. Prawn.

lice and water bugs. The crustaceans have gills and two pairs of antennæ or feelers. Sea spiders are a form of Crustacea having a long slender body with eight very long legs. They live at great depths of the sea. Lobsters, crabs, and shrimps have five pairs of legs, the first usually developed as pincers. The **Myriapoda** (*μυρίος, myrios*, numberless, and *πούς, pous*, foot) include centipeds, and millipeds or thousand-legged worms. These are land animals and breathe like insects through minute openings on each side of the body along its entire length. The **Arachnoidea** or **Arachnida** (*ἀράχνη, arachne*, a spider) include the mites, scorpions, and spiders. The head and thorax

are more or less united into one part, the cephalothorax; there are four pairs of legs borne by the thorax, no antennæ, their place being taken by the jaws. The eyes are simple and vary from two to twelve. In the case of spiders, the spinnerets are borne on the abdomen. The scorpions have poison-glands and a sting in the abdomen. The mites are the lowest of the articulated animals. They are usually parasites, living upon the bodies, under the skin, of higher animals. Spiders have a round abdomen attached by a slight stem to the cephalothorax. Their mandibles or jaws are powerful hooked fangs connected with a poison gland in the head, from which a poison exudes that is strong enough to kill flies and other insects, but is not, except in the case of one species (*Latroductus*) fatal to man.

Insecta (*insectum*, cut in two) are the most numerous of all groups of land animals. The most conservative estimate of the number of species of insects places this number at 5,000,000, while Riley, the famous entomologist, placed the number of species at 10,000,000. An insect is a member of the six-legged arthropods. The term is loosely applied in popular use to everything that is of the nature of a small crawling creature. But the term does not include even spiders, centipeds, or "thousand-leggers."

One very generally accepted classification divides insects into nineteen groups or orders:—

Thysanura, springtails and bristletails.
Ephemerida, May flies.
Odonata, dragon flies.
Plecoptera, stone flies.
Isoptera, white ants.
Corrodentia, psocids and book lice.
Mallophaga, bird lice.
Euplexoptera, earwigs.
Orthoptera, grasshoppers, crickets, etc.
Physopoda, thrips.
Hemiptera, true bugs, plant lice, scale insects.
Neuroptera, aphis lions, ant lions, etc.
Mecoptera, scorpion flies.
Tricoptera, caddice flies.
Lepidoptera, butterflies and moths.
Diptera, true flies.
Siphonaptera, fleas.
Coleoptera, beetles.
Hymenoptera, bees, wasps, ants, etc.

Another mode of classification of insects is that given by Dr. Sharp in the Cambridge Natural History Series (1901) in nine orders:—

1. *Aptera*, wingless insects.
2. *Orthoptera*, locusts, grasshoppers, crickets.
3. *Neuroptera*, dragon flies, June flies, caddice flies.
4. *Hymenoptera*, ants, bees, wasps, sawflies.
5. *Coleoptera*, beetles.
6. *Lepidoptera*, butterflies, moths.
7. *Diptera*, true flies.
8. *Thysanoptera*, thrips.
9. *Hemiptera*, bugs, cicadas, aphids.

FISHES or PISCES.

The class Fishes comprises the lowest grand division of the vertebrates and certain primitive and degenerate forms standing below the true vertebrates, the whole grouped in six subclasses according to the following table based on Jordan's classification:—

PROTOCHORDATA.

Subclass.	
Enteropneusta	Balanoglossus.
Tunicata	Larvacea. Ascidiacea. Thaliacea.

VERTEBRATA.

Leptocardii	Branchiostomidae: Lancelets.
Cyclostomi	Hyperotreti: Borers: hagfishes. Hyperoartii: Lampreys.
Elasmobranchi	Selachii: Sharks, rays, sawfishes. Holocephali: Chimæras.
Teleostomi	Crossopterygii: Bechirs. Dipneusti: Sirenoidea, barramundas. Actinopterygii: Ganoidei (Ganoids): Sturgeons, garpikes, Teleostei (Bony fishes): Salmon, perch, codfish.

Enteropneusta and **Tunicata** are unimportant groups of the fishes. The Enteropneusta strongly resemble worms and have no familiar names. "Sea squirts," "sea pears," and "sea peaches" describe some of the Tunicata.

Leptocardii or **Lancelets** have the simplest of vertebrate characters: a notochord, but no skull, no limbs, and no vertebræ; the heart only a long tube with the power of contracting and expanding; blood colorless, no brain; and respiration carried on by gill slits. They are from one half an inch to four inches long and lie buried in sand and mud at the bottom of shallow waters. They are very important to the scientist for the study of the development of the vertebrates from lower forms.

Cyclostomi or **Lampreys** have a brain, skull, heart, and other organs, which mark a long step in the development of vertebrate animals. Both the hagfishes and the lampreys are parasitic upon other fishes.

Elasmobranchii or **Shark-like Fishes** have pairs of fins, a lower jaw, teeth, separate vertebræ, gill arches and a covering of scales—all structures which are not found in any of the lower fishes. The skeleton is not bony but cartilaginous so that the whole body is very flexible. There are two groups, the Selachii, sharks and skates, and the Holocephali, chimæras. Sharks are the earliest fishes found among fossils. There are about 150 known species of sharks and this group includes also the rays and skates. The chimæras are a small group of ugly looking fishes sometimes called sea cats.

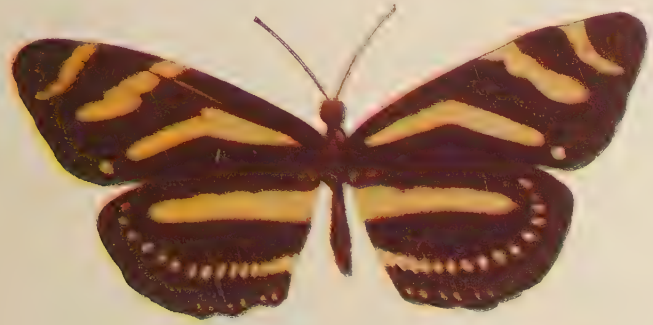
Teleostomi or **True Fishes** have a more or less complete bony skeleton, and include all of the higher forms of the three great primary divisions. The Crossopterygians, fringe-finned fishes, and the Dipneusti, lungfishes, are nearly all extinct and are of paleontological interest. The Actinopterygii include all fishes with fish jaws and fish fins, and comprise the Ganoidei, ganoids, and the Teleostei, bony fishes.

Ganoidei, Ganoids. In most ganoids the skeleton is cartilaginous, and in some it is very primitive in development. The body is covered with horny, enameled plates, and angular, shining scales. The number of living ganoids is small and their relationships puzzling.

Teleostei or **Bony Fishes** comprise all of the most highly developed fishes, embracing some 10,000 species. The skeleton is almost entirely bony, and there are many specializations of

SWALLOW TAIL BUTTERFLY
(PAPILIO TURNUS)

RED ADMIRAL BUTTERFLY
VANESSA ATALANTA



ZEBRA BUTTERFLY
(HELICONIUS CHARITONIUS)

BUTTERFLIES

MONARCH BUTTERFLY
(ANOSIA PLEXIPPUS)

structure not found in the lower groups. The infinite variety of detail in structure divides this vast assemblage into many orders of very unequal size and value. Their relationships are extremely diverse and cannot be correctly indicated in a linear series.

AMPHIBIANS or AMPHIBIA.

This class is an interesting link between Fishes and Reptiles. It was formerly called Batrachians, but the name Amphibia has now come into more general use. But all amphibian animals are not Amphibia; for the seal and walrus, though equally at home on land or sea, are of a much higher class.

All Amphibians, like Fishes and Reptiles, are cold-blooded—that is, they adapt the temperature of the body to that of their surroundings. On this account they are able to endure extremes of heat and cold in a remarkable degree. They can withstand the solid freezing of the water of a marsh or pond, but do not so well bear the higher temperatures.

There are wonderful combinations of gills, lungs, and fins and legs in this class, affording interesting study in evolution, but this great diversity makes classification difficult.

Amphibians thrive in warm regions, being most numerous in tropical America and India; none occur in polar regions. There are about 1,000 existing species, of which about 100 are Tailed Amphibians (*Urodela*); some 60 of these are American, 40 are Coecilians (*Apoda*) mostly of tropical America, and the remainder are Tailless Amphibians (*Salientia*), Frogs, and Toads widely distributed throughout the world.

REPTILES or REPTILIA.

Reptiles are air-breathing vertebrates, with limbs generally ending in claws, and bodies usually protected by plates or horny scales. They are cold-blooded, breathe by lungs; some live on land and some in water; the latter come to the surface to breathe. The class includes turtles, snakes, lizards, crocodiles, etc. The three orders of living Reptiles are:—

Chelonia. Turtles, Tortoises, and Terrapins.
Crocodilia. Crocodiles, Alligators, Gavials.
Squamata. Lizards and Snakes.

Of the numerous species found in North America, there are 44 Turtles and Tortoises, 2 Crocodilians, 97 Lizards, and 111 Snakes.

Chelonia. Tortoises are strictly land animals; Terrapins are the edible, hard-shelled, fresh-water species, and Turtles is a name applied loosely to the entire order.

Crocodilia or Crocodilians. The two species of this order found in North America are the American Crocodile and the Alligator. There are about 23 species of crocodilians in the world, the largest of which are found in the Eastern Hemisphere.

Squamata or Lizards and Snakes. This is much the largest of the three living orders of reptiles grouped in two suborders, Lacertilia, Lizards, and Ophidia, Snakes, each embracing about 1,000 species, the North American representatives of which are classified in 11 families of lizards and 4 families of snakes.

BIRDS or AVES.

Birds were evolved from reptiles. The strongest evidence of this fact was the discovery among the lithographic slate of Solenhofen in Bavaria of the fossil remains of a reptile-like bird, the *Archaeopteryx lithographica*, which is the earliest known progenitor of the great class of Aves.

The birds of North America are classified into seventeen orders:—

Order I (*Pygopodes*)—Grebes, loons, and auks. Of the 30 species of grebes known, 6 are found in North America, 5 of the 5 species of loons, and 30 of the 30 known species of auks, murres, and puffins.

Order II (*Longipennes*)—Jaegers, skuas, gulls, and terns. Of the 6 known species of jaegers and skuas, all are found in North America, 40 of the 100 species of gulls and terns, and 1 of the 3 species of skimmers.

Order III (*Tubinares*)—Albatrosses, petrels, and fulmars. Four of the 10 species of albatrosses, and 30 of the 70 petrels and shearwaters are found in North America.

Order IV (*Steganopodes*)—Gannets, tropic birds, cormorants, and pelicans. Eight of the 8 gannets, 1 of the 4 darters, 10 of the 30 cormorants, 3 of the 12 pelicans, and 1 of the 2 frigate or man-o'-war birds are found in North America.

Order V (*Anseres*)—Ducks, geese, and swans. Sixty-five of the 200 known species are found in North America.

Order VI (*Odontoglossae*)—Flamingoes. Five of the 7 known species are North American.

Order VII (*Herodiones*)—Herons, storks, ibises, etc. One of the 6 spoonbills, 4 of the 30 ibises, 2 of the 25 storks, and 15 of the 75 herons and bitterns are found in North America.

Order VIII (*Paludicolae*)—Cranes, rails, etc. Three of the 18 cranes, 1 of the 2 courlans, and 15 of the 180 species of rails, gallinules, and coots are found in North America.

Order IX (*Limicolae*)—Phalaropes, snipes, plovers. All of the 3 phalaropes, 2 of the 11 avocets and stilts, 45 of the 100 snipes, sandpipers, 8 of the 100 plovers, and 3 of the 10 oyster catchers are found in North America.

Order X (*Gallinae*)—Turkeys, grouse, bobwhites, etc. Eighty-five of the 200 grouse and bobwhites, and 4 of the 90 pheasants are found in North America.

Order XI (*Columbae*)—Pigeons and doves. Of the 300 species, 12 are North American.

Order XII (*Raptores*)—Vultures, hawks, and owls. Three of the 8 vultures, 35 of the 350 falcons, hawks, and eagles, 1 of the 10 barn owls, and 20 of the 200 horned owls, hoot owls, etc., are found in North America.

Order XIII (*Psittaci*)—Parrots and paroquets. Only 1 of the 500 species of parrots, paroquets, and macaws is North American.

Order XIV (*Coccyges*)—Cuckoos and kingfishers. Thirty-five of the 175 cuckoos, and 8 of the 180 kingfishers are North American.

Order XV (*Pici*)—Woodpeckers. Twenty-five of the 350 woodpeckers are found in North America.

Order XVI (*Macrochires*)—Goatsuckers, swifts, and humming birds. Seven of the 85 nighthawks, 4 of the 75 swifts, 17 of the 500 humming birds are found in North America.

Order XVII (*Passeres*)—Perching birds, flycatchers, blackbirds, jays, orioles, sparrows, finches, swallows, vireos, warblers, wrens, thrushes, etc. Thirty-five of the 350 flycatchers, 2 of the 100 larks, 25 of the 200 crows and jays, 1 of the 200 starlings, 15 of the 150 blackbirds and orioles, 80 of the 550 finches and sparrows, 5 of the 350 tanagers, 10 of the 80 swallows, 2 of the 2 waxwings, 2 of the 200 shrikes, 15 of the 50 vireos, 70 of the 100 wood warblers, 3 of the 65 wagtails and pipits, 12 of the 200 thrashers and wrens, 79 of the 95 nuthatches and tits, 5 of the 122 warblers, kinglets, and gnatcatchers, and 12 of the 300 thrushes and bluebirds are found in North America.

From the foregoing number of species, given upon the authority of Frank M. Chapman of the Museum of Natural History in New York City, it would appear that the total number of species of birds found in North America is about 1,086. The total number of species in the world of those birds which are represented in North America is about 7,225. It is a fair estimate of the total number of species of birds in the world to place the figures at about 10,000.

MAMMALS or MAMMALIA.

While feathers are the distinctive badge of the great class of Birds, hair is characteristic of the Mammals. Even the young whales and some of the adults possess it. No other animals are provided with this covering. Mammals embrace about 3,300 species, and may be classified into 12 orders:—

1. **Primates** or **First Order**, including man, apes, and monkeys. About 260 species.
2. **Ferae, Carnivora** or **Flesh Eaters**, including cats, dogs, bears, weasels, sea lions, seals, walrus. About 300 species.
3. **Insectivora** or **Insect Eaters**, including moles and shrews. About 230 species.
4. **Cheiroptera** or **Wing-Handed Mammals**, including bats and flying foxes. Over 500 species.
5. **Glires, Rodentia** or **Gnawers**, including rats, squirrels, gophers, hares. About 1,400 species.
6. **Ungulata** or **Hoofed Mammals**, including cattle, deer, sheep, swine, tapirs. Over 300 species.
7. **Cetacea** or **Whales**, including whales, porpoises, dolphins. About 90 species.
8. **Sirenia or Sea Cows**, including only the manati and dugong; 2 species.
9. **Edentata** or **Toothless Mammals**, including armadillos, sloths, and ant-eaters, about 25 species.
10. **Effodientia** or **Diggers**, including only the pangolins and aardvarks, about 10 species.
11. **Marsupialia** or **Pouched Mammals**, including opossum, kangaroo. About 175 species.
12. **Monotremata** or **Egg Laying Mammals**, including the duckbill and echidna; 5 species.

DOMESTIC ANIMALS.

Origin.—The domestication of animals to provide food and for many of their most important uses was accomplished long before recorded history begins.

The subjugation and employment of wild creatures superior to himself in strength and speed was one of the supreme achievements of primitive man,—an acquisition of incalculable value in promoting his advance from savagery to civilization, ranking with the utilization of fire, the invention of tools, and the cultivation of plants among the great determining elements of human progress.

History.—Practically all domestic animals of primary importance appear to have been in age-long use at the dawn of history. This prehistoric period is indeterminable, but extends to a most remote antiquity. Parent wild species of the camel, sheep, and humped cattle seem to have perished from the earth before written history began, and the ancestry of the horse and dog is not positively referable to living forms.

In Egypt the most ancient monuments contain mummies of the cat, and delineations of the dog, goat, ox, goose, and pigeon occur in various sculptured records. The camel was also known, and less ancient monuments depict the horse.

In India monumental inscriptions and other records indicate a remotely ancient use of the horse, elephant, humped cattle, water buffalo, and a somewhat later introduction of the peacock, chicken, and cheetah.

In China the earliest records indicate the possession of domestic animals, among which were the pig, silkworm, duck, and cormorant.

In Switzerland remains of the dog, cat, horse, pig, goat, sheep, and ox have been found in the middens of the Lake Dwellers.

In Greece and **Rome** mention of the ox, sheep, horse, mule, pig, goat, dog, and goose occurs in Homer or in other early authors, while the pigeon, guinea fowl, peacock, and rabbit are recorded before the beginning of the Christian era.

In Peru mummies of the guinea pig and blankets woven of alpaca wool are found in the ancient tombs at Ancon.

Method of Distribution.—As Asia unquestionably was the cradle of the human race, the domestication of animals doubtless took place there. This achievement led to other conquests of nature, and in time to migrations of the primitive peoples from their focal areas of development. Such movements as the Aryan invasion of Europe undoubtedly brought with it the majority, if not all, of the animals then in use. The remains of the Lake Dwellers in Switzerland show that they possessed many of the most important. The wars between Assyria and Egypt, between Greece and Persia, Rome and Carthage, and the extension of Roman authority to northwest Europe, were important factors. The establishment of commercial relations with the western world by caravan through Bactriana by the Chinese, about 150 B. C., and continued for centuries, also greatly contributed. Mediæval land commerce between the Orient and Europe, and particularly the Crusades, completed the diffusion and exchange of useful animals, so that, at the beginning of the fifteenth century, the then civilized world, with a few minor exceptions, was in possession of the same economic animals as to-day, and distributed over the same area.

The establishment of the sea trade between western Europe and the Orient by way of the

CINNAMON BEAR
(URSUS AMERICANUS VAR.)

GRIZZLY BEAR
(URSUS HORRIBILIS)

BLACK BEAR
(URSUS AMERICANUS)

Cape of Good Hope and the discovery, conquest, and settlement of the New World greatly extended the distribution of useful animals. During the past 400 years all of the most important domestic animals have been established in North and South America, in South Africa and Australia, a movement unparalleled in geographical range and economic significance in the history of the human race.

Order of Introduction. — Notwithstanding their comparatively small number, it is impossible to arrange domestic animals in the chronological order of their subjugation. As in case of cultivated plants, practically all economic species of the first rank have been in use upwards of 4,000 or 5,000 years. Age-long domestication of the dog, ox, humped cattle, sheep, goat, ass, horse, camel, elephant, cat, pigeon, goose, and honeybee is incontrovertible, but no evidence exists to determine beyond question which was first used.

It seems most probable that nearly all of these animals were first held in captivity by primitive peoples for surplus food supply, and that their other uses developed later. Among those which have come into use in the western world shortly before and since the beginning of the Christian era, but not belonging to the most ancient group, are: the chicken, which reached Greece and Rome from the East about 500 B. C.; the rabbit, brought from Spain to Rome during the period of the republic; the guinea fowl, brought to Rome from Africa about the same time; the swan, dating to the early Roman emperors; the carp, which had reached the Danube in the sixth century; and the water buffalo, which reached Italy at the same period. The Portuguese brought the canary to Europe about 1500; the turkey and guinea pig, from the New World, reached Europe in the sixteenth century, and the goldfish, which had been transferred by stages in ships trading with the Orient, reached England in 1691. From the foregoing it will be seen that no new domestic animals of great economic value have been developed during the last 2,000 years.

Zoological Rank.—The domestic animals of greatest value to man all belong to the highest groups, and are also, for the most part, if not invariably, the highest of their respective groups. Of the 41 more or less completely domesticated forms herein enumerated—37 vertebrates and 3 invertebrates—24 of the vertebrates belong to the highest class, mammals, and 12 to the next highest class, birds; 2 belong to the lowest class, fishes, while reptiles and amphibians are not represented.

Number of Species.—In comparison with the vast array of living wild species, the list of domestic animals bred for economic purposes is almost incredibly small. There are about 3,300 living mammals but only 23 are in domestication, or about 1 in each 150. There are upwards of 10,000 species of birds, of which only 12 are economically important, or about 1 in each 1,000 wild species. Of the great host of fishes, two only approach economic value, and of the hundreds of thousands of insects, only 3 attain economic significance, while the other groups of the animal kingdom are without representation. The total number which have become permanently valuable is about 40; over half of these are relatively unimportant, and only about 10 are of high economic value and world-wide use. This, of course, does not include merely captive animals, or those which have been temporarily or intermittently tamed, but embraces only those which are permanently established and economically important.

Geographical Distribution.—Not only were seven eighths of all domestic animals originally wild species of the Old World and first domesticated there, but this preponderant majority also includes every domestic species of preëminent rank and universal distribution.

Asia is by far the chief contributor, and, if physical instead of artificial boundaries be observed, then the list contributed by the natural continent of Asia and Europe, i. e., Eurasia, will be found to embrace three fourths of all, including practically every domestic species of the first order.

The preëminence of Asia is revealed by a mere catalogue of the native animals which have been domesticated within its confines. Six of the seven more or less completely domesticated species of cattle (*Bos*) viz.: the banteng, humped cattle, gaur, gayal, water buffalo, and yak, are distinctly Asiatic, while the seventh species, the ox, most important of all, originated from now extinct ancestors formerly wild in Europe and western Asia, and was doubtless first tamed by ancient Asiatic peoples. While the origin of the Arabian camel may be north African as well as west Asian, the Bactrian camel is clearly Asiatic, as is the horse, goat, domesticated elephant, cheetah, chicken, peacock, cormorant, honeybee, silkworm, carp, and goldfish.

Parent wild species of the pig, reindeer, goose, duck, and pigeon are of Eurasian distribution, and it is highly probable that the most ancient domestication of at least the pig, reindeer, and duck took place in Asia, and perhaps this is true of the goose and pigeon. While the parent species of the sheep is undetermined, its earliest domestic use was doubtless established in western Asia.

The vast continent of Africa with adjacent islands, possessing a rich and varied fauna, has contributed only a minor fraction,—the ass and cat alone being of high economic rank, while the guinea fowl, canary, parrot, and ostrich are relatively unimportant.

The contribution of the New World does not include a domestic animal of the first rank,—North America adding only the turkey and the cochineal insect, and South America the alpaca, llama, and guinea pig. The fauna of Australia has no representative in domestication.

Effects of Domestication.—Some animals have been profoundly modified in form, size, and habits, by domestication, such as the dog, sheep, pig, donkey, pigeon, and chicken, so that very numerous breeds, strains, or varieties have been developed. Many kinds of dogs are incapable of existence apart from human agency. The donkey does not run wild, and chickens are never found at a great distance from human habitations. Others have varied much in form and size, but are still capable of independent existence, such as the horse, goat, ox, cat, and goose, while a group like the cheetah, water buffalo, and swan are only partially domesticated, and but little altered by association with man.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication.
Alpaca (*Lama pacos*)	*Ungulata* (Hoofed Mammals) *Camelidae* (Camels)	The Guanaco (*Lama guanacus*) Andean region, Peru to Patagonia	1000
Ass Donkey Burro (*Equus asinus*)	*Ungulata* (Hoofed Mammals) *Equidae* (Horses)	Wild Ass (*Equus asinus*) Northern Africa, Abyssinia	5000
Banteng (Javan Ox) (*Bos sondaicus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goat)	Wild Banteng (*Bos sondaicus*) Burma, Malay Peninsula, Java, Borneo, Bali	Data uncertain
Bee, Honey (*Apis mellifica*)	*Hymenoptera* (Ants, Bees, Wasps) *Apidae* (Bees)	Unknown. Probably western Asia	5000
Camel (Arabian) (One humped) (*Camelus dromedarius*)	*Ungulata* (Hoofed Mammals) *Camelidae* (Camels)	No existing wild species, and none known to history Probably Arabia	5000
Camel (Bactrian) (Two humped) (*Camelus bactrianus*)	*Ungulata* (Hoofed Mammals) *Camelidae* (Camels)	None living or remembered Probably deserts of central Asia	5000
Canary (*Carduelis canaria*)	*Passeres* (Perching Birds) *Fringillidae* (Finches)	Wild Finch (*Carduelis canaria*) Canary Islands	400
Carp (*Cyprinus carpio*)	*Eventognathi* (Carp Tribe) *Cyprinidae* (Carp, Minnows)	Wild Carp (*Cyprinus carpio*) China	2000
Cat (*Felis domestica*)	*Carnivora* (Flesh-Eating Mammals) *Felidae* (Cats)	Present domestic form now believed to be a permanently established mixed strain derived from the Egyptian wild cat (*Felis caffra*) and the common wild cat (*Felis catus*), of central Europe and England. The ancient Egyptian cat was probably *F. caffra*	5000

Historical Notes.	Economic Importance.
Domestication by Peruvian Indians far antedates Spanish discovery. Blankets woven from alpaca wool have been found in ancient tombs dating back to the Incas. Alpaca wool was first exported to Europe in 1836.	Important in domestication in the Peruvian Andes, where it is raised in flocks for wool, which possesses a fiber of peculiar excellence, well adapted to many finer grades of cloth, so that it has become an important article of export. The alpaca does not acclimatize in other regions of the world, and all attempts to introduce and establish it as a wool-bearing animal in Europe and the United States have failed.
Probably first domesticated in the valley of the Nile. Long preceded the horse in ancient Egypt. Came into Greece by way of Asia Minor and Syria. Not common in early Greece. Mentioned only once in Homer's *Iliad*; not at all in the *Odyssey* nor in Hesiod, though Homer frequently mentions mules. The ass accompanied the spread of vine and olive culture through Italy and Spain to France. Known in England in reign of Ethelred; reintroduced during reign of Elizabeth. Brought to Mexico and South America by the Spaniards.	A most valuable beast of burden, particularly in subtropical, dry, and mountainous regions. It is invaluable for mountain transportation in Spain, Italy, southern France, Mexico, South America, and in arid mining regions of the western United States. It does not thrive in cold or damp regions, and is not suited to the climate of the eastern United States. Varies greatly in size, from dwarf forms only 20 to 30 inches high in the West Indies to fine Spanish and American breeds 16 hands high. The burro, used almost exclusively as a pack animal by miners and prospectors in the mountain regions of the Western States, is a small form.
Long tamed and esteemed by native peoples of Java and Bali, but historical references meager and period of domestication imperfectly known.	Large herds, forming considerable wealth, are kept by the Malays of Java and of Bali. In domestication the banteng freely intermixes with humped cattle, so that there are numerous intermediate strains.
Domestication dates back to the dawn of history in the Mediterranean region, Syria, Greece, and Egypt. Spread through Europe by Romans. Introduced into America by early colonists.	Honey and beeswax have long been common articles of commerce in many countries, but were relatively much more important in ancient times before the introduction of sugar. In the United States over 700,000 farms, or one in every eight, keep a total of 4,000,000 swarms, valued at $10,000,000.
Subjugation and domestication prehistoric; probably by primitive man in Arabian and Saharan deserts. Well known in Egypt in 1300 B. C., though not recorded on their monuments. Mentioned by Diodorus, Strabo, and many ancient authors, and frequently in the Bible. Introduced into Italy in 1622, and into Texas, New Mexico, and Arizona by the United States government in 1856 and used by Confederates during the Civil War for carrying mails. The experiment, however, did not prove successful, though remnants of the herds persisted for some time in Arizona and California, and possibly a few may still survive in remote portions of the desert. Introduced into Australia in 1860.	For ages the most useful animal in domestication in the arid regions from northern India and lower Afghanistan, south through Arabia to the Red Sea and Somaliland, and westward throughout the Sudan deserts; invaluable as a beast of burden and as a means of travel, especially adapted to deserts. Its flesh is good food, the milk is excellent, and the hair is made into cloth and cordage. The more slender forms, called dromedaries, bred especially for speed, will traverse 100 miles or more of desert in a single day. Introduction in other countries unsuccessful, except in very dry regions. In southern Europe attempts were unsatisfactory on the whole, although the camel thrives in Spain. In Australia it has become valuable for interior expeditions, and since 1880 camel corps have been formed by European troops in the Sudan, and are a permanent branch of the Egyptian army.
Domestication in central Asia remotely ancient, but historical references are meager when compared to the wealth of allusion concerning the Arabian camel and the prominence given to it by the historians of antiquity. While the railway is replacing both species of camels wherever it penetrates the desert, these stolid beasts of burden have been factors of incalculable influence in founding commerce and promoting civilization in regions isolated by otherwise insuperable barriers of mountain and desert.	Equally valuable throughout central Asian deserts, from northern Turkestan to Mongolia, as the Arabian camel is in more southern climates, being especially adapted to rocky and cooler regions. It endures the fierce summer heat and the severe winter cold of the Tibetan plateau while bringing tea from Peking to Lake Baikal, and it hauls wagons over the lofty passes of the Hindu Kush across Afghanistan to Persia at all seasons. The ability of this animal to withstand terrible extremes of heat and cold, and to travel long distances without water, conditions absolutely unendurable by horses or cattle, made possible the establishment of the commerce which has existed for centuries between China and western Asia.
When the Portuguese conquered the Canary Islands in 1478, these finches, now called canaries, were taken to Spain in great numbers, and thence distributed throughout Europe. In size and color they have been greatly modified by domestication.	The use of canaries as cage song birds and household pets is much more extensive in Europe than in the United States. They are now found throughout the world wherever European colonization has been established. The rearing of canaries for the market has become an industry of considerable local importance in Germany, Belgium, Scotland, and northern England.
Long domesticated in China; reached eastern Europe early in Christian era; grown in France and Germany since the thirteenth century; established in the United States about 1870.	The only fish widely domesticated for food; now acclimatized throughout the world; very hardy and prolific but coarse fleshed and inferiorly flavored; very popular in Germany but sparingly in favor in the United States
Like the dog, was a member of the domestic circle when history began. Apparently first domesticated by the Egyptians, being depicted upon their first monuments. Held sacred and highly esteemed, mummies of cats being found coeval with the earliest human remains. Mentioned in Sanskrit manuscripts 2000 B. C., but not known to Chinese until about 500. Known to Europeans of the Bronze Age, but not generally known to the ancient Assyrians, Hebrews, or Greeks.	Reared and prized throughout the world as a household pet, and of true economic importance as an exterminator of rats, mice, and other small animal pests. Second only to the dog as a hearth animal, but far inferior to it in range of usefulness. It possesses intelligence of a high order, but has never developed or manifested so great an amount of attachment, affection, and devotion to man as the dog, although it becomes attached to places to a remarkable degree. It has been less modified by human agency than the dog, the varieties being rather few and the variations in size comparatively insignificant, and it readily returns to a wild or semi-wild state.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication
Cheetah Hunting Leopard (*Cynaelurus jubatus*)	*Carnivora* (Flesh-Eating Mammals) *Felidae* (The Cat Tribe)	Hunting Leopard (*Cynaelurus jubatus*) India, Africa	4000
Cochineal (*Coccus cacti*)	*Hemiptera* (Bugs) *Coccidae* (Scale Bugs)	Scale Bugs (*Coccus cacti*) Mexico, Central America	400
Cormorant (*Phalacrocorax carbo*)	*Steganopodes* (Totipalmate Fishing Bird) *Phalacrocoracidae* (Cormorants)	Black cormorant (*Phalacrocorax carbo*) Europe, Asia, Africa	2000
Dog (*Canis familiaris*)	*Carnivora* (Flesh-Eating Mammals) *Canidae* (The Dog Tribe)	Unknown, probably indeterminable, but either from wolves or jackals, or from both together	5000
Duck (*Anas boschas*)	*Anseres* (Duck Tribe) *Anatidae* (Ducks)	Wild Mallard (*Anas boschas*) Europe, Asia, and North America	Data uncertain
Elephant (*Elephas indica*)	*Ungulata* (Hoofed Mammals) Suborder: *Proboscidea* Family: *Elephantidae*	Wild Elephant (*Elephas indica*) India and East India Islands	5000
Fowl, Domestic Cock, Hen Chicken (*Gallus domestica*)	*Gallinae* (Gallinaceous or Game Birds) *Phasianidae* (Pheasants)	Wild Jungle Fowl (*Gallus bankiva*) India, Cochin China, and Malay Islands	4000

Historical Notes.	Economic Importance.
Depicted on ancient Assyrian and Egyptian monuments. Anciently trained for hunting in India and established as a part of the royal state, the custom being maintained by many native princes at the present day. Brought to Europe by returning Crusaders, and flourished in France and Italy for about two hundred years.	This large cat-like animal, although about equal to the true leopard and the jaguar in size, does not share their tiger-like ferocity, but in disposition is more like a dog, and is readily tamed. While it occurs wild over large areas in Asia and Africa, its domestication, which is only partial, is now restricted to India, where its chief use is to hunt the black-buck, a species of antelope. Upon approaching within about 200 yards, the cheetah is unloosed, and, by a burst of its superior speed, which, for short distances, greatly exceeds that of a race horse or greyhound, and is probably greater than that of any other mammal, it overtakes and throttles the strongest buck within a few hundred yards.
Long grown in Mexico. In use as a dye when the Spanish under Cortes entered in 1519, and immediately introduced into Europe. Successfully naturalized in Mediterranean countries and in the Canary Islands. It feeds upon a species of prickly pear, *Opuntia coccinellifera*. The brilliant dye carmine, derived from the dried insect, was discovered by a Franciscan monk of Pisa and manufacture began in 1650.	Source of cochineal and carmine dyes; at one time exceedingly valuable, and stimulated culture of the insect in many dry, semi-tropical regions. Grown in Mexico, Central America, Java, Algeria, and the Canary Islands. Exported in considerable quantity from Honduras. The discovery of aniline dyes and the great extension of their use in the last quarter century have rendered the culture of cochineal unimportant except locally.
Trained to fish since ancient times by Chinese and Japanese. In Europe fishing with native cormorants began about 1625 in Holland, where it still prevails to some extent, whence it spread to England, where it was much used for a time and then abandoned. Now being revived to some extent as a sport in England.	While fishing with cormorants has been practically limited to the field of sport in Europe, the use of these birds, which are trained in great numbers, to catch fish for food in China and Japan, has long been of economic importance. A ring is placed about the neck of the bird so that the fish when caught is not swallowed, but simply pouched, and when removed the bird proceeds to catch another in the same way.
Domestication dates to primitive man, and far precedes the dawn of history; many important varieties being portrayed in the earliest sculptures. Ancient forms of the greyhound are pictured on Egyptian monuments dating to 3400 B. C., while the mastiffs, hounds, lapdogs, and turnspits carved in stone 4,000 years ago closely resemble the breeds of to-day. Remains found in the kitchen middens of Denmark, and in the lake dwellings of both the Stone Age and Bronze Age in Switzerland. Depicted on the oldest monuments in the valleys of the Euphrates and Indus, and worshiped as Anubis, the genius of the Nile, by ancient Egyptians. Mentioned in the Bible. Highly prized by the Greeks and Romans.	The most intelligent, affectionate, and devoted of domestic animals; in use by all peoples, and accompanying man throughout a wider range than any other animal, greatly exceeding the cat, donkey, or horse in this respect; varying in adaptation to climate from the hairless forms of the tropics to the heavily fur-coated Eskimo breeds, and in size from tiny lapdogs no larger than kittens to great Danes standing three feet high at the shoulder, thus presenting forms which are at once larger and smaller than any wild member of the dog tribe, there being some 200 varieties which have resulted from the intercrossing of about six leading types, namely: wolf-like dogs, greyhounds, spaniels, hounds, mastiffs, and terriers. Exceedingly susceptible to human influence; bred and trained for an infinite variety of purposes, from merely **curious** and pampered household pets to powerful hunters and even beasts of burden, providing food for some peoples and sharing with the reindeer the labor of transportation in Arctic regions. Most varieties have become so modified by domestication that they are unable to sustain themselves independently of man.
Domestication ancient, but evidence scanty and indefinite. The white or Pekin duck was introduced into the United States from China in 1870.	Duck raising extensive in Europe both for flesh and eggs, which are more generally used than in the United States. In eastern Asia, notably in China, ducks are grown in enormous numbers. Duck raising has become a profitable industry in the United States, particularly since the introduction of the Pekin duck.
Very anciently tamed in India, there being over 100 different names for the elephant in Sanskrit. Earliest use was in war, and they were first made known in Europe through employment in military operations. Alexander the Great captured 15 at the battle of Arbela. Pyrrhus led elephants against the Romans. In the Punic wars the Carthaginians used the African elephant, 37 of them crossing the Alps with Hannibal's army. The ancient Egyptians knew both species, though the African elephant is the only one depicted on Egyptian and Assyrian monuments. At the battle of Raphia, 217 B. C., 73 African elephants fought disastrously against 104 Asiatic. Domestication for draught and baggage animals now limited to India and the East India islands.	The largest and, when properly trained, the most docile of domestic animals, exhibiting a high degree of intelligence, which is often overestimated on account of a remarkable willingness to obey instructions; endowed with unusual powers of memory and becoming greatly attached to its keepers. However, it lacks initiative and reasoning powers, being far inferior to the dog in this regard. It will not voluntarily go to the assistance of a human friend in trouble, or to the rescue of its own master even when attacked at its feet, though it will act instantly when directed. It is also helpless in the face of a new danger or unexpected emergency. A most valuable draught and baggage animal, employed in hauling and handling timbers and in transporting heavy loads over rough ground in the absence of roads in India and the East India Islands. The largest specimens, particularly those with long tusks, are considered of high caste, and are kept for state pageants.
Ancient domestication in India, but not figured on Egyptian monuments or mentioned in the Old Testament. Apparently reached Europe in a domesticated state about 500 B. C. Caesar found it in Britain upon his arrival. It is now diffused throughout the world, except in polar regions, accompanying man throughout a wider range than any other bird, and ranking with the dog, cat, donkey, horse, ox, sheep, and pig among the most universal companions of man.	The most thoroughly domesticated, widely distributed, and generally useful of birds, being readily adaptive to a wide range of climatic and food conditions and consequently more easily reared than any other fowl. Greatly modified by ages of breeding in many lands into numerous races which exhibit wide variations in size, form, and color, from diminutive Bantams to giant Brahmas nearly as large as a turkey, and from pure white to pure black breeds, with numberless intergrades, together with red, brown, and vari-colored races. On account of immense numbers their aggregate value for food and eggs reaches a vast total, ranking high among the animal productions of the world.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication
Gaur (*Bos gaurus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goat)	Wild Gaur (*Bos gaurus*) India	Data uncertain
Gayal Mithian (*Bos frontalis*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	Wild Gayal (*Bos frontalis*) Northeastern India	Data uncertain
Goat (*Capra hircus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Oxen, Sheep, Goats)	Benzoar goat or Persian pasang (*Capra aegagrus*) As main stock Greece to Persia, Afghanistan, and western India	5000
Goldfish Golden Carp (*Carassius auratus*)	*Eventognathi* (Carp Tribe) *Cyprinidae* (Carp Minnow)	Wild Carp (*Carassius auratus*) Fresh water China, Azores, Madeira, St. Helena, Java, and the Philippines	1400
Guinea Fowl (*Numida meleagris*)	*Gallinae* (Gallinaceous or Game Birds) *Phasianidae* (Pheasants)	Wild Fowl of Guinea (*Numida meleagris*) Western Africa	2500
Guinea Pig (*Cavia cutleri*)	*Rodentia* (Rodents) *Caviidae* (Cavies)	Wild Cavia (*Cavia cutleri*) Peru	1000
Goose (*Anser domesticus*)	*Anseres* (Duck Tribe) *Anatidae* (Ducks, Geese)	Wild Goose (*Anser ferus*) Central Europe Asia and north Africa	5000
Humped Cattle Indian Ox Zebu (*Bos indicus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	No known wild form Probably southeastern Asia	5000

Historical Notes.	Economic Importance.
Tamed by the hill tribes of northeastern India, but historical data as to when this domestication began are wanting.	The domestication of this magnificent wild ox, the handsomest representative of the genus Bos, is only partial and is confined to native tribes inhabiting a limited area in northeastern India, who keep it in herds for its flesh.
In semi-domestication by native tribes of northeastern India evidently for a considerable period of time, but definite historical data are unavailable.	Kept in large herds for food by the peoples of the hill regions of northeastern India; not employed as a beast of burden and probably no attempt is made to use its milk.
Domesticated by the ancient Egyptians and by prehistoric Lake Dwellers in Switzerland. Figured on ancient monuments in Egypt; mentioned in the Bible. Ages of domestic breeding have developed numerous varieties, the chief of which are the Angora, Kashmir, Syrian, Egyptian, and Sudan goats. Domestic goats have run wild in many regions, sometimes mixing with other species. According to Garcilasso, goats were brought to Peru from Spain in 1544.	Valuable for flesh, milk, wool, and skins, particularly in warm, dry regions, the greater part of the world's goats being grown in southern Europe, northern Africa, and Syria. The fleece of the Angora goat is called mohair and is much used in fabrics. The fine underwool combed in summer from Kashmir goats is woven into the well-known Kashmir shawls. Goat's leather is employed for innumerable uses, some of the chief of which are glove making, shoemaking, and bookbinding. In the United States goats have never attained importance as farm animals. The Angora goat introduced in 1849 by gift of the sultan of Turkey was little bred or noticed for fifty years. Since 1900 numerous flocks have been established in the Pacific States, notably in Oregon, and considerable numbers have been raised in Iowa and Missouri.
First domesticated in China, Basilewsky placing the date of their development in Chinese springs about 450. After the establishment of maritime trade with western Europe goldfish were transported first to Batavia, thence to Mauritius and St. Helena, and were brought from St. Helena to England in 1691. Now domesticated and naturalized in many parts of the world. The golden color is the result of artificial selection. Those which have become naturalized in the Potomac river have assumed an olive-green color similar to that of the parent wild species.	The most widely distributed ornamental fish, being more highly prized and more extensively used for aquariums than any other species. No fish available for like purposes equals it in beauty and the ease with which it may be reared and maintained. Like other merely ornamental animals it does not attain economic importance, although the rearing and handling of goldfish is a matter of considerable consequence in the trade of aquarium furnishers, and dealers in small animals.
Domesticated by Greeks and Romans. Disappeared with the fall of Roman civilization and was reintroduced from Africa by the Portuguese in the sixteenth century. It was first taken to the Cape Verde Islands and West Indies and thence slowly spread to Europe and around the world.	Valuable for food and eggs, but not popular in Europe or America on account of their constant noisy cries, and the difficulty experienced in rearing them. Originating from a wild species accustomed to very dry regions, the domesticated forms cannot endure wet situations or moist climate, rendering unusual precautions necessary for the protection of the young chicks.
Domestication in Peru long antedates the period of Spanish conquest. Mummies of the guinea pig have been found in the ancient tombs at Ancon. Since the Spanish occupation of South American countries it has become widely distributed in other parts of the world, being introduced into Europe by the Dutch during the sixteenth century. The name guinea pig is a double misnomer. It is not a pig but a rabbit-like rodent related to the rats; neither does it come from Guinea, but is exclusively South American. However, Guinea is probably a corruption of Guiana, and the peculiar grunting sound emitted by it undoubtedly gave rise to the name pig.	According to Nehring the ancient Peruvians used this animal not only for food but for sacrifices. It is now eaten for food from Ecuador to Chile, especially in Peru, and it is sometimes made use of for food in Europe. This animal has been apparently but little modified by domestication. Its intelligence is limited, being stupid and manifesting no affection. However, it never bites, and on that account has long been kept as a safe pet for children, both in Europe and in the United States. It is immensely prolific and easy to rear. Now extensively employed in biological laboratories for experimental purposes, particularly in the study of germ diseases.
Domestication very ancient in Egypt and Asia. Figured on oldest Egyptian monuments. Known to Greeks of Homer's time, and the geese kept in the Capitol are said to have saved Rome. Great herds of geese were driven from central Europe to the ancient Roman markets. The goose has been but slightly changed from the parent wild stock by domestication.	Valuable for eggs, quills, feathers, and for food. In southern Europe culture was formerly much more important, but it is still a great industry in Holland and Germany. Livers from geese artificially fattened, in districts near Strassburg, are made into the celebrated delicacy known as paté-de-fois-gras. In the United States, goose raising is of minor importance, there being forty times as many chickens as geese, the total number of geese being about 5,600,000, somewhat exceeding the ducks, but falling below turkeys—chickens, turkeys, geese, and ducks ranking in the order named. Most extensively grown in the southern states: Kentucky, Missouri, Texas, Tennessee, and Arkansas leading in the order named.
Domestication prehistoric, being exceedingly ancient in Egypt and India. Forms considered as the ancestors of the present Indian breeds, depicted on ancient Egyptian monuments. White bulls long held sacred by the Hindus. Recently introduced into Jamaica for use on plantations.	Very valuable as a draught animal and beast of burden throughout its range in India, China, the Asiatic Islands, Madagascar, and the eastern coast of Africa. It can travel twenty to thirty miles per day, and is very docile. Age-long breeding has resulted in greater variations in size than in the case of any other domestic cattle, some forms exceeding the largest ox in height, while the smallest breeds are no taller than a large dog.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication
Horse (*Equus caballus*)	*Ungulata* (Hoofed Mammals) *Equidae* (Horses)	The Wild Mongolian Horse (*Equus przevalskii*) Of central Asia More closely resembles the domestic horse than any other living species, and the domestic form was undoubtedly derived from it or a closely related species now extinct	5000
Llama (*Lama glama*)	*Ungulata* (Hoofed Mammals) *Camelidae* (Camels)	The Guanaco (*Lama guanacus*) Andes, Peru to Patagonia	1000
Mule Hinny (*Mulus, Hinnus*)	*Ungulata* (Hoofed Mammals) *Equidae* (Horses)	These hybrids between the domestic horse and the domestic ass do not occur in a wild state, but have been developed by domestic breeding	3000
Ostrich (*Struthio camelus*)	*Struthiones* (Flightless Birds) Suborder: *Ratitae* (Struthious Birds) *Struthionidae* (Ostriches)	Wild Ostrich (*Struthio camelus*) Africa	50
Ox, Cow, **Steer,** Cattle (*Bos taurus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	The Aurochs (*Bos primigenius*) Of Europe and western Asia Abundant at the time of Julius Caesar but supposed to have become extinct about the twelfth century, though some regard the wild Chillingham cattle of England as unmixed descendants of the aurochs	5000

Historical Notes.	Economic Importance.
Probably first domesticated in central Asia, anciently used in India in war and sacrifices. Appears in ancient sculptures at Persepolis in Persia. Horse heads adorn columns of ancient Assyrian palaces. Came into use much later than the ass in Egypt, the monuments indicating introduction during period of the Shepherd Kings about 2000 B. C., attached to the war chariots of Pharaoh. Frequently mentioned in the Bible. Highly treasured by Greeks and prominent in their mythology; drew the sun chariot of Apollo and the sea chariot of Poseidon; appears as the sea horse Hippocampus, and as the winged horse Pegasus, and as the centaur. Used by Lake Dwellers of the Bronze Age. The gods of German mythology are horsemen. Introduced into the Americas by the Spanish. The horsemen accompanying Pizarro in Peru and Cortes in Mexico struck terror through the native armies and made possible seemingly miraculous victories over immensely superior numbers.	Economically the most valuable as well as historically the most important animal domesticated by man. While doubtless kept by the most primitive peoples chiefly for food, its strength and speed soon gave it a higher value to barbaric races for purposes of war and the chase, and its adaptability to innumerable conditions and uses has rendered it indispensable to the most highly civilized nations. The horse has accompanied man in his conquest of every continent throughout a climatic range exceeded only by the dog and is of inestimable importance in carrying on the work of the world. Although inferior in intelligence and mental power to the elephant and the dog, the horse is the most spirited, trustworthy, and affectionate of the large working animals, and has become such an intimate companion of man that sentiment practically forbids the use of its excellent flesh for food among civilized peoples. Prolonged domestication, while producing many varieties ranging in size from the small Shetland pony to the Norman draft horse, has modified it less profoundly than the donkey or the dog, and it readily maintains itself apart from human agency, as witness the vast herds of so called wild horses in Texas and South America which were derived from small groups introduced by early Spanish explorers. Counting young as well as mature horses there are upwards of 21,000,000 in the United States valued at nearly $2,000,000,000, being nearly one half the total value of all domestic animals; employed on over 4,500,000 farms, or four out of each five.
Domesticated by ancient Peruvians, who had long used both the llama and the alpaca at the time of the Spanish conquests. Attempts to introduce the llama into other regions of the world have been unsuccessful.	Very valuable for food and as a beast of burden before the Spanish occupation of the Andean region, particularly in Peru and Chile. Used in immense numbers for transporting silver and other products during the early period of the conquest, but since the introduction of horses and mules the llama has been gradually displaced as a beast of burden. Previous to the acquirement of European domestic animals the llama and alpaca were as serviceable to the Peruvians as the reindeer is to the Laplanders, providing wool and flesh, and carrying on the work of the country.
The breeding of mules began in remotely ancient times, probably in Asia Minor, whence they were brought to Greece at a very early period, being frequently mentioned by Homer, also by Theognis, Hesiod, and other early Greek writers, and held in high esteem for their superior strength. Nausiccaa's car was drawn to the seashore and back by mules. From Greece they were introduced into ancient Italy, where they became popular, hauling carts on the highways in Varro's time much as they do in that region to-day. From Rome they became widely diffused in Europe, and the Latin names *mulus* and *hinnus* were adopted into the languages of most peoples who made use of these hybrids, persisting in the English names mule and hinny at the present day. Mentioned in the Bible, though the Israelites were forbidden by law to rear them.	The only hybrid among domestic animals which has risen to true economic importance and world-wide use. While of sullen disposition and much less affectionate than the horse, it possesses a high degree of intelligence. In adaptability to severe or unfavorable conditions it is superior in some respects to both the horse and the donkey, being able to withstand rough usage, inferior food, and extremes of heat better than the horse, and far exceeding the donkey in strength, particularly for draught, and in suitability to moist climates, while it is far inferior to the horse in speed, gracefulness, and spirit, and to the donkey in docility. The finest mules are reared in Spain and the United States, large breeds attaining a height of 16 hands. Mules are especially well adapted to conditions of general and farm labor in the southern states, where the great majority are bred and used. In the United States the ratio of mules to horses is about one fifth both in number and value.
Partially domesticated for centuries by native tribes in central Africa. Since 1860 complete domestication on a large scale has been undertaken in south Africa, particularly in Cape Colony, whence it has spread to Algiers and the southern United States. Unless completely established in domestication the ostrich will soon become extinct.	Chiefly valuable for certain of its large feathers called plumes, which are an important article of trade in Cape Colony, where upwards of 250,000 ostriches are reared for plume production. Ostriches are grown in limited numbers for the same purpose in Florida, California, and Arizona.
Domestication prehistoric, apparently first accomplished by Aryan peoples in western Asia. As a beast of burden and draught animal considerably antedates the horse, which, among the more ancient peoples, was used chiefly in war. Appears on ancient Egyptian monuments; early mentioned in the Bible; frequently named by ancient classical writers, such as Herodotus and Hippocrates among the Greeks, and Tacitus, Varro, Strabo, and Pliny among the Romans. Butter seems to have been unknown to Greeks and Romans in their most flourishing period; but was extensively used by more northern peoples. Brought to the West Indies by Columbus, 1493; to Mexico by Spanish about 1525; from England to Virginia 1610, and to Massachusetts 1624; from Holland to New York 1627; and from Denmark to New Hampshire in 1631.	The chief source of wealth in many regions. Just as the horse is preëminent as a labor animal, the ox stands first as the food producing animal, par excellence, in modern civilization. The aggregate value of cattle products—beef, milk, butter, cheese, hides, etc.—far exceeds that of any other animal. While still employed as a draught animal, it is so inferior to the horse for general purposes, that its use among the most advanced peoples is comparatively limited. In intelligence it ranks far below animals relatively of little value to man, and ages of domestication have not resulted in such extremes of variation as are met with in the donkey, dog, horse, or its near relative, the humped ox of India. Yet many well marked varieties have been developed, particularly during the last century in England, when valuable breeds for special purposes, such as the Shorthorn, Hereford, Alderney, and Jersey, became established. In the United States there are upwards of 71,000,000 cattle, of which 21,000,000 are milch cows, with a total value of $1,500,000,000.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication
Parrot (*Psittacus erithacus*)	*Psittaci* (Scansorial Birds) *Psittidae* (Parrots)	Wild Parrot (*Psittacus erithacus*) Central Africa	2500
Peacock (*Gallipavo cristatus*)	*Gallinae* (Gallinaceous or Game Birds) *Phasianidae* (Pheasants)	Wild Peacock (*Gallipavo cristatus*) India, Siam	4000
Pig (*Sus scrofa domestica*)	*Ungulata* (Hoofed Mammals) *Suidae* (Swine)	European stock from Wild Boar of Europe (*Sus scrofa*) Asiatic stock from Wild Boar of India (*Sus cristatus*) Some authorities consider these two wild forms specifically identical	5000
Pigeon (*Columba livia*)	*Columbae* (Pigeon Tribe) *Columbidae* (Pigeons)	Wild Blue Pigeon or Rock Dove (*Columba livia*) Europe and Asia	5000
Rabbit Belgian Hare (*Lepus cuniculus*)	*Rodentia* (Rodents, Gnawing Mammals) *Leporidae* (Hares, Rabbits)	Wild Rabbit (*Lepus cuniculus*) Europe, Africa	3000
Reindeer (*Rangifer tarandus*)	*Ungulata* (Hoofed Mammals) *Cervidae* (Deer)	Wild Reindeer (*Rangifer tarandus*) Northern Europe and Asia	Data uncertain

Historical Notes.	Economic Importance.
The first record of the parrot is in an account of a feast in Alexandria, Egypt, 784 B. C. Prized as a food by the ancients, being esteemed a delicacy. Long tamed by native peoples of central Africa, and taken to Europe in considerable numbers soon after the establishment of the slave trade, being first seen in England in 1504, and thence carried to many parts of the world.	Highly regarded by natives of central Africa as a household pet; also used for food and its feathers for ornaments. The best talking birds are all of this species, though they lack the brilliancy of plumage possessed by many other parrots. Its chief use among civilized peoples is as an ornamental bird and household pet, developing under training the most remarkable powers of imitating human speech displayed by any animal.
The domestication of the peacock dates to remote antiquity in India. It is first mentioned in western literature in the plays of Aristophanes and became well known to the Greeks after the expedition of Alexander the Great to India. It became very common among both the Greeks and Romans, who reared it in great numbers for the table.	Valuable for food, the flesh and eggs being of good quality though inferior to the domestic fowl, and reared still extensively in southeastern Asia for food. While the range of the peacock in domestication has been greatly extended in modern times, it has been entirely replaced by domestic fowls for food and eggs, and its use in most regions of the world is now restricted to ornamental purposes,—the splendor of its plumage being unequaled by any other large bird.
The domestication of the pig is remotely ancient, having been established among the Chinese for some thousands of years. Mentioned in the Bible, though held unclean by Mosiac law. Remains are found in the ancient lake dwellings of Switzerland. Used for food by the Greeks and Romans. Brought to America by the early colonists. However, it is only during the last 200 years that the pig has reached its present highly modified state of domestication, and only during the last century has selective breeding been carried on to secure rapid growth and much fat. The Chester White breed was evolved in Chester county, Pennsylvania, between 1818 and 1830; the Berkshire was introduced from England about 1830; and the Poland China originated in southwestern Ohio, 1839-1840.	Remarkable as the only domestic mammal reared primarily and exclusively for food, the use of its bristles for brushes and its hide for leather being insignificant and not considered by the breeder. Its rapidity of growth and propagation gives it a peculiar value in the food supply of the world. While the flesh of the pig is inferior to that of the ox, the quickness and certainty with which it can be produced, and the ease with which it can be cured and marketed, render it the cheapest and most widely available of meats. The distribution of the pig is world-wide, being found on every continent, throughout a range of latitude about equaling that of the horse, but not in high altitudes though it ascends to 9,000 feet in Spain. Long domestication, and particularly modern selective breeding, have greatly altered some of the prominent characteristics of the wild pig. The domestic pig is omnivorous, not herbivorous only, and has largely lost its tusks and the inclination to use them. The wild pig is a notably alert and sagacious animal and while the conditions surrounding its domesticated descendants all tend to degrade rather than to improve intelligence, animal trainers have found it to possess surprising powers and to receive instruction with a readiness equaled by few if any animals lower than the apes.
Very anciently tamed and prized in Egypt and Assyria. According to Lepsius, the earliest mention is during the third dynasty in Egypt about 3000 B. C. The pigeon entered Greece by way of Syria and became common about 400 B. C.; thence was transported to Rome and spread to Europe. Frequent in the mythology of various peoples. Mentioned in the Mosaic law concerning sacrifices and frequently throughout the Bible; adopted as a symbol of the Holy Spirit by the early Christians; also held in high regard by the Mohammedans. Homing pigeons very ancient in the Orient, where they were first seen by Europeans during the Crusades; became conspicuous again in the Franco-Prussian War and now maintained by the leading armies.	Valuable particularly for its flesh and easy to rear in many regions of the world. While more ancient than the domestic fowl, it is not so generally useful, and at present is of small economic importance compared to the leading domestic birds, consequently pigeons are now kept as pets and ornamental birds rather than for food. Ages of domestication have produced some 250 varieties, such as pouters, tumblers, fantails, rough-footed, black nun, and homing pigeons. In the United States during recent years considerable attention has been given to rearing young pigeons for the table, especially near large cities, where squabs now have an established place in the poultry markets.
According to Hehn the rabbit was anciently domesticated by Iberian peoples in Spain, who may have brought it from northern Africa. Established among the Romans about the time of the Republic. Varro, Strabo, and Pliny describe it. Thence it spread throughout Europe. Now reared in the United States and in many other regions of the world. In Australia its introduction proved a most unfortunate experiment as it multiplied in such numbers as to become a destructive pest.	Much prized for its flesh in many European countries, particularly in France and Belgium, where it is reared in great numbers. Recently it has become popular in England, and, on account of cheapness, occupies a place very similar to the chicken in American markets. While grown to a limited extent in the United States it has not become popular, and its use is insignificant even when compared to such minor fowls as the duck or goose. Much modified by long domestication, particularly in size, adaptation to climate, and character of fur.
Long domesticated in Lapland, Scandinavia, and Russia. Introduced into Iceland in 1870, and into Alaska in 1892. While many authorities consider both the barren ground caribou and the woodland caribou of North America merely varieties of the European reindeer, it does not appear that either of these American forms has ever been domesticated by the Indians of Canada or Alaska.	Invaluable to the Laplanders as a beast of burden, as a means of travel and for food, clothing, and other useful purposes. It is maintained in considerable numbers in Siberia, northern Scandinavia, and in several Permian districts in Russia. The Lapland draught animal is smaller than the wild form, but in Siberia a large domestic reindeer is kept for riding. Shares with the dog the labor of transportation in far northern regions.

Common and Scientific Name.	Order and Family.	Parent Wild Species and Region of Origin.	Years of Known Domestication
Silkworm Moth Silkworm (*Bombyx mori*)	*Lepidoptera* (Butterflies and Moths) *Bombycidae* (Silkworm Moths)	Silkworm Moth (*Bombyx mori*) Northern China, Bengal	4500
Swan (*Cygnus olor*)	*Anseres* (Duck Tribe) *Anatidae* (Ducks, Geese, Swans)	Wild Swan (*Cygnus olor*) Europe	2000
Sheep (*Ovis aries*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	Unknown and probably indeterminable, but is most closely allied to the wild mouflon, *Ovis musimon*, of Sardinia and Corsica, the Armenian Wild Sheep, *Ovis gmelini*, of Persia and Anatolia, and the Asiatic Wild Sheep or Oorial, *Ovis vignei*, of Central Asia, and may be a mixed strain derived from some or all of them or from similar wild species now extinct	5000
Turkey (*Meleagris gallipavo*)	*Gallinae* (Gallinaceous or Game Birds) *Phasianidae* (Pheasants)	Wild Turkey (*Meleagris gallipavo*) United States, Mexico, West Indies	350
Water Buffalo Indian Buffalo Arna (*Bos bubalus*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	Indian Buffalo (*Bos bubalus*) India	2000
Yak (*Bos grunniens*)	*Ungulata* (Hoofed Mammals) *Bovidae* (Ox, Sheep, Goats)	Wild Yak (*Bos grunniens*) Of the Tibetan plateaus	2000

Historical Notes.

According to Chinese authorities, silk culture was begun by Si-Ling, wife of the emperor Hoang-ti, 2600 B. C. Silk cloth first mentioned among the Greeks by Aristotle. Silkworms brought to Constantinople from China by Greek missionaries 530, and introduced into Italy in the twelfth century. Cultivation has become important in Italy, Turkey, and Greece, and established to some extent in France, Spain, and Portugal. Begun in Georgia in 1732, later in the same century in Connecticut and Pennsylvania, and in 1821 extensively undertaken under encouragement of the United States government, but finally resulted disastrously and abandoned in 1846. Numerous subsequent attempts have been made, but as yet silk culture is not upon a commercial footing in the United States.

Semi-domestication dates to the period of the Roman emperors, when it was eaten for food, as it was also to some extent in mediaeval times. However, during the Middle Ages, swans became part of the regalia of European courts, only royalty being permitted to keep them. By English law they were declared birds royal and the position of king's swanherd was once an important office.

Domestication prehistoric, probably first effected in western Asia, and well established when the earliest records begin. A form was used by the Lake Dwellers of Switzerland. Early and frequently mentioned in the Bible. Possessed by the Greeks and Romans and alluded to in their early literature. Jason and the Argonauts sailed in search of the Golden Fleece. Used for its flesh, wool, and milk since time immemorial in large areas in Asia and Europe, and now diffused throughout the world. Introduced into Florida by the Spanish in 1565; into Virginia in 1609; into Massachusetts in 1624; into New York in 1625; into New Jersey and Delaware by the Swedes in 1634; into Pennsylvania in 1684; and into California by the Spanish missions from Mexico in 1773. The fine wool breeds are derived from the Spanish merino, which antedates the Christian era. The long wooled breeds, Cotswolds, Leicesters, and Lincolns, as well as the medium wooled Southdowns, Shropshire, Hampshire, and Oxfordshire Downs, have been developed in England.

The turkey was taken from the West Indies to Europe by the Spanish early in the sixteenth century, where it became established in domestication and thence was returned to America. It is the only domestic animal contributed by the New World in wide and valuable use, the llama and alpaca being confined to a narrow region in the Andes, and the guinea pig being insignificant in comparison. Its name is a contraction of the curious misnomer turkey cock given to it by the English, just as the French wrongly called Indian corn turkey wheat, though both the bird and the grain were American.

Long domesticated in India, Burma, and the Malaysian region. It spread westward during the Middle Ages, appearing in Italy about 600, where it became permanently established, and somewhat later was introduced into Gascony in France, into portions of Hungary, and other regions. In a truly wild state it is now found only in India though domesticated water buffaloes have frequently become wild again in various regions.

Domesticated since immemorial times by the inhabitants of the Tibetan plateaus. Yak tails are suspended as streamers from poles placed in front of Tibetan monasteries, and in China yak tails dyed red are mounted as pendants from the roofs of houses.

Economic Importance.

The source of the finest and most valuable textile fiber known, no other animal or vegetable substance capable of extensive production equaling its peculiar qualities, which have been held in high esteem since remote antiquity. Silkworm culture and the preparation of raw silk have been of age-long importance in China, Japan, and India, and since the Middle Ages of much consequence in western Asia and southern Europe.

The raw silk production of the world is approximately 40,000,000 pounds annually, of which the far East contributes two thirds, China exporting 17,000,000, Japan 8,000,000, and India 1,000,000 pounds respectively; western Europe over one fifth, of which Italy produces 7,000,000 pounds and France, Austria-Hungary, and Spain the remainder in the order named; while the remaining one tenth is produced in the Levant and western Asia, mainly by Syria, Anatolia, the Caucasus, Turkey, and Greece.

Now reared almost exclusively as an ornamental bird, adorning ponds, lakes, and rivers in many regions of the world. Although noted for its beauty and gracefulness, the swan is inferior to most tamed birds in intelligence and adaptability, and its domestication, which at most is only partial, has resulted in but slight changes of form and habits. So, while it is one of the most conspicuous and striking of birds, it is relatively of very little value to mankind.

The leading fiber producing animal of the world; very valuable also for flesh, milk, and leather. The production of sheep's wool immensely exceeds that of the goat, alpaca, and camel combined, and ranks far above silk culture in general economic importance. Sheep's milk is unimportant in countries supplied with milch cattle, but its flesh is highly esteemed and very widely used.

The sheep is the least intelligent member of the bovine family in full domestication, and it is the only one widely kept which does practically no labor for man.

Sheep are now reared throughout the world but are especially adapted to arid, desert, and mountainous regions, being notably abundant in Australia, Argentina, the western United States, Russia, South Africa, and Spain, and they also thrive in the cool, moist climates of England and France.

Domestication and selective breeding have greatly modified the sheep as to bodily size, length and quality of wool, presence and character of horns, and in the case of the so-called fat-tailed sheep, the tail has become enormously developed.

In the United States there are about 60,000,000 sheep, reported from over 750,000 farms, or from one out of each eight, with a total value of upwards of $200,000,000.

The largest domestic fowl, valuable and much prized for food, though neither its eggs nor feathers are used to an important extent. Notwithstanding it is a stupid bird, ranking low in intelligence, it is easily domesticated and the tame birds readily intermingle with the wild ones. While it needs considerable range and is inclined to wander, and therefore is not suited to small farms, it is comparatively easy to rear and stands second to the chicken in the United States, ranking above geese and ducks both in number and value, there being upwards of 6,500,000 turkeys, Texas reporting the largest number, and followed in order by Missouri, Illinois, Iowa, and Ohio.

Valuable for its flesh, milk, and as a beast of burden, being peculiarly suited to warm, moist countries, delighting in water and marshy situations. For centuries it has been employed for plowing and hauling wagons in the malarial plains of Italy. Now domesticated throughout India, Burma, the Malay Peninsula, and East India Islands, particularly Java, also in Asia Minor and Egypt. The buffalo ox is as well adapted for labor as the common ox; the buffalo cow gives more milk, but the flesh is considered inferior. The water buffalo has been but little modified in form, size, or habits by domestication, retaining its fondness for water, and during hot days it will lie almost completely immersed.

The chief wealth of the native peoples of high Tibet. As a beast of burden the yak is indispensable to commerce in that region, being strong, sure-footed, and able to withstand the rigorous climate. Its flesh is excellent in quality, the milk rich, and the curd is much used both fresh and when dried and made into a kind of meal. The butter is good, and in the cold climate is kept in bladders, forming an article of trade. The coarse hair of the yak is twisted into ropes and the fine hair is made into cloth.

DICTIONARY OF NATURAL HISTORY.

DIVISION OF PLANTS.

Abutilon (*Flowering Maple*). A genus of mostly shrubby tropical or semi-tropical plants containing about 90 species. A number are cultivated as pot and border plants. Leaves maple-like or vine-like; flowers one to two inches or more long, red, yellow, white, or variegated. *Abutilon Theophrasti*, known as velvet-leaf, introduced from India, is a troublesome weed, widely diffused in the United States.

Acacia. A large genus of plants of the Pea family (*Leguminosae*) containing about 450 species. Three hundred are native to Australia and Polynesia, the remainder are distributed in warm regions of the other continents except Europe, 17 occurring in the southern United States. All are shrubs or trees with finely divided leaves, and small flowers

ACACIA.

arranged usually in globular clusters. Many are of great value, yielding gums, timber, tan bark, and food products. Several species in Asia and Africa produce gum arabic. Gum senegal is the product of *Acacia verek* and the drug catechu of *Acacia catechu*. The tan bark known as the Black Wattle, four times as strong as oak bark, is obtained from the Australian *Acacia decurrens*. The most valuable timber acacia is the Australian blackwood (*A. melanoxylon*). Several acacias thrive in cultivation.

Acanthus Family (*Acanthaceae*). A large family of flowering plants containing about 175 genera and 1,800 species, mostly tropical herbs and shrubs, with but few representatives in the United States and Europe. Certain species of justicia and ruellia are fine hothouse plants. The wild, spiny acanthus (*A. spinosus*) and the cultivated acanthus (*A. mollis*) were known to the Greeks and Romans, who conventionalized the leaves extensively in architectural decoration of columns, friezes, and cornices.

Ailanthus (*Tree of Heaven*). A tall spreading tree (*Ailanthus glandulosus*) of the Quassia family (*Simarubaceae*), native of China, but now extensively planted for shade and ornament in Europe and the United States. The tree resembles the ash in foliage; thrives on light soils and is quite hardy, but the disgusting odor of the staminate flowers has caused it to be prohibited on public grounds of the United States government and to be regarded with increasing disfavor.

Alder. A genus (*Alnus*) of 18 or 20 trees and shrubs of the Birch family (*Betulaceae*), nine of which are North American, growing in cold and temperate climates. The best known species are: **Green** or **Mountain Alder** (*A. crispa* and *A. mollis*), shrubs 2 to 10 feet high, growing from Newfoundland to Virginia and northwest to Alaska. **Speckled** or **Hoary Alder** (*A. incana*), a shrub or a small tree, 8 to 25 feet high, in wet soil, eastern United States and Canada, also Europe and Asia. **Smooth Alder** (*A. rugosa*), 5 to 25 feet high, streams and swamps, eastern and southern United States. **Seaside Alder**, small tree sometimes 30 feet high, coast of Delaware and Maryland, and in Oklahoma. **Red Alder** (*A. oregona*), tree 30 to 80 feet high, California to Alaska. **White Alder** (*A. rhombifolia*), small tree 20 to 35 feet high, Pacific States. **Black Alder** (*A. glutinosa*) of Europe, tree 30 to 60 feet high, often planted and locally naturalized in the United States. Wood, light, inferior for fuel, but valuable in use under water for piles, pumps, and sluices.

Algae. The lowest and most primitive forms of plant life, the fungi being regarded as having been derived from various groups of algæ; bacteria, for example, probably originated in the lowly blue-green algae, and molds from a higher algae group. The algae and fungi are thus closely interrelated and the distinction between them founded upon the presence or absence of chlorophyll is largely one of convenience.

Fucus. SEAWEEDS. Sargassum.

Four classes of algae are readily distinguished: *Cyanophyceae*, blue-green algae; *Chlorophyceae*, green algae; *Phaeophyceae*, brown algae; *Rhodophyceae*, red algae.

Cyanophyceae, Blue-green Algae, characterized by extreme simplicity of cell structure, and reproducing only by fission, are most abundant in warm shallow waters and moist places. Highly colored growths occur in the warm springs of the Yellowstone region, and the tint which gives the name to the Red Sea is due to the immense abundance of floating filaments of Trichodesmium.

Chlorophyceae, Green Algae. In this class the clear green of the chlorophyll is not masked by various colored pigments as in the other classes. There are one-celled groups such as protococcus and the beautiful desmids and diatoms and a wide range of the more complex forms, including the confervae and pondscums, terminating in conspicuous types, such as the sea-lettuce (*Ulva*) and stoneworts (*Chara*). Sexual reproduction and alternation of generations are exhibited in the higher types of this class.

Phaeophyceae, Brown Algae, so called because a brown pigment masks the green chlorophyll, are almost exclusively marine and embrace a vast array of the larger seaweeds, mostly of cold waters. Great kelps (*Macrocystis*) in the Pacific are said to grow 900 feet long. The Gulf weeds (*Sargassum*) and the rock weeds (*Fucus*) are immensely abundant, some of the latter being the most highly complex of the algae.

Rhodophyceae, Red Algae, so named by reason of a reddish pigment which obscures their chlorophyll, comprise the red seaweeds, the most beautiful of all algae, varying in form from delicate filaments to broad, membranous, or cartilaginous structures, the most striking being the corallines, which resemble corals on account of incrusted lime deposits.

Alkanet (*Anchusa*). A genus of the Borage family (*Boraginaceae*), some species of which yield valuable dyes. The most important, *Anchusa tinctoria*, the true alkanet, is a native of southern Europe and the Levant, and yields the beautiful red coloring matter known as alkanet.

Aloe. A large genus of plants of the Lily family (*Liliaceae*), native to warm regions, particularly South Africa and the island of Socotra, where vast hilly tracts are entirely covered by various species. All have permanent, fleshy leaves, often strongly resembling those of the agave or century plant, which is sometimes wrongly called American Aloe, and range from a few inches to over twenty-five feet in height.

Some species yield fiber and dyestuffs but their greatest value lies in medicinal properties, the important drug, aloes, being the dried juice of the leaves of a number of large tree-like kinds, notably *Aloe socotrina* and *Aloe Perryi*, yielding socotrine aloes; several South African species yielding Cape aloes; and *Aloe vera* of the East and West Indies, also grown in Europe, yielding Hepatic or Barbados aloes. The juice was anciently used in embalming.

Alpine Plants. The flora of mountains which approach the line of perpetual snow, or of high latitudes where similar conditions prevail. These conditions produce dwarfed or stunted plants characterized by large, bright-colored flowers strongly attractive to the restricted insect life of the region, and by a habit of growth in close tufts, forming mats or carpets. Saxifrages, arenarias, heath forms, particularly azaleas and rhododendrons, primroses, gentians, and small ferns, are prominent in alpine vegetation, which is essentially Arctic vegetation, as it results from practically identical conditions.

Alternation of Generations. The alternate occurrence in the life history of a plant of two or more forms differently produced. In ferns, for example, there are two distinct generations. One is asexual, that is, producing not male or female elements but spores. This is the ordinary form of these plants with which we are familiar. The other is a minute flattened leaf-like organism which grows from the fallen spore on damp soil, stones, and wood. But this inconspicuous form is sexual, developing organs which produce egg cells and spermatozoids which fertilize and by their growth again give rise to the asexual generation, which we recognize anew as the fern. Neither the sexual nor the ascxual form of these plants can reproduce itself directly. It must first pass through the other form, i. e., there must be an alternation of generations. Botanists now recognize a like alternation in the higher or flowering plants, although the sexual generation is microscopic and lies concealed within the asexual or spore-bearing plants, so that the law of alternation of generations has been demonstrated to prevail throughout the plant world.

Alyssum. A genus of the Mustard family (*Cruciferae*), consisting of about 100 species, natives of the Old World, mostly small perennials, many of which are called madwort. A number of European species and varieties have been developed in cultivation as ornamental plants. The well known sweet alyssum (*Lobularia maritima*) is annual; widely grown as a border plant.

Amaranth (*Amaranthus*). The principal genus of the Amaranth family, embracing some 300 species, mostly tropical herbs. About 30 species grow in the United States, chiefly coarse weeds such as pigweed and tumbleweed. *Amaranthus blitum* and *Amaranthus oleraceus* are used as pot herbs in Europe. The seeds of *Amaranthus frumaceus*, called kiery, are used as food in India. The flowering heads of several species assume monstrous forms in cultivation, such as love-lies-bleeding (*Amaranthus gangeticus*) and prince's feather (*Amaranthus caudatus*).

Amaryllis. The typical genus of the Amaryllis family, containing many species, natives of warm regions, which possess flowers of great beauty. The South American species, *Amaryllis formosissima*, was brought to Europe about 1700 and has become commonly cultivated in gardens.

Amaryllis Family (*Amaryllidaceae*). A natural order of monocotyledonous plants, embracing nearly 1,000 species, mostly tropical, and adapted to dry regions, usually bulbous, leafing and flowering only in the wet season. The most important type economically considered is the strictly American genus Agave, including 140 species, among which are the century plant, or maguey, and sisal hemp. Narcissus, amaryllis, and galanthus are extensively cultivated ornamental plants. Only a few are native to the eastern United States; the most common is the small yellow-flowered stargrass (*Hypoxis hirsuta*).

Andropogon. A genus of grasses (*Gramineae*) of 150 species of world-wide distribution, a number of which are of great value. Johnson grass (*Andropogon halepense*), cultivated in southern United States since 1830, is highly prized for hay. The blue-stem grasses (*Andropogon nutans, A. provincialis*, and *A. scoparius*) are valued for hay in the prairie regions of the Mississippi valley and the great plains. An Indian species (*A. squarrosus*) yields the perfume vetiver, from its roots, and the tropical species (*A. schoenanthus* and *A. nardus*) yield lemon oil and citronella used in perfumery.

Anemone (*Windflower*). A genus of the Crowfoot family (*Ranunculaceae*). There are about 90 species, mostly natives of cold and temperate northern regions, generally with beautiful flowers, blossoming in early spring. The **Wood Anemone** of Europe (*Anemone nemorosa*) and a very similar species of North America (*A. quinquefolia*) are delicately beautiful woodland plants flowering in April and May. The **Pasque Flower** (*Anemone pulsatilla* or *Pulsatilla vulgaris*) blossoms on English chalk hills about the same time. The **American Pasque Flower** (*Anemone patens var. Nuttalliana*, or *Pulsatilla hirsutissima*) during March and April adorns the prairies from Illinois to Saskatchewan and south to Nebraska and Texas. The **Garden Anemone**, with very numerous varieties long in cultivation, probably developed from two wild species of the Levant, *Anemone coronaria* and *Anemone stellata*, is a great favorite with florists. About 18 species grow wild in North America.

Angiosperms. A name, signifying "seeds in vessels," given to the greater group of the Spermatophytes, or seed plants, in contradistinction to the smaller group called gymnosperms, having "naked seeds." There are over 150,000 known living species of angiosperms, while the gymnosperms, though immensely more abundant in earlier geologic age, number only about 400 living species, so that the far greater part of the conspicuous vegetation of the earth belongs to the angiosperms, which are called the true flowering plants, for no others bear conspicuous flowers. There are two great natural divisions of the angiosperms, monocotyledons and dicotyledons, the former having one seed leaf or cotyledon and the latter two seed leaves or cotyledons.

Anise (*Pimpinella anisum*). An annual plant of the Parsley family (*Umbelliferae*), native of Egypt and other Mediterranean countries, much cultivated in southern Europe and particularly in Germany, for the seeds and oil; used as a condiment and in making liqueurs.

Annuals. Plants which flower during the first year of growth, and completely die after ripening seeds, are called annuals. The first plants brought into cultivation by the human race were almost exclusively of this group, and to-day it includes the most important economic plants, embracing all of the cereals, wheat, maize, rice, rye, barley, oats; the sorghums and millets, and many other valuable grasses; all fiber plants of the first order: cotton, flax, hemp, jute; the most valuable legumes, such as peas, beans, lupine, lentil, peanut, and many clovers and fodder plants; all of the common cucurbitaceous plants: watermelon, muskmelon, pumpkin, squash, and gourds; and many important vegetables: tomato, radish, mustard, lettuce, endive, okra, eggplant, and spinach; also carthamine, quinoa, sesame, and tobacco.

Aquatic Plants, or Hydrophytes, grow partly or wholly submerged in water. They do not, however, embrace the marsh plants. Among the lower forms, seaweeds and fresh water algae are noteworthy aquatics. Among flowering plants, the water buttercup (*Ranunculus*), the water lilies (*Castalia* and *Nymphaea*), and the pondweeds (*Potamogeton*) are widely distributed and conspicuous examples. Most aquatics are perennial, growing from roots fixed in the soil beneath the water, but some, like the duckweed (*Lemna*), float on the surface. Only rarely do aquatic plants produce flowers beneath the surface, as in the sea wrack (*Zostera*). In nearly all cases the flowers are developed above the water, and are fertilized by the wind and by insects like most flowering plants.

Aralia Family (*Araliaceae*). A natural order of plants closely related to the Parsley family (*Umbelliferae*), containing about 450 species, consisting of trees, shrubs, and herbs, growing in all climates, generally aromatic and possessing stimulant properties. The most important are the Aralias, Ginseng (*Panax*), and the English Ivy (*Hedera*).

Arbutus (*Madroña*). A genus of the Heath family (*Ericaceae*), comprising about 20 species of shrubs and small trees, mostly natives of Europe and North America. The branches are usually smooth and red, and the leaves evergreen and shining. The **Strawberry Tree** (*Arbutus unedo*), a native of southern Europe, is grown in California, but is not hardy in colder parts of the United States. The edible fruit resembles a strawberry, and is often made into sugar. The native **California Madroña** (*Arbutus Menziesii*) is often 80 to 100 feet in height. The Arizona Madroña (*Arbutus arizonica*), a tree 40 to 50 feet high, grows in high altitudes in California, southern Arizona, and Mexico. The **Texas Madroña** (*Madroña xalapensia*) is rarely more than 18 to 20 feet in height.

Arbutus, Trailing (*Epigaea repens*). A trailing plant of the Heath family, with branches 6 to 15 feet long and evergreen leaves, called Mayflower in New England and Ground Laurel in the Southern States. It grows in sandy or rocky soils, especially in the shade of evergreen trees, from Canada to Texas. Prized for its early blooming, delicate flowers, now gathered in considerable quantities for city flower markets.

Arctic Plants. On land within the Arctic zone, mosses and lichens are noteworthy for their great abundance and value as food for the reindeer and musk ox. The bog moss (*Sphagnum*) covers great areas, while species of *Hypnum* and *Polytrichum* are immensely abundant. There are many flowering plants, but the number of species is small compared to those existing in equal areas in warmer regions. Prominent examples are various rushes, sedges, saxifrages, heath forms, and rosaceous plants. Exactly speaking, trees do not occur, the Arctic species of the birch and willow being low-growing forms which are more nearly herbs than shrubs. A large proportion are xerophytic in character, with erect leaves which catch and make use of light from every direction. However, growth is actually retarded and stunted by the very continuity of light during the summer season, so that most Arctic plants are dwarfed and tufted in habit. Insects are abundant but limited in variety, being mostly short-tongued flies. Consequently, while Arctic flowers develop brilliant colors to attract insects, most of them are short tubed and of simple structure from the standpoint of fertilization. The plant life of the Arctic seas is inconspicuous but important as food for lower marine animals.

Artemisia. A genus of the Sunflower family (*Compositae*). There are about 200 species, natives of the northern hemisphere and southern South America. The flower heads are small and numerous and the leaves are generally much divided. The **Wormwood** (*Artemisia Absinthium*), and a number of other species, are used in the manufacture of absinthe. The dried flowers of *Artemisia santonica* and several other species are valued as a vermicide, known as wormseed. The young leaves of **Mugwort** (*Artemisia vulgaris*) are used in Germany for seasoning and for cleansing and healing wounds. **Southernwood** (*Artemisia Abrotanum*), a shrubby plant, native of southern Europe and Asia, is used in the manufacture of beer and to drive away moths. Many shrubby species, known as sage brush, grow in the western parts of the United States.

Arum Family (*Araceae*). A natural order of monocotyledonous plants, consisting of about 100 genera and 1,000 species, mostly natives of the tropics, usually stemless perennials with tuberous roots. Representations are few in number in temperate regions, there being only 10 species in temperate North America, of which the Jack-in-the-pulpit (*Arisaema triphyllum*), skunk cabbage (*Symplocarpus foetidus*), and the sweet flag (*Acorus Calamus*) are well known. The taro (*Colocasia antiquorum*), widely cultivated in the tropics, is the most valuable economic plant of the family. Many are greenhouse foliage plants, and the calla (*Richardia aethiopica*) is a very common house plant.

Ash (*Fraxinus*). A genus of the Olive family (*Oleaceae*) of about 40 species, mostly natives of Europe and eastern Asia, and about 12 are natives of North America. The best known species are: **Common Ash** (*F. excelsior*), a large tree 100 to 150 feet high, growing wild in southern Europe and northern Asia. The wood is tough, hard, and much used in carriage building, manufacture of agricultural implements, turnery, cabinet making, and for fuel. **White Ash** (*F. americana*), a large tree 45 to 90 feet high; Nova Scotia to Florida, westward to Minnesota and Texas. Used much the same as Common Ash. **Green Ash** (*F. lanceolata*), 40 to 50 feet high, Vermont to Florida, intermittently to Utah and Arizona. Used for same purposes as White Ash but less valuable. **Red Ash** (*F. pennsylvanica*), a small tree, rarely more than 40 feet high, growing in moist soil from New Brunswick to South Dakota, Florida, Alabama, and Missouri. Used the same as White Ash. **Blue Ash** (*F. quadrangulata*), 50 to 75 feet high, Ontario, Minnesota, and Michigan to Alabama, west to Iowa and Arkansas. Used in carriage building, for flooring and tool handles. **Black** or **Hoop Ash** (*F. nigra*), a large tree, 70 to 80 feet high, Newfoundland to Manitoba, south to Virginia and Arkansas.

Aspen. A name applied to two species of the genus *Populus* of the Willow family (*Salicaceae*), one a native of the United States, the other growing in Europe and Siberia. The **American Aspen** (*Populus tremuloides*), called **Quaking Aspen** or **Quaking Asp**, is one of the most widely distributed trees of North America, growing from Alaska and Newfoundland to lower California. A slender tree with light green bark, maximum height 100 feet. Wood soft, light, and largely used for manufacture of wood pulp. The **European Aspen** (*Populus tremula*) is a quick growing tree, 50 to 80 feet high. The wood is soft and porous, and is used in turnery and in interior finish for houses. The bark contains considerable salicin.

Asphodel (*Narthecium ossifragum*). A small plant of the Lily family (*Liliaceae*) with orange colored flowers blossoming abundantly in summer in European peat bogs. The specific name, *ossifragum*, signifying "bone-breaking," arose from the mythical belief that if eaten by sheep their bones would become brittle. In the United States the name bog asphodel is given to plants of the genus *Abama*.

Aster. A genus of the Sunflower family (*Compositae*) containing not less than 250 species, most abundant in North America. A number of perennial species are in cultivation as garden flowers. They bloom from July to November and are among the most valuable plants for border and roadside planting. The **New England Aster** (*Aster novae angliae*) is one of the most showy native American asters. The **China Aster** (*Aster chinensis*), a summer annual having more than 250 varieties, is the best known and most valued. It is a native of China and has been greatly improved by cultivation. It has a great variation in form and color.

Astragalus. A genus of the Pea family (*Leguminosae*) containing about 1,000 species, some 200 of which grow in the United States. They are shrubby or herbaceous plants commonly found in dry soils. *Astragalus gummifer*, which grows in western Asia, and a number of other species yield gum tragacanth. *Astragalus mollissimus* and several species called loco weeds, found on the western plains, have poisonous properties. Cattle and horses which eat them are said to lose all appetite for anything else, become deranged, and finally die.

Azalea. A genus of the Heath family (*Ericaceae*). There are about 40 species natives of North America and Asia. Mostly tall, branching shrubs with flowers of various colors. The *Azalea pontica*, a native of countries around the Black Sea and covering many mountain slopes, is a common garden flower in Great Britain. It varies with orange, red, and almost white flowers. The **Wild Honeysuckle** (*Azalea nudiflora*) grows in sandy or rocky woods from Canada to the southern part of the United States, and has long been cultivated in Great Britain. The flowers are pink to nearly white. The **Swamp Pink** or **Honeysuckle** (*Azalea viscosa*) abounds in swamps from Maine to Ohio, south to Florida and Texas, and is also cultivated in Great Britain. The flowers are large, white, and very fragrant. There are many hybrids of the Azalea.

Bacteria. Exceedingly minute, one-celled plants, the smallest known organisms, constituting one of the great groups of fungi known as *Schizomycetes* or fission-fungi. Bacteria are almost omnipresent, being found in the air, water, soil, nearly all foods and drink; are constantly present in the mouth, stomach, intestines, and in the external layers of the skin. The air of cities contains vast numbers, but they also exist in great numbers in country and even in mountain air. Water ordinarily called pure contains bacteria in abundance, spring water, artesian well water, and even sulphur spring water being abundantly

BACTERIA.

1. Hay Bacillus. 2. Spirillum. 3. Typhoid-fever Bacillus. 4. Butyric-acid Bacillus. 5. Planococcus. 6. Anthrax Bacillus among blood corpuscles.

supplied. There are two groups: Those which live upon dead animal or vegetable matter, **Saprophytes**; and those which subsist upon living animals or plants, **Parasites.** Saprophytic bacteria are beneficent in their action, being the cause of decomposition and decay, thus returning dead matter to its inorganic elements, so that it may again become food for plants. Parasitic bacteria include all of the harmful forms. Those which produce disease are called pathogenic, and are known to be the cause of many infectious diseases, such as diphtheria, influenza, tuberculosis, and probably all infectious diseases are due to their agency.

Ballast Plants. Plants growing on ballast, or distributed by ballast, the seeds being contained in it when loaded or falling upon it in transit. The study of the transportation of plants from one region to another in this manner has become of much interest to botanists.

Bamboo (*Bambusa*). A genus of about 25 arborescent grasses natives of southern and eastern Asia, one of which, the common bamboo (*B. vulgaris*), is not known growing wild although it is widely cultivated in the Old World, West Indies, and South America. The species range in height from 20 to 100 or even 120 feet, and sometimes attain a diameter of four to eight inches. The stem and leaves, particularly the wood, are put to innumerable uses in the East Indies and eastern Asia; nearly all articles of ordinary use, from houses and furniture to fences, carts, water pipes, cordage, matting, paper, boxes, and baskets, being wholly or largely made from bamboo products.

Banyan (*Ficus bengalensis*). A tree of the genus Fig (*Ficus*) of the Nettle family (*Urticaceae*), native of India and remarkable for its vast rooting branches. It grows 70 to 100 feet high and spreads over a great surface. The branches send shoots downward, which take root and become stems. The tree is extensively planted but grows wild only in the lower Himalayas and the Dekkan hills. The wood is light and of no value, but the white glutinous juice is used as an ointment, and bird lime is made from it. Gum lac is also a product of the Banyan.

Baobab (*Adansonia digitata*). An African tree of the Mallow family now naturalized in the East and West Indies. It is one of the largest trees known, often 30 feet in diameter, though only 40 to 70 feet high. It produces leaves resembling those of the horse-chestnut, white flowers about five inches broad, and a gourd-like fruit a foot in length, which is eaten by monkeys and called monkey-bread. The juice of the fruit is made into a beverage; the powdered bark is used like pepper, and the bark fiber is made into ropes and cloth. The only other species are the Australian cream-of-tartar tree (*A. Gregorii*) and the Madagascar baobob (*A. madagascariensis*).

Barberry (*Berberis*). A genus of 75 low shrubs, natives of temperate regions, the type of the Barberry family (*Berberidaceae*). They are chiefly used as ornamentals, but a few species produce an edible, currant-like fruit. The bark is used in dyeing and sometimes in tanning, and malic acid is extensively made from the berries in France. Of the 13 native species, the best known are the **American Barberry** (*Berberis canadensis*) of the Alleghany and Ozark mountains, and the so-called **Oregon Grape** (*Berberis Aquifolium*) of the Rocky Mountains and westward. The **Common Barberry** (*Berberis vulgaris*), introduced from Europe for border shrubbery, now grows wild in eastern New England.

Beech (*Fagus*). A genus of the Beech family (*Fagaceae*), containing about 16 species, four in the northern hemisphere and 12 in the southern. The **American Beech** (*Fagus americana*) is the only North American species. It is a beautiful tree 70 to 80 and sometimes 100 feet high, and is one of the most widely distributed trees of eastern North America. The wood is tough, close grained, and is largely used in the manufacture of tool handles, chairs, and for fuel. The small sweet nuts are sold in the markets of Canada and in some of the Western and Middle States. The **Common Beech** (*Fagus sylvatica*), forming pure forests in many parts of Europe, is a large tree 100 to 120 feet high. The wood is dark colored, solid, and very durable under water and is much used in cabinet making, for weirs, and for fuel. The bark is sometimes used in tanning. The nuts are used for the manufacture of beech oil and for feeding swine. The beech is often planted for hedges.

BAMBOO. Bambusa.

Begonia. A genus of plants of the Begonia family (*Begoniaceae*). There are about 350 species found in the tropics of both hemispheres, especially in Mexico and Central and South America. The cultivation of begonias was begun in 1777 and there are now hundreds of varieties of recognized merit. Some of the species are very popular house plants, known as Begonia, Elephant-Ears, Beefsteak Geranium, etc., grown for their handsome flowers and beautiful foliage.

Belladonna or **Deadly Nightshade** (*Atropa Belladonna*). A tall, bushy herb of the Potato family (*Solanaceae*), native of central and southern Europe, extending into Asia. The entire plant is poisonous, containing the alkaloid atropin. The leaves and roots are largely used in medicine.

Bergamot (*Citrus medica*). A variety of lemon, from the fruit of which oil of bergamot is extracted, much prized in perfumery.

Biennials are plants which require two seasons of growth to produce flowers and ripen seeds or fruit, usually growing the first year to store up surplus food in enlarged portions of the root, stem, or leaves for use the next year in maturing seeds and

fruit, after which the plant dies. While they are relatively few in number when compared to annuals or perennials among both cultivated and wild plants, several important vegetables are biennials such as the beet, cabbage, carrot, celery, parsley, parsnip, rape, turnip, and onion, although some forms of the cabbage are annual and some perennial and some forms of the beet and other biennials are sometimes perennial.

Big Trees. A term applied in America to the genus *Sequoia* of the Pine family (*Coniferae*), containing two species, both natives of California. The **Big Tree** (*Sequoia gigantea*) is the largest American tree, having an average height of 275 feet with a trunk 20 feet in diameter at the base. It sometimes attains a height of 320 feet with a trunk measuring 30 to 35 feet in diameter. The bark is often two feet thick. The Big Tree grows on the west side of the Sierra Nevadas at an elevation between 5,000 and 7,000 feet, from Placer to Tulare county, California. The **Redwood** (*Sequoia sempervirens*) is a tree 200 to 340 feet high and 10 to 15 feet in diameter, growing from the south border of Oregon to Monterey county, California. Rarely found more than 30 miles from the coast or over 3,000 feet above sea level. It is often cultivated as an ornamental tree in Europe. The wood is soft, light, and much used in building.

Birch (*Betula*). A genus of the Birch family (*Betulaceae*). There are about 28 species, natives of north temperate zones; 13 are North Americans. **Common Birch** (*Betula alba*), abounding in northern Europe, is a beautiful tree 60 to 70 feet

BIRCH. Betula. Flowering Branches.

high. The bark is used in medicine and dyeing, and it yields the birch tar employed in the preparation of Russia leather. **Red** or **River Birch** (*Betula nigra*) grows in the United States from Massachusetts to Iowa and Kansas, south to Florida and Texas. It is a slender tree, 70 to 90 feet high, which produces a hard, valuable timber. **Cherry, Black,** or **Sweet Birch** (*Betula lenta*) is a large tree, sometimes 80 feet high. Wood fine grained and valuable for making furniture, etc. The bark yields an oil identical with the oil of wintergreen. It grows from Newfoundland to western Ontario, Florida, and Tennessee. **Yellow Birch** (*Betula lutea*), a large tree, maximum height 100 feet. The timber is used in shipbuilding. From Newfoundland to Manitoba, south to Carolina and Tennessee. **Paper** or **Canoe Birch** (*Betula papyrifera*), a large tree, maximum height 80 feet. The bark on the young trees is of a beautiful white color, and is capable of division into thin sheets, used for making canoes, baskets, and ornaments. Newfoundland to Alaska, northern Pennsylvania, Michigan, and Washington.

Bittersweet or **Woody Nightshade** (*Solanum Dulcamara*). A plant with a long, climbing, shrubby stem, found in most parts of Europe and in Asia and introduced into the United States. A fluid extracted from the twigs is used in medicine. The woody vine (*Celastrus scandens*) is called bittersweet in the United States. The opening orange-colored pods, displaying the scarlet covering of the seeds, are very ornamental in autumn.

Bladdernut. A genus of the Bladdernut family (*Staphyleaceae*), natives of the north temperate zone, mostly small trees. The seeds contain a fixed oil which is slightly purgative. The wood is well suited for the purpose of the turner. The American Bladdernut (*Staphylea trifolia*) is a branching shrub 6 to 15 feet high.

Bloodroot (*Sanguinaria canadensis*). The only species of the genus *Sanguinaria* of the Poppy family (*Papaveraceae*). It has large handsome white flowers which bloom in April and May in rich woods in eastern North America; one of the earliest and most conspicuous spring flowers. The stem and root contain a red juice, and are poisonous when eaten.

Boneset (*Eupatorium perfoliatum*). A perennial herb of the Sunflower family, native of the United States, growing in moist soil. The leaves and flowering tops are much used in household medicine as a tonic.

Borage Family (*Boraginaceae*). A large order of dicotyledonous plants, containing some 85 genera and 1,500 species, mostly natives of northern temperate regions. They are usually herbs and shrubs. Some tropical species are timber trees, and some species are dye plants, but most are of slight economic importance, although the forget-me-not (*Myosotis*) and heliotrope (*Heliotropium*) are widely grown and highly prized for their flowers.

Box Elder or **Ash-leaved Maple** (*Acer Negundo*). A species of the Maple family (*Aceraceae*). One of the hardiest and most widely distributed trees of the United States, growing from Vermont to Florida, and westward to the Rocky Mountains. It grows rapidly and often reaches a height of 60 feet. The wood is soft, light, and is used for wooden ware and wood pulp. The sap is sometimes made into sugar.

Box Tree (*Buxus*). A genus of evergreen shrubs and small trees of the Box family (*Buxaceae*), sometimes treated as a part of the Spurge family (*Euphorbiaceae*). The Common Box, a native of Europe and Asia, sometimes attains a height of 20 feet. Numerous cultivated varieties bear trimming remarkably well and are much used for borders of walks and gardens. The hard, fine grained wood is exceedingly valuable, being much used in engraving and in the manufacture of mathematical instruments.

Brake. A name given to several species of ferns of the genus *Pteris*. The Common Brake or Bracken (*Pteris aquilina*) is very abundant in most parts of Europe and America and in parts of Asia and Africa. The leaves and stems are employed in dressing kid, and the root is used as a substitute for hops. It is sometimes fed to cattle.

Brazil Wood. A dyewood, the product of different species of *Caesalpinia* of the Pea family (*Leguminosae*), and forming a considerable export from Brazil. Much of the Brazil Wood of commerce is obtained from *Caesalpinia braziliensis*, a small tree about 30 feet high, native of the West Indies. The heart wood alone is valuable and is generally sent to the market in the form of sawdust. It yields a red coloring matter called brazilin, which is used by the dyer and calico printer and in the manufacture of red ink.

Bromelia Family (*Bromeliaceae*). A natural order of monocotyledonous plants, allied to the Amaryllis family, embracing some 35 genera and about 900 species, all tropical or subtropical, many of them epiphytic, and usually with spiny or scurfy leaves. The pineapple (*Ananas sativa*) and the Spanish moss (*Tillandsia*), which hangs in festoons on trees in the Southern States, are important representatives. Many species are in hothouse cultivation for their curious manner of growth and showy flowers.

Broom. A name given to a number of species of shrubs of the closely allied genera *Cytisus, Genista,* and *Spartium* of the Pea family (*Leguminosae*). Common Broom (*Cytisus scoparius*), a native of Europe, has been introduced into the United States. It grows in dry soils, ornamenting hedges and bushy places with its large yellow

flowers. The branches are very tough and much used for making besoms, and the young tops and seeds are used in medicine. The leaves are used in tanning and dyeing, and cloth is sometimes made from the fiber.

Buckthorn (*Rhamnus*). A genus of the Buckthorn family (*Rhamnaceae*), containing about 75 species, natives of warm and temperate regions. Five are natives of the United States. The fruit and bark yield yellow and green dyes. The **Common Buckthorn** (*Rhamnus catharticus*), a shrub or small tree 6 to 20 feet high, is a native of Europe and northern Asia and introduced into the United States. The bark affords a beautiful yellow dye, and the berries yield the sap green used in painting. The **Alder Buckthorn** (*Rhamnus Frangula*) is a native of Great Britain, and introduced into the United States. It is a shrub rarely more than 8 feet high. The bark, leaves, and berries are much used for dyeing. *Rhamnus Purshianus*, known as Cascara Sagrada, is a native of the Pacific States. It is a tree 15 to 20 feet high, and the bark is extensively used in medicine.

BUCKTHORN. Rhamnus.

Buckwheat Family (*Polygonaceae*). A well marked, natural family of dicotyledonous plants, embracing about 30 genera and 800 species, universally diffused in temperate climates. The foliage of these plants often contains an acid juice as in rhubarb (*Rheum*) and sorrel (*Rumex*) and sometimes acid blistering properties as in smartweed or water pepper (*Polygonum Hydropiper*). Leading genera are *Rumex*, containing the docks, sorrels, and canaigre; *Polygonum*, comprising the smartweeds, bindweeds, and bistort; *Fagopyrum*, buckwheat; and *Eriogonum*, embracing a large number of desert plants of the western United States known as wool-joints.

Buffalo Berry (*Shepherdia argentea*). A shrub of the Oleaster family (*Eleagnaceae*), a native of northwestern North America, which has recently begun to take rank as a fruit plant, the currant-like berries being used for jellies in the Rocky mountain regions.

Buffalo Grass (*Bulbilis dactyloides*). A common grass of the high western plains of the United States, ranging from Manitoba to Texas, where it is one of the best pasture grasses, but rapidly disappearing in many sections, due to overfeeding on the ranges.

Burdock (*Arctium*). A genus of plants of the Thistle family (*Compositae*), containing about six species, natives of Europe. Common Burdock (*Arctium Lappa*) is a native of Europe naturalized in the United States, where it has become a troublesome weed. The root is sometimes used in medicine.

Burgrass or **Sandbur** (*Cenchrus*). A genus of about 12 species of grasses growing in sandy soils in temperate and tropical regions. They bear sharp pointed burs which frequently cause trouble with sheep, their wool becoming matted with them.

Cactus Family (*Cactaceae*). A very distinct natural order of plants numbering about 1,000 species grouped in about twenty genera. With a few exceptions, practically all are natives of America, the great majority growing in Mexico and

CACTUS GROVE. California. Opuntia.

adjoining regions. They are fleshy, juicy plants, usually completely beset with sharp spines, with flat or cylindrical stem joints which resemble leaves, while the true leaves are small and scale-like. The flowers, which are produced upon the angles of the stems, are large and vividly colored; and in some of the night-blooming forms, such as the cereus, are remarkable for their fragrance. By reason of their peculiar structure they are especially adapted to arid regions, where a number are of economic importance. The tuña or prickly pear (*Opuntia*) is not only in wide use in Mexico and among the Indians of the southwestern United States, but is also a prized fruit in Mediterranean countries, where it has become thoroughly naturalized. When stripped of thorns, *Opuntias* make excellent fodder, and a thornless form developed by Burbank promises to be of value as a vegetable. Many forms of *Cereus*, *Mamillaria*, and *Echinopsis* are easily cultivated.

Calabar Bean. The seed of a twining, half shrubby plant (*Physostigma venenosum*) of the Pea family (*Leguminosae*), native of western Africa. It is highly poisonous and is used to produce contraction of the pupils of the eye, and for other purposes in medicine.

Calla. A genus of plants of the Arum family (*Araceae*). The only species, *Calla palustris*, is found in swamps in Europe, Siberia, and North America. The rootstock is sometimes made into bread.

Camellia. A genus of evergreen shrubs and small trees of the Camellia family (*Ternstroemiaceae*), natives of China, Japan, and northern India and extensively cultivated in greenhouses in Europe and the United States. The Japanese Camellia (*Camellia Japonica*), the best known species, has large rose-like flowers of various colors.

Camphor Tree (*Cinnamomum camphora*). A large evergreen tree of the Laurel family, from which camphor is made. It is probably a native of China but is cultivated in nearly all warm climates, being highly prized for timber as well as for the production of gum camphor.

Canaigre (*Rumex hymenosepalus*). A tannin producing plant of the Buckwheat family (*Polygonaceae*) resembling the sour dock. Its roots contain a larger percentage of tannin than any other plant. The rapid decrease in the supply of wild Canaigre has caused its cultivation to be undertaken and extensive plantations have recently been established in the southwestern United States.

Canna. A genus of reed-like plants of the Arrowroot family (*Marantaceae*) natives of tropical regions, noted for their showy flowers and ornamental foliage. Many forms are in cultivation, among them the common garden Indian Shot (*C. indica*) and the West Indian *Canna edulis*, which yields a starch or arrowroot called *tous-les-mois*.

Caper (*Capparis*). The true caper bush (*C. spinosa*), whose pickled flower buds are the capers of commerce, grows in Mediterranean countries, and is now cultivated in the Southern States. There are about 150 species of capparis, natives of warm countries, several of which are used like the true caper.

Capsicum. A genus of the Potato family (*Solanaceae*), containing about 90 species, natives of tropical America. They are in very general cultivation for their fruit, which is extremely pungent. Common Capsicum, often called Chile or Red Pepper (*Capsicum annuum*), is the most common species in cultivation. *Capsicum fructum* has great pungency and is the true Cayenne pepper.

Caraway. A plant of the Parsley family (*Umbelliferae*) growing wild in Europe and parts of Asia. It is cultivated for its aromatic seeds, which are used as medicine and as a condiment.

Carnation. A double flowering variety of the clove pink (*Dianthus Caryophyllus*), and one of the most popular flowers in cultivation. It is a native of southern Europe, where it has been in cultivation for 2,000 years. There are many varieties with various forms and colors, but the red, white, pink, and yellow varieties predominate.

Catalpa. A genus of trees of the Trumpet Creeper family (*Bignoniaceae*), containing about seven species, natives of eastern Asia, the West Indies, and two of the eastern United States. The Catalpa or Indian Bean (*Catalpa bignonioides*) has thin silvery gray bark, and reaches a maximum height of 60 feet. It is a native of the Southern States and is cultivated as an ornamental shade tree. The wood is light and of a fine texture, useful in cabinet work. The Western Catalpa or Catawba Tree (*Catalpa speciosa*) has thick rough bark and reaches a maximum height of 120 feet, growing wild from Indiana to Tennessee, and west through Arkansas and Missouri. It grows rapidly and is often planted as a timber tree as well as an ornamental tree in parks. The wood is soft and light, largely used for fence posts, railway ties, and occasionally for furniture.

Catmint or **Catnip** (*Nepeta Cataria*). A plant of the Mint family (*Labiatae*), native of Europe and Asia, and naturalized in the United States. So named because cats are fond of it. Occasionally used in medicine.

Cattail. A name given to two North American species of *Typha*, which grow in swamps and have their flowers in a close cylindrical spike at the top of the stem. The roots are sometimes eaten and the leaves are used in cooperage, being placed between the staves.

Cedar. A common name applied to a number of coniferous evergreen trees, properly, however, to species of *Cedrus*, the **Cedar of Lebanon** (*C. Libani*), the **Deodar** of India (*C. deodara*), and a north African species (*C. Atlantea*). Certain true pines are called cedar, also certain cypress trees. The **White Cedar** of the United States is more nearly a cypress (*Chamaecyparis thyoides*) and the so-called **Red Cedar** is a juniper (*Juniperus virginiana*).

Celandine (*Chelidonium majus*). A plant of the Poppy family (*Papaveraceae*) frequent in Great Britain and Europe, and introduced into the United States. All parts of the plant contain a yellow juice which is very acrid and burning to the skin. It is used to some extent in medicine, being a drastic purgative and in large doses an active poison.

Cereals. Those grasses which produce starchy, mealy seeds used for food, the name being derived from cerealia, or offerings to Ceres, the goddess of agriculture. The principal cereals are wheat, corn, rice, rye, oats, and barley, which, since time immemorial, have been grown more extensively than all other crops, constituting the chief source of food for man and domestic animals. The millets and sorghums, also coracan and Job's tears, are classed as cereals, and sometimes, though incorrectly, buckwheat is also included.

Cereus. A genus of the Cactus family and including some of its largest members, native to the arid regions of the southwestern United States and Mexico. A number are cultivated for their flowers. Those of the night-blooming species (*C. grandiflorus*) sometimes attain a diameter of eight inches, and are noted for their beauty and fragrance. The Great Cereus (*C. giganteus*) is frequent on the arid plains of Arizona and Sonora, where it grows 60 feet high, the fruit forming a staple food for the Indians.

Cherry, Wild (*Prunus*). Several North American trees and shrubs of the Rose family (*Rosaceae*). The **Wild Red Cherry** (*P. pennsylvanica*), a small tree 20 to 30 feet high, is common in rocky woods, in the Northern States. The fruit is small, with a thin pulp, and is often used domestically and in the preparation of cough mixtures. The **Wild Black** or **Rum Cherry** (*P. serotina*) is a large tree, often 80 feet high, very common east of the Rocky Mountains. The dark colored wood is valuable for cabinet making and the bark is used in medicine. The **Choke Cherry** (*P. virginiana*) is a shrub 8 to 15 feet high, rarely a small tree, growing from Newfoundland to British Columbia, south to Georgia and Texas. The **Western Wild Cherry** (*P. demissa*) is a shrub or small tree reaching a maximum height of 30 feet, found from Dakota to New Mexico, west to British Columbia and California.

Chrysanthemum. A genus of plants of the Sunflower family (*Compositae*) containing about 150 species, natives of northern Europe, the Canary Islands, East Africa, and Asia. The Chinese and Japanese chrysanthemums (*C. indicum* and *C. sinense*) are the parents of many forms now in cultivation in the United States. The flowers are of nearly all colors and shades. The **Oxeye Daisy** (*C. Leucanthemum*) is a common weed in pastures in the Atlantic States. The French chrysanthemum or **Marguerite** (*C. frutescens*) is extensively cultivated in France for ornamental purposes.

Clover or **Trefoil** (*Trifolium*). A large genus of plants of the Pea family (*Leguminosae*) containing about 250 species, most abundant in Europe, though about 60 are natives of the United States, being most numerous in California. A number are very valuable, being widely cultivated for fodder, pasturage, and as means of enriching the soil.

Club Mosses (*Lycopodiaceae*). A group of pteridophytes closely allied to the ferns, giant forms of which were immensely abundant in the Carboniferous Age, but sparingly represented among living plants, chiefly by species of *Psilotum* and *Lycopodium*, most abundant in the tropics. In temperate regions the club mosses have the aspect of large trailing true mosses and some have arbor-vitae-like leaves. A few species are used in medicine, and the dust-like spores of a true club moss form the well-known lycopodium powder.

Colocynth Gourd or **Bitter Apple** (*Citrullus vulgaris*). A plant of the Gourd family, growing chiefly in the Mediterranean region. The drug colocynth, extensively used in medicine, is obtained from the dried pulp of the fruit. While the fleshy portions are exceedingly bitter and drastic, the seeds are bland and much prized for food in North Africa.

Compositae (Composite, Sunflower, or Thistle family). The largest natural family of flowering plants containing some 800 genera and over 12,000 known species and estimated to embrace more than one tenth of all flowering plants. It is represented in all parts of the world, and in some regions constitutes a remarkably high percentage of the flora, in central Europe over one eighth, in California and Mexico over one sixth, in Chile over one fifth, and in southern Argentina one fourth, while in exceptional localities the proportion reaches one third as in the Andes of Chile. This family is now considered the most highly developed and specialized of all plants and is of recent geologic appearance, the earliest fossil composites being found in the upper Miocene.

There are three well-marked divisions: the **tubular flowered composites** (*Tubuliflorae*) of which the aster, golden-rod, and sunflower are familiar types; the **ligulate flowered composites** (*Liguliflorae* or *Cichoraceae*) rep-

resented by the dandelion, chicory, and lettuce; and the labiate flowered composites (*Labiatiflorae*) confined to the tropics and southern hemisphere. Important representatives are the true and Jerusalem artichokes, carthamine, endive, salsify, scorzonera, wormwood, southernwood, camomile, tansy, arnica, coltsfoot, pyrethrum, elecampane, and a large number of ornamental plants in cultivation such as the dahlia, chrysanthemum, China aster, immortelle, marigold, cornflower, coreopsis, cineraria. The economic value of this vast order is comparatively slight, not a single plant of prime importance having yet been developed in cultivation.

CYCAD. Cycas revoluta.

Conifers (*Coniferae*). The largest group of living gymnosperms; all trees and shrubs of temperate regions, rare in the tropics; mostly with evergreen, resinous, needle-shaped or scale-like leaves and producing a cone-like strobile containing the seeds, whence the name, conifer. There are some 32 genera and 300 species whose combined timber and resin products exceed in value that of every other order of plants, grouped in two families: the **Pines** (*Pinaceae*) and the **Yews** (*Taxaceae*). To the former belong the pines, spruces, hemlocks, firs, larches, cypresses, cedars, redwoods, and araucarias, and to the latter the yews, and the numerous species of *Podocarpus* of the southern hemisphere. The whole group was much more numerous in earlier geologic times.

Cork Oak or **Cork Tree** (*Quercus suber*). A species of oak, native of southern Europe and northern Africa, the spongy bark of which is the common cork of commerce. It ranges from 20 to 40 feet in height, attains a diameter of 5 feet, and sometimes lives 300 to 400 years, producing crops of bark for 150 years.

Cornflower or **Bluebottle** (*Centaurea Cyanus*). A popular garden flower in Europe and the United States, there being many varieties with flowers ranging from a beautiful deep blue to white. Native of Mediterranean countries and a common weed in European grain fields.

Cress. A name given to many plants the foliage of which has a pungent mustard-like taste and is used as a salad. The name is commonly confined to species of *Lepidium* of the Mustard family (*Cruciferae*).

Crowfoot Family (*Ranunculaceae*). A natural family of dicotyledonous herbs and climbing shrubs, consisting of about 40 genera and 600 species, natives of temperate and cool regions, often acrid and drastic and some are virulent poisons. Many **Buttercups** or **Crowfoots** (*Ranunculus*) are acrid when fresh, particularly the **Cursed Crowfoot** (*R. sceleratus*). The most poisonous are the **Aconites** (*Aconitum*), **Hellebores** (*Helleborus*), the **Larkspurs** (*Delphinium*), and the **Baneberry** (*Actaea*), while the **Yellow Root** (*Hydrastis canadensis*) and **Goldthread** (*Coptis trifolia*) contain powerful medicinal properties. The remaining plants of this family are mostly harmless, and embrace some of the most prized garden flowers, such as the **Virgin's Bower** (*Clematis*), **Anemone**, **Peony** (*Paeonia*), and **Columbine** (*Aquilegia*).

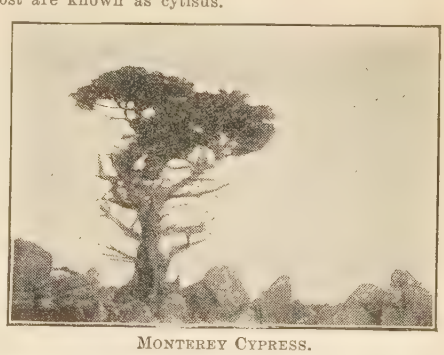
Custard Apple. A name commonly given to the fruits of certain trees of the genus Anona of the Custard Apple family (*Anonaceae*). Some of the fruits are among the most delicious produced in tropical countries.

Cycads (*Cycadaceae*). A family of gymnosperms, consisting of about 10 genera and 80 species of dwarf, palm-like trees, of limited distribution, chiefly in the tropics; economically valuable as the source of a kind of sago obtained from the interior of the trunk and from the mealy portion of the seeds. **Cycas revoluta** and **C. circinalis**, frequently met with in conservatories, are sago plants in Japan and in the Molucca Islands. The seeds of the **Mexican Cycad** (*Dioon edule*) yield a starch food. The cycads first appeared in the Carboniferous Age and became immensely abundant in Cretaceous time. The present species are merely remnants of a dying race, the scattered survivors of a great ancient group of plants.

Cyclamen. A small genus of plants of the Primrose family (*Primulaceae*), several species of which are cultivated in flower gardens on account of the beauty and fragrance of their flowers.

Cypress (*Cupressus*). Evergreen trees and shrubs of the Pine family, with small, imbricated leaves and globular cones, comprising about 12 species, in northern regions of the world. The **Common Cypress** (*C. sempervirens*) of Europe, now introduced, is famous for its durable wood, believed to be the cedar or gopher wood of the Bible. The **Monterey Cypress** (*C. macrocarpa*), a beautiful tree sometimes 150 feet high and 8 or ten feet in diameter, grows near the sea in California and three others occur on the Pacific Coast. The so-called **Cypress** or **White Cedar** (*Chamaecyparis thyoides*) of the Eastern States, and the **Bald Cypress** (*Taxodium distichum*) of southern swamps, well known and valued for timber, are strictly not true cypresses.

Cytisus. A genus of the Pea family (*Leguminosae*), natives of the Old World. There are about 35 species, all small trees or shrubs with yellow, white, or purple flowers, many of which are very beautiful. They are common in shrubberies and greenhouses and several species are cultivated as forage plants. Some are called broom, others laburnum, but most are known as cytisus.



MONTEREY CYPRESS.

Dahlia. A genus of the Sunflower family (*Compositae*), natives of Mexico. *Dahlia variabilis* and *Dahlia Juarezii* are the parents of most of the varieties in cultivation, of which there are now nearly 3,000, possessing a wide range of sizes and colors.

Dandelion (*Taraxacum officinale*). A perennial plant of the Sunflower family (*Compositae*), native of the old world, and possibly indigenous in western North America; now practically cosmopolitan by naturalization, being immensely abundant in pastures, meadows, and roadsides, throughout large areas of the United States. Formerly it was often employed in medicine, is still an ingredient in bitters and domestic remedies, and is used to some extent as

a pot herb. The **Fall Dandelion** (*Leontodon*), a related plant, readily distinguished by its more slender solid stipe, is also of European origin but widely naturalized in northeastern temperate North America.

Desert Plants are climatic groups especially adapted by many peculiarities of structure to withstand the excessive transpiration that would otherwise occur in an intensely dry atmosphere. Some, like the cactus, have succulent, fleshy leaves and stems, others are densely clothed with hairs, small scales or wax or having special structures guarding the pores; still others are bulbous, dying down after a brief period of rapid growth. The majority are shrubby and very woody throughout. A considerable number are either thorny or contain acrid and poisonous juices protecting them against the attacks of herbivorous animals.

Desmids. A large group of fresh water algæ, closely related to the diatoms; usually one-celled, bright green, and beautifully symmetrical in form, growing on plants and mud in ponds.

Diatoms (*Diatomaceae*). A family of one-celled, microscopic algae, existing in immense numbers at the bottom of the sea, lakes, ponds, upon submerged plants, and in damp places, numbering over 1,500 known species, characterized by great variety in form and markings of the silicious cell walls, being exceedingly beautiful objects and used to test the highest powers of microscopes, the fine lines of some species exceeding 100,000 to the inch. Fossil deposits occur in Bohemia, Virginia, Nevada, and California, known as diatomaceous earths, which are used as polishing powder.

Dicotyledons. The larger of the two natural groups of *Angiosperms*. They differ from the other group, Monocotyledons, most conspicuously as follows: The growing seed develops two seed leaves or cotyledons, whence the name; the stems increase in thickness by new growths of tissue on the outside of the woody portion between it and the bark; the leaves have open venation, i. e., are net-veined or reticulated; and the flower parts are usually in fours or fives. There are two groups of dicotyledons:—

Archichlamydeae, in which the corolla, if present, is composed of separate petals. The group includes the simpler and more primitive dicotyledons (often destitute of corolla and sometimes of the calyx also), numbering over 40,000 species, prominent families being: the tree groups, oak, walnut, elm, and willow, and allied families; the buttercups and their numerous allies, the poppies, mustards, water lilies, magnolias, the rose and saxifrage families, with their useful fruits, the pea family, largest of the group, numbering with its allies 10,000 species, and the parsley family, which is the highest of the archichlamydeae. **Metachlamydeae**, a group evidently developed from the preceding; distinguished by having petals united—i. e., sympetalous; the group contains the most highly organized plants, also numbering over 40,000 species. The leading alliances are the heath, convolvulus, gentian, polemonium, mint, nightshade, vervain, plantain, and related families, together with the Compositae, the largest family of angiosperms containing probably over 12,000 species and standing at the head of the whole plant kingdom in organic development.

Digitalis. A genus of plants of the Figwort family (*Scrophulariaceae*), natives chiefly of Europe and Asia. Purple Foxglove (*D. purpurea*), a native of Great Britain and naturalized in the United States, is much valued in medicine. Purple, white, and yellow flowered varieties are cultivated. The whole plant is poisonous.

Dogwood (*Cornus*). A genus chiefly of shrubs and small trees, the wood of which is exceedingly hard and is used for many purposes. The astringent bark and sometimes the leaves are used in medicine. There are about 25 species, some 18 of which occur in the United States. The **Flowering Dogwood** (*C. florida*) is a small tree, native of the Eastern States and frequent in cultivation. It has showy white petal-like bracts surrounding its clusters of small flowers.

Dutchman's Pipe (*Aristolochia macrophylla*). A twining vine of the Birthwort family (*Aristolochiaceae*) growing in rich woods from Pennsylvania to Georgia, west to Minnesota and Kansas, and often planted to form shady bowers.

Ebony. The hard, dark colored heartwood of a number of species of trees. Tropical species of the genus *Diospyros* of the Ebony family (*Ebenaceae*) are the source of most of the ebony of commerce. *D. ebeneum*, a large tree of India, Ceylon, and other tropical countries, furnishes the best quality.

Edelweiss (*Leontopodium alpinum*). A small perennial of the Sunflower family (*Compositae*) growing at high elevations in the Alps and often cultivated in gardens in the United States and Europe. It is famous because of its scarcity in the mountains and the supposed difficulty of obtaining it.

Eglantine. A name given to two species of rose: *Rosa rubiginosa* or *Sweet Brier*, a native of Europe and naturalized in the United States, which has sweet-scented pink flowers, and *Rosa eglanteria*, a West Asian species with yellow flowers which have an offensive odor.

Elder (*Sambucus*). A genus of the Honeysuckle family (*Caprifoliaceae*) containing about 20 species of shrubs or trees. The **American Elder or Elderberry** (*S. canadensis*) is a shrub 4 to 10 feet high, growing along fences and roadsides. The purplish black berries are sometimes used for making wine and other preparations. The **Mexican Elder** (*S. mexicana*), native of the southwestern part of the United States and Mexico, is a tree 25 to 30 feet high. The flowers are used in medicine. The **Western Elder** (*S. glauca*), a tree 30 to 50 feet high, very abundant in the Pacific coast region, is occasionally planted as an ornamental tree. The **European Elder** (*S. nigra*) is a large shrub or small tree with hard, tough wood, used as a substitute for boxwood. The berries are largely manufactured into wine.

Elecampane. A genus of the Sunflower family (*Compositae*). — The Common Elecampane (*Inula Helenium*), a native of Europe and naturalized in the United States, is the only important species. It was formerly extensively cultivated for its root, which is used in medicine.

Elm (*Ulmus*). A genus of the Nettle family (*Urticaceae*). There are about 16 species, 6 of which are natives of the United States. The **English Elm** (*U. campestris*), a tree 60 to 80 feet high, is one of the most important species. It is found in Europe, western Asia, northern Africa, and is naturalized in the United States. The wood is compact and very durable under water, much used in shipbuilding and wagon making. The **American White Elm** (*U. americana*) is a large tree 90 to 100 feet high, growing from Newfoundland to Florida and Texas. The wood is tough, strong, and largely used for wheel hubs, in cooperage, and for shipbuilding. It is a fine street and park tree. The **Cork Elm** (*U. racemosa*) is a tree 70 to 90 feet high, growing from Quebec and Vermont westward to Nebraska and Tennessee. The wood is considered the best of American elms, and is much used for agricultural implements and bridge timbers. The **Slippery** or **Red Elm** (*U. fulva*) is a tree 60 to 70 feet high, growing from Ontario to Florida, westward to Nebraska and Texas. The wood is durable in contact with the soil and is much used for fence posts and railway ties. The mucilaginous inner bark is used in medicine.

Epiphytes. Plants which grow upon the stems or other portions of larger plants for mechanical support, but do not to any important extent derive their food therefrom. They possess chlorophyll and are capable of creating their own food from inorganic elements. Illustrative examples are the **Long Moss** (*Tillandsia*) and various tropical orchids.

Everlasting. A name given to various plants whose flowers may be dried without losing their form or color, particularly to certain species of amaranth and *Helichrysum*. In the United States the name **Pearly Everlasting** is given to *Anaphalis margaritacea*, which grows in dry woodlands from Maine to Washington and Oregon and northward.

Ferns (*Filices*). The most important group of pteridophytes, comprising about 200 genera and over 4,000 species, widely diffused in moist regions, though most abundant in the tropics; ranging

in size from minute moss-like forms to the giant tree ferns of hot climates. Ferns are the most highly organized of non-seed-bearing or flowerless plants, possessing root, stem, and leaf structures with vascular tissues very similar to those of higher plants. The most striking difference is in their mode of reproduction. There is complete alternation of generations, the leafy plant being non-sexual and producing dust-like spores from modified portions of the leaf-like fronds. The spores germinate, and grow into minute flattened structures called prothallia, which are sexual, producing egg

TREE FERN.

cells and antherozoids; these by fertilization develop a new organism, which becomes the asexual, leafy fern. Although embracing some of the most striking and beautiful plants, ferns are of small economic importance. There are six families of true ferns (*Filices*):—

Osmundaceae, embracing the large royal ferns, often called flowering ferns, represented in the United States by three species of Osmunda. **Gleicheniaceae**, all tropical ferns. **Schizaeaceae**, climbing ferns, about 100 species, mostly tropical. The beautiful climbing fern or **Hartford Fern** (*Lygodium*) and the rare and curious **Curly Grass** (*Schizaea*) of the Eastern States are examples. **Hymenophyllaceae**, filmy ferns, 200 species, exceedingly abundant in the tropics, a few occurring in the Southern States. **Cyatheaceae**, a tropical group which includes the great tree ferns. **Polypodiaceae**, the largest and most highly developed family, numbering over 3,000 species, and including nearly all the true ferns of temperate regions.

Feverbush or **Spicebush** (*Benzoin aestivale*). A graceful shrub of the Laurel family (*Lauraceae*) with beautiful leaves and scarlet berries, common in the eastern United States. The bark is sometimes used in treating fevers, and the seeds are occasionally substituted for allspice.

Fir (*Abies*). A genus of the Pine family (*Coniferae*) containing about 25 species, natives of the cooler portions of the north temperate zone. The **Silver Fir** (*A. picea*), a common tree in central Europe, attaining a height of 150 to 200 feet, is the source of the Strassburg turpentine. The **Balsam Fir** (*A. balsamea*) is a tree 50 to 80 feet high, growing from Virginia northward. Canada balsam is made from the sap. The **White Fir** or **Great Silver Fir** (*A. grandis*) is a large tree, often 300 feet high and 10 feet in diameter, growing from British Columbia to lower California. The wood is soft and extensively used for cooperage and boxes. The **Red Fir** (*A. nobilis*) is a large tree 150 to 200 feet high, found in the same regions as the white fir. It is often planted in Europe as an ornamental tree. The **Mexican Fir** (*A. religiosa*) is a magnificent silver-leaved tree 150 feet high.

Forget-me-not (*Myosotis*). A genus of the Borage family (*Boraginaceae*) with small, usually blue flowers. A number of species are common in America. The flower is esteemed for its delicate beauty, and is widely regarded as an emblem of friendship.

Foxtail Grass. A name applied to certain species of two very dissimilar genera of grasses, *Alopecurus* and *Setaria*. There are about 20 species, natives of both hemispheres. **Meadow Foxtail** (*A. pratensis*) is one of the best meadow and pasture grasses of Europe and has become established in the United States. **Jointed Foxtail** or **Water Foxtail** (*A. geniculatus*) is very common in moist places in many parts of the United States and cattle are very fond of it. The common **Yellow Foxtail** (*S. glauca*) and the **Green Foxtail** (*S. viridis*) are exceedingly abundant weeds growing everywhere in cultivated ground. The true millets, which are also species of *Setaria*, are sometimes called foxtail grass.

Fuchsia. A genus of the Evening Primrose family (*Onagraceae*), named in honor of Leonard Fuchs, containing about 70 species, mostly natives of tropical America. Some are climbers, some small trees, but the majority are shrubs. Several species are largely cultivated in greenhouses because of the beauty and fragrance of their flowers. A great many varieties have been developed, mostly from *Fuchsia macrostemma*, which first became popular about 1790.

Fungi. A great group of thallophytes, of which there are upwards of 35,000 known species, some 8,000 being North American, ranging in size from the minutest organisms known to thread-like masses several feet long, some of which develop reproductive bodies a foot in diameter (puff balls) and in color from white to yellow, blue, red, and black. All derive their sustenance either directly from living plants and animals (parasitic) or from dead or decomposing organisms (saprophytic). There are six classes: **Schizomycetes**, Bacteria; **Myxomycetes**, Slime molds; **Phycomycetes**, algae-like fungi, molds; **Ascomycetes**, sac fungi, lichen fungi; **Basidiomycetes**, Basidium fungi, Mushrooms; **Saccharomycetes**, Yeasts.

MOLD. Penicillium.

Furze (*Ulex europaeus*). A thorny evergreen shrub of the Pea family (*Leguminosae*), with beautiful yellow flowers, naturalized in the United States from Europe.

Gentian (*Gentiana*). A genus of the Gentian family (*Gentianaceae*) containing about 300 species, mostly natives of the North Temperate and Arctic zones and the Andes of South America. The **Common** or **Yellow Gentian** (*G. lutea*) which is abundant in meadows of the Alps and Pyrenees, is valued for its seed which is used in medicine. The **Soapwort Gentian** (*G. Saponaria*) is extensively used in the United States as a substitute for Common Gentian. It grows in wet soil from Ontario to Minnesota, Florida, and Texas. **Fringed Gentian** (*G. crinita*) celebrated for the beauty of its flowers, which are large, blue, and fringed on the margins, occurs from Quebec and Minnesota south to Georgia and Iowa. The **Downy Gentian** (*G. puberula*), with blue funnel-shaped flowers is a common garden plant.

Geranium. A genus of the Geranium family (*Geraniaceae*), containing about 150 widely distributed species, 10 of which are natives of the United States. The **Herb Robert** (*G. Robertianum*) is a low-spreading herb with small red-purple flowers,

found in eastern North America, Europe, Asia, and northern Africa. It has astringent properties and is used in medicine. The **Alumroot** or **Wild Cranesbill** (*G. maculatum*), which has beautiful rose-purple flowers, is the most valuable, medicinally, of all the species. It grows from Manitoba south to Georgia, Alabama, and Missouri. The name cranesbill is given to a number of species. The plants commonly cultivated in gardens and greenhouses under the name of Geraniums are species of *Pelargonium*. There are about 125 species mostly natives of the Cape of Good Hope, prized on account of the brilliant colors of the flowers and the shape and markings of the leaves.

Gillyflower. A name applied to a number of plants of the Mustard family (*Cruciferae*), prized for the beauty and fragrance of their flowers. The name is used mostly to denote species of *Chieranthus* and *Matthiola*.

Ginger (*Zingiber*). A genus of the Ginger family (*Zingiberaceae*). The species, of which there are about 20, are perennial herbs, natives of the East Indies. The root stock of most species is used in medicine and as a condiment. The most valuable is the Common or Narrow-leaved Ginger (*Z. officinale*), which is cultivated in most tropical countries. Zerumbet, or Broad-leaved Ginger (*Z. zerumbet*), cultivated in Java, has a rootstock less pungent than that of Common Ginger. Mioga (*Z. mioga*) is much used in Japan. *Asarum canadensis* of North America, called Wild or Indian Ginger, is sometimes used as a substitute for true ginger.

Ginkgo or **Maidenhair Tree** (*Ginkgo biloba*). The only living representative of a geologically important group of gymnosperms, long cultivated for ornament and only recently discovered in the wild state in western China. It is a beautiful tree sometimes 100 feet high, with thickish, veiny deciduous leaves, in contour strongly resembling those of the maidenhair fern.

Ginseng. A name given to two species of Panax of the Ginseng family (*Araliaceae*), the roots of which are highly esteemed as a medicine by the Chinese. The Chinese Ginseng (*Panax ginseng*) is a perennial herb one to two feet high, cultivated in China and Korea. The American Ginseng (*P. quinquefolium*) grows from the Mississippi river eastward. On account of the great demand for the root in China, where it commands a high price, numerous attempts have been made to establish it profitably in cultivation in the United States, but so far without marked success.

Gladiolus. A genus of the Iris family (*Iridaceae*), and largely native of South Africa. Most of the species have flowers of great beauty, some of them being among the finest ornaments for borders and greenhouses.

Golden-rod (*Solidago*). A large genus of the Composite family, closely related to the aster, and containing upwards of 75 species, most of which are North American, some 50 different gelden-rods occurring in the eastern United States. On account of its abundance, wide distribution, and richness of color the golden-rod has been called the national flower.

Grasses (*Gramineae*). An immense well-defined family of monocotyledonous plants, consisting of some 3,500 species, universally diffused and abundant, forming a very considerable portion of the vegetation of most regions and including the most valuable plants used by man. Grasses are mostly herbaceous though a few, like the bamboo, are woody; usually with round or slightly flattened stems, solid at the joints; possessing alternate leaves, with tubular sheaths having free overlapping edges, and a ligule on the side opposite to the sheath; and the grain (commonly called the seed but in reality the fruit) grooved on one side, with the embryo on the outside of the starchy perisperm; being thus distinguished from their nearest very numerous, but comparatively valueless relatives, the sedges, which have solid, often angular, stems, and leaves with tubular, closed sheaths, lacking ligules and with the embryo within the perisperm.

In cool temperate and cold regions the true stems of perennial grasses usually grow in an interlacing protective network below the surface of the soil, forming a more or less dense turf or sod from which are sent up annual growths or culms, commonly but inaccurately called stems. In the tropics perennial grasses grow individually erect, similarly to annual species; consequently there is no true turf in hot countries and only partial turf in warm temperate regions—it being difficult to establish it even by artificial means in the southern United States—and such regions are largely dependent upon annual grasses for pasturage and hay. Grasses are of inestimable value: first, by reason of their starchy, mealy seeds—all of the cereal grains being grasses—and, second, on account of their stems and leaves, which constitute the chief pasturage, fodder, and forage for domestic animals, thus directly and indirectly providing man with the greater part of his food both vegetable and animal.

Greasewood (*Sarcobatus vermiculatus*). A somewhat shrubby and spiny plant, 2 to 10 feet high, of the Goosefoot family, very abundant in alkali soils of the interior plateau region from Montana to Mexico and west to the Sierra Nevada.

Ground Cherry (*Physalis*). A genus of herbs of the Potato family (*Solanaceae*) having an inflated calyx which incloses a small, many-seeded berry. There are nearly 50 species, about 35 occurring in the United States, some of which are sparingly cultivated for the sweetish fruit used in preserving, and one species, the **Chinese Lantern Plant** (*P. Francheti*), for ornament, owing to its showy scarlet or crimson bladder-like calyx.

GINKGO.

Gymnosperms. The smaller of the two groups of seed plants, *Spermatophytes*, distinguished by bearing naked seeds, while the other group, the Angiosperms, bears seeds, which are covered, that is, inclosed in an ovary. Gymnosperms constituted a large part of the forest vegetation of the Coal Measures, but the living representatives of that vast ancient array are few in number. Two groups are extinct, and the existing species, of which there are about 400 (as compared to upwards of 100,000 Angiosperms), belong to four groups: (1) **Coniferae**, the largest and most important of the living forms, containing the valuable timber trees, pine, fir, spruce, cedar, hemlock, redwood, cypress, and yew. (2) **Cycads**, fern-like tropical forms, very limited in distribution, containing some 80 species. (3) **Gnetums**, very remarkable in form, peculiar to arid regions and certain portions of the tropics comprising only about 30 species of Ephedra, Tumboa, and Gnetum. (4) The **Ginkgo**, which is the only living representative of a formerly important group.

Halophytes. Plants which grow naturally in salty or alkaline soils or waters. The greater portion grow in the ocean and along its shores, but there are large areas of halophytic plants in dry regions where salt lakes formerly existed.

Hazelnut (*Corylus*). A genus of shrubs or small trees of the Birch family (*Betulaceae*), of about 7 species, natives of the Northern Hemisphere. The **American Hazelnut** (*C. americana*) is a shrub 3 to 8 feet high, growing in thickets from

New England to Ontario and Dakota and southward. The **Beaked Hazelnut** (*C. rostrata*), a shrub similar to the preceding, is found in the Pacific Coast region and also in the Eastern and Middle States. The **Common Hazel** or **Filbert** (*C. Avellana*), an Old World species with numerous varieties, is extensively cultivated in Europe.

Heath Family (*Ericaceae*). A large, well-marked natural family of dicotyledonous plants, consisting of about 55 genera and 1,050 species, mostly small shrubs, natives of heathy and boggy tracts, especially in subalpine and alpine localities throughout the world. The foliage is usually astringent and in many species of **Rhododendron**, **Azalea**, **Andromeda**, and **Kalmia** it is dangerously poisonous. The fruits of **Gaultheria** are edible and also yield the oil of wintergreen. Many species are highly prized in cultivation for their flowers. To this family belong **Blueberries**, **Huckleberries**, and **Cranberries**.

Heliotrope (*Heliotropium*). A genus of the Borage family (*Boragineae*) containing about 115 species, many of which have fragrant flowers used by perfumers. The **Peruvian Heliotrope** (*H. peruvianum*), a small shrub seldom more than two feet high, with lilac-blue flowers, is in almost universal cultivation for its fragrance, which resembles that of vanilla. The **European Heliotrope** (*H. europaeum*), a native of Europe and naturalized in the United States, has small white or rarely pale red flowers. The **Seaside Heliotrope** (*H. curassavicum*), a white-flowered species, is found in the southern, central, and western part of the United States. Many hybrid heliotropes, which exhibit great variety in size and color of the flowers, are cultivated in flower gardens and greenhouses.

Hemlock Tree (*Tsuga*). A genus of the Pine family (*Coniferae*), containing about seven species, four of which are natives of North America. The **Common Hemlock** (*Tsuga canadensis*) is a large tree sometimes attaining a height of 110 feet, and growing from Nova Scotia to Alabama and west to Wisconsin and Minnesota. The wood is light and soft and is extensively used in building. The bark is largely used in tanning and hemlock oil is distilled from the branches and leaves. There are many cultivated varieties which are very ornamental. The **Carolina Hemlock** (*T. caroliniana*) is a tree attaining a maximum height of 80 feet, and growing in Virginia, North Carolina, and Georgia.

Hickory (*Carya*). A genus of the Walnut family (*Juglandaceae*), containing 10 species, natives, exclusively of North America. Their timber is very heavy, strong, and tough, and is much used in the manufacture of agricultural implements, carriages, and hoops for casks. The fruit is a hard-shelled nut, which in some species has an excellent flavor. The **Pecan** (*C. illinoensis*) is a large, slender tree reaching a maximum height of 170 feet and a diameter of 6 feet. It grows in moist soil, especially along streams, from Indiana to Iowa and Missouri, south to Kentucky and Texas. It is cultivated in the Southern States for its sweet, edible nut, which forms an important article of commerce. The **Shagbark** or **Shellbark Hickory** (*C. ovata*) is a large tree, sometimes 120 feet high, growing in rich soils from Ontario and Minnesota south to Florida, Kansas, and Texas. The nuts form an important article of commerce, though less used than the pecan. The **Whiteheart Hickory** or **Mockernut** (*C. alba*) is a large tree 75 to 100 feet high, growing from Ontario to Florida, occasionally to Missouri and Texas. It has a thick-shelled, edible nut. The **Pignut Hickory** (*C. glabra*), a tree 75 to 100 and sometimes 120 feet high, ranges from Ontario to Florida, westward to Nebraska and Texas. The nuts are bitter and not edible.

Holly (*Ilex*). A genus of trees and shrubs of the Holly family (*Aquifoliaceae*). There are about 160 species, mostly natives of America and about 12 are natives of the United States. The **American Holly** (*I. opaca*), a slow-growing tree, sometimes 50 feet high, is found from Maine to Florida, west to Missouri and Texas; occasionally cultivated as an ornament in parks. The wood is white, hard, and much used in cabinet making, interior finish for houses, and in turnery. The branches are used in large quantities for Christmas decorations. The **Dahoon Holly** (*I. Cassine*) is a small tree about 25 feet high, growing in low woods from southern Virginia to Florida, west to Louisiana. The leaves are sometimes used for tea. The **Common Holly** (*I. Aquifolium*), the only European species, is grown in parks and shrubberies in Great Britain and is occasionally planted in the southern and middle portions of the United States. It sometimes attains a height of 50 feet.

Hollyhock. A plant of the Mallow family (*Malvaceae*), common in gardens throughout the world. It has a tall stem with large flowers which vary exceedingly in color, and double and semi-double varieties are common.

Holy Grass (*Hierochloe borealis*). A sweet smelling grass about a foot high, found in the northern United States, Canada, and northern Europe. It is of little value as forage, but in Iceland it is used for scenting apartments and clothes. Its use in scenting churches gave rise to the name holy grass.

Honey Locust (*Gleditsia triacanthos*). A beautiful thorny tree, 70 to 80 feet in height, belonging to the Pea family (*Leguminosae*), and native of rich valleys from Ontario through the basin of the Mississippi. Sometimes the trunk is almost completely covered with bunches of branching thorns. It derives its name from the sweet, jelly-like pulp that surrounds the seeds, which are borne in conspicuous bean-like pods.

Honeysuckle (*Lonicera*). A genus of the Honeysuckle family (*Caprifoliaceae*), containing about 100 species; erect or twining shrubs, about half of which are in cultivation. The **Trumpet** or **Coral Honeysuckle** (*L. sempervirens*) is a twining green shrub, native of the United States, and often planted on account of its beautiful scented flowers, red on the outside and yellowish within. The **Common Honeysuckle** or **Woodbine** (*L. periclymenum*), an English species with fragrant cream-colored flowers, is frequently planted in shrubberies. The **Italian** or **Perfoliate Honeysuckle** (*L. Caprifolium*), a native of Europe and naturalized in the United States, is very similar to the English honeysuckle. The **Japanese Honeysuckle** (*L. japonica*) is common in the eastern United States, having escaped from cultivation.

Horehound (*Marrubium*). A genus of the Mint family (*Labiatae*). The **White Horehound** (*M. vulgare*) is much used in medicine. The name **Black** or **Fetid Horehound** is applied to *Ballota nigra*, another plant of the Mint family, closely resembling the white horehound and having similar medicinal properties. Both are natives of Europe and now widely naturalized in the United States, especially the white horehound.

Hornbeam (*Carpinus*). A genus of the Birch family (*Betulaceae*), containing about 12 species. The **Common Hornbeam** (*C. Betulus*) is a beautiful tree 60 to 100 feet high, very frequent in many parts of Europe. The wood is white, hard, and strong, and is much used by carpenters and wheelwrights. The **American Hornbeam, Blue Beech,** or **Water Beech** (*C. caroliniana*) is a small tree 35 to 40 feet high which grows from Quebec to Florida and west to Minnesota and Texas. The wood is very hard and heavy and is one of the toughest woods of the northern states. The **Hop Hornbeam** (*Ostrya virginiana*) has much the same habit, range, and properties.

Horse-Chestnut (*Aesculus*). A genus of the Buckeye family (*Hippocastanaceae*), containing about 11 species, natives of North America and Asia. The seeds are large and somewhat resemble chestnuts. The **Common Horse-chestnut** (*A. Hippocastanum*) is a large tree, sometimes 100 feet high, native of Asia and escaped from cultivation in the eastern United States. It is largely planted as an ornamental tree in all countries with temperate climates. The **Ohio** or **Fetid Buckeye** (*A. glabra*) is a tree reaching a height of about 50 feet, growing from Pennsylvania to Alabama, west to Michigan and Oklahoma. The wood is used for making artificial limbs and wooden ware. The **Sweet** or **Big Buckeye** (*A. octandra*) is a large tree 80 to 90 feet high, growing from Pennsylvania to Georgia, west to Iowa and Texas, and often planted as an ornamental tree. The **California Buckeye** (*A. californica*) is a small tree 30 to 40 feet high, native of California, sparingly planted for ornament.

Horsetails (called also Scouring Rushes). An order and family of pteridophytes, ranking next to the ferns, now consisting of the single genus Equisetum, containing about 25 species of world-wide distribution in wet places, several occurring in the United States. They range in height from a few inches to 12 or 15 feet, and outwardly resemble certain gymnosperms, but are entirely different from them in structure as well as from all other pteridophytes. Some contain so much silex that a polishing powder is made from the ashes of the stems. The fossil **Calamites** appears to have been a giant horsetail form of the Carboniferous Age.

COMMON HORSETAIL.
Equisetum arvense.

Huckleberry. A name properly applied to the genus *Gaylussacia*, but (especially westward) indiscriminately given to several species of *Vaccinium*, growing in the northern regions of Europe and America. The species range in height from a few inches to ten feet, and the berries vary greatly in form and color from one eighth to five eighths of an inch in diameter, and from black to blue, and white, and one species is red. Some are called **Blueberries** and others have various local names. None has yet been successfully cultivated, though large quantities of fruit from wild plants are marketed.

Hydrangea. A genus of about 25 species of ornamental shrubs of the Saxifrage family (*Saxifragaceae*), natives of North and South America, China, and Japan. The flowers are small and white, pink, or bluish in color. *Hydrangea Hortensia*, a dwarf variety, is extensively grown in greenhouses.

Hyssop (*Hyssopus officinalis*). An evergreen plant of the Mint family (*Labiatae*), with beautiful blue flowers. It is cultivated for its aromatic leaves, young shoots, and roots, which are used in medicine and for seasoning.

Ice Plant (*Mesembryanthemum crystallinum*). A tender greenhouse herb, native of Africa and southern Europe, remarkable for the glistening bladder-shaped hairs with which its surface is covered, and which sparkle in the sun like granules of ice.

Immortelle. A name applied to various species of *Helichrysum*, especially *H. arenarium*, grown extensively in France, which retain their form and to a considerable extent their color for a long time after gathering. Widely used in Europe and America for funeral decorations. (See EVERLASTING.)

Ipecacuanha (*Cephaelis ipecacuanha*). The name applied to a shrubby plant of the Madder family (*Rubiaceae*) growing in Brazilian forests, the roots of which are much used in medicine.

Ipomoea. A genus of the Morning Glory family (*Convolvulaceae*) containing about 400 species, mostly twining or trailing herbs. Many are cultivated for their beautiful flowers, as the morning glory and moonflowers; others for their thick fleshy roots, as the well-known sweet potato (*I. batatas*) and jalap (*I. purga*), much used in medicine. The **Cypress Vine** (*I. Quamoclit*), native of tropical America but now very common in the southern United States, has beautiful flowers and foliage. The **Common Morning Glory** (*I. purpurea*) is a native of Mexico but has escaped from gardens, becoming a weed in many parts of the United States. The **Moonflowers** are derived from *I. Bona-nox* and *I. grandiflora*. The flowers are pure white, striped with green and very fragrant. The **Wild Potato** (*I. pandurata*) is a troublesome weed, difficult to exterminate on account of its huge roots. *I. fastigiata* and *I. leptophylla*, both growing in the western United States, are noted for their immense roots, specimens of the latter often weighing 100 pounds.

Iris (*Flower-de-Luce, Fleur-de-Lis*). A genus of the Iris family, comprising about 100 species, most numerous in North America and Europe, with conspicuous, beautiful flowers, many of which are in wide cultivation. Others are prized for their roots, **Orris Root** being produced by three European species. The rootstocks in some species are edible. The **Blue Flag** (*I. versicolor*) is common in wet places throughout the Eastern States.

Ivy. A name given to a number of climbing, creeping, and twining plants. The true **English Ivy** (*Hedera Helix*), held in high esteem by the Greeks and Romans, grows throughout a large part of Europe and is cultivated as an ornamental vine for walls and rocks in the United States. It belongs to the Ginseng family, while the **Virginia Creeper** (*Psedera quinquefolia*), often called ivy, belongs to the Grape family, as does the **Japanese** or **Boston Ivy** (*Psedera tricuspidata*); the **Ground Ivy** (*Nepeta Glechoma*) is a mint, and the **Poison Ivy** (*Rhus*) belongs to the Sumach family.

Jack-in-the-Pulpit or **Indian Turnip** (*Arisaema triphyllum*). A common American herb of swampy woodlands belonging to the Arum family (*Araceae*), noted for its acrid bulbs, sometimes used in domestic medicine, and for the peculiar shape of the flower parts, giving rise to the name.

Jasmine (*Jasminium*). A genus of the Olive family (*Oleaceae*) containing about 100 species of shrubs or climbers, natives of the warmer parts of Asia. The **Common Jasmine** (*J. officinale*) is much cultivated in gardens for its fragrant white flowers, which are used in preparing oil of jasmine, a delicate perfume. It blooms from June to October. The **Spanish Jasmine** (*J. grandiflorum*), which has flowers still more fragrant than the common jasmine, is also used in preparing oil of jasmine. The **Italian Yellow Flowered Jasmine** (*J. humile*), a very common greenhouse variety, is hardy in open air as far north as Maryland.

Jessamine or **Jasmine, Yellow** or **Carolina** (*Gelsemium sempervirens*). A beautiful climbing vine of the Logania family (*Loganiaceae*), which grows in woods and thickets from Virginia southward. Its yellow funnel-shaped flowers have a fragrance similar to that of true jasmine. The plant is extremely poisonous like many others of the family, which includes the deadly *Strychnos Nux-vomica*, and furnishes a powerful drug used in medicine.

Job's Tears (*Coix Lachryma-Jobi*). A cereal of the East Indies closely related to maize, deriving its name from the hard, shining, tear-like seeds, sometimes used similarly to beads in necklaces and rosaries. While cultivated for food in India, and sometimes made into flour in Spain, where it is now naturalized, it is grown only as a curiosity in the United States.

Judas Tree (*Cercis*). A genus of trees of the Pea family (*Leguminosae*). There are about five species, natives of North America, Europe, and temperate Asia. The **American Judas Tree** or **Red Bud** (*C. canadensis*) is a hardy tree, sometimes reaching a height of 40 to 50 feet. It has beautiful rose colored flowers and is frequently planted as an ornamental tree. The **European Judas Tree** (*C. siliquastrum*) is very similar to the American species.

Juniper (*Juniperus*). A genus of some 30 trees and shrubs of the Pine family, mostly natives of northern cool regions, about 10 occurring in North America. The **Common Juniper** (*J. communis*), in its typical form a small tree 6 to 14 feet high, is more common in its dwarf sprawling forms, 1 to 3 feet in height. The so-called **White Cedar** of the Eastern States and the **Bermuda Cedar**, much prized for timber, are junipers. Many varieties are in cultivation.

Kalmia. A genus of the Heath family (*Ericaceae*). There are about six species, five North American and one Cuban. **The Mountain Laurel** (*K. latifolia*) is a shrub or occasionally a small tree reaching a height of 30 or 40 feet, growing from New Brunswick to Florida and Louisiana. It is narcotic and dangerous, the leaves being poisonous to many animals. The wood is hard and is used in turnery. The **Sheep Laurel** (*K. angustifolia*) is a small shrub growing from Newfoundland to Georgia. It has the same properties as the mountain laurel.

Kelp. A name given to any dark brown or blackish seaweed (*alga*), particularly to those species of *Fucus* and *Laminaria* which are extensively burned on the shores of northern Europe for their ashes, also known as kelp, once the chief and still an important source of iodin.

Knotweed (*Polygonum*). A large, widely diffused genus of herbs of the Buckwheat family, so named on account of the swollen joints of many forms, consisting of some 200 species, about 60 North American, and including many well-known plants, such as the **Knotgrass** or **Doorweed** (*P. aviculare*), the **Smartweed** (*P. hydropiper*), the **Bindweed** (*P. Convolvulus*) and various others. The **Prince's Feather** (*P. orientale*) of gardens was introduced from India.

Lady's Slipper (*Cypripedium*). A genus of the Orchid family (*Orchidaceae*), containing about 40 species and numerous hybrids, some of which have flowers of great beauty, and are easily and extensively cultivated. The **Showy Lady's Slipper** (*C. reginae*) is a plant two feet high, growing from Nova Scotia to Minnesota, southwest to Georgia; it is the most conspicuous North American species. Much more common is the **Large Yellow Lady's Slipper** (*C. pubescens*) frequent in swampy thickets and damp prairies in the eastern United States. The earliest bloomer is the pink **Stemless Lady's Slipper** or **Moccasin Flower** (*C. acaule*) of dry woods, while the **White Lady's Slipper** abounds in bogs.

Larch (*Larix*). A genus of trees of the Pine family (*Coniferae*), containing about nine species. The **American Larch** or **Tamarack** (*L. laricina*) is a slender tree 50 to 60 feet high, growing from Virginia to Hudson Bay. It is often planted as an ornamental tree and the wood is highly valued for shipbuilding and for telegraph poles.

Larkspur (*Delphinium*). A genus of the Crowfoot family (*Ranunculaceae*), containing about 60 species, beautiful plants with large, showy, irregular flowers, many of which are in cultivation. The **Field Larkspur** (*D. consolida*), a popular garden flower, grows in waste places, being naturalized from Europe in southern New Jersey and Pennsylvania and southward. The **Dwarf Larkspur** (*D. tricorne*) with blue or white flowers, grows native from Pennsylvania to Georgia, west to Minnesota and Arkansas. Many beautiful wild larkspurs, several of which are poisonous, particularly to sheep and cattle, grow in the Rocky Mountain region and westward. *D. Staphisagria*, a species cultivated in Europe, is used in medicine.

Laurel (*Laurus*). A genus of the Laurel family (*Lauraceae*). There are but a few species, the principal ones being the **Noble Laurel** or **Victor's Laurel** (*L. nobilis*) and **Sweet Bay** (*L. canariensis*), natives of Asia Minor, but widely diffused in the Mediterranean region. They are often only shrubs 15 feet or less, but sometimes trees 30 to 60 feet high. The leaves and fruit, which are bitter, astringent, and aromatic, were formerly used in medicine. The leaves are sometimes used in seasoning and they yield the volatile oil of sweet bay.

Lavender (*Lavandula*). A genus of plants of the Mint family (*Labiatae*). A few European species are used in medicine and the flowers are used in perfumery.

Leguminosae (Pulse, or Pea family). The second largest natural family of flowering plants, ranking next to the Compositae in number of species, and far above it in economic importance, embracing upwards of 7,000 species, widely distributed but most abundant in the tropics, containing many very useful plants, such as peas, beans, clovers, alfalfa, peanut, numerous dye plants: indigo, logwood, Brazil Wood; gum plants: gum Arabic, gum Acacia, and gum Senegal; numerous timber trees and many powerful poisons and drugs: laburnum, Calabar bean (*Physostigma*), cassia, copal, balsam of Copaiba, and balsam of Tolu.

Lichens. A large group of thallophytes, exceedingly interesting in their structure and manner of life and growth. Every lichen is composed of two plants living together in a special nutritive relation known as symbiosis. One is a colorless, thread-like structure, which is a fungus. The other consists of green or blue-green cells, which are algae; the latter possessing chlorophyll create, by photosynthesis, the food used by both plants, while the fruit of lichens is that of a fungus. In this relation the fungus is truly parasitic, as it does nothing in return for its food, and the algae may be considered as plants held in slavery for its benefit. Lichens are usually flat, membranous, or crustaceous, though some are branching

Reindeer Moss.

Old Man's Beard.

LICHENS.

in habit. Nearly all grow on exposed trees, rocks, or barren grounds, and derive their sustenance entirely from the air and water. They are exceedingly abundant in northern regions, continuing to the extreme limit of vegetation. The **Reindeer Moss** (*Cladonia rangiferina*) covers vast tracts in northern Europe and is the chief food of the reindeer. The **Iceland Moss** (*Cetraria islandica*) is a northern lichen used for human food. Numerous species occur in moist temperate regions and some are found in the tropics.

Licorice (*Glycyrrhiza*). A genus of perennial herbs of the Pea family (*Leguminosae*), the roots of which are used in medicine. The **Common Licorice** (*G. glabra*) is cultivated in Europe and to a limited extent in Louisiana and California. The roots are extensively employed by porter brewers, and the concentrated extract from them is the common stick licorice of confectionery stores.

Lilac (*Syringa*). A genus of trees of the Olive family (*Oleaceae*). The **Common Lilac** (*S. vulgaris*), a shrub 6 to 15 feet high, is one of the most widely diffused ornamental shrubs cultivated in North America and Europe. There are many fine single and double flowered varieties. The lilac was introduced into Europe by the Turks, who brought it from west central Asia.

Lily (*Lilium*). A genus of plants of the Lily family (*Liliaceae*), containing about 45 species, natives of the North Temperate zone, many of which are prized for the size and beauty of the flowers. The **White Lily** (*L. candidum*), a native of the Levant, with large white flowers, has long been in cultivation in gardens. The **European Orange Lily** (*L. bulbiferum*), with large, orange-colored flowers, is a well-known and very showy ornament in flower gardens. The **Tiger Lily** (*L. tigrinum*) has a stout stem two to five feet high with beautiful orange-colored

flowers, spotted with purple. It is a native of China but has escaped from cultivation in many parts of the United States.

Lily-of-the-Valley (*Convallaria majalis*), the only representative of the genus, is a highly prized ornamental plant of the Lily family (*Liliaceae*). It grows wild in bushy places and woods in Europe, Asia, and the southern Alleghany region of North America, and is very extensively cultivated. The flowers, which are small, bell-shaped, and sweet scented, are used in France in the manufacture of eau d'or, an esteemed French perfume. All parts, leaves, stem, and flowers, are exceedingly poisonous if eaten, but the acrid, burning taste greatly lessens the danger of poisoning from this plant.

Linden or Basswood (*Tilia*). A genus of the Linden family (*Tiliaceae*), containing about 12 species, natives of North America, Europe, and Asia. The lindens produce a soft, straight grained wood which is much used for the interior finish of buildings, cabinet making, sounding boards for pianos, and in the manufacture of paper. The tough inner bark is largely made into mats, cords, and fishing nets, and the flowers of the European species are used in perfumery. Many are planted for shade and ornamental trees. The **American Linden** or **Basswood** (*T. americana*) is a large tree 70 to 125 feet high, growing from New Brunswick to Georgia, west to Nebraska and Texas. The wood is extensively used for making cheap furniture and paper pulp. The **Southern Basswood** or **Whitewood** (*T. pubescens*) is a small tree 40 to 50 feet high, growing from Long Island to Florida, west to Texas. The **White Basswood** or **Bee Tree** (*T. heterophylla*) is a forest tree 45 to 70 feet high, Pennsylvania to Florida, west to Illinois and Tennessee. The **European Linden** or **Lime Tree** (*T. europaea*) is planted as an ornamental tree in parks and streets.

Linden or Basswood.

Live-forever or **Houseleek** (*Sempervivum*). A genus of the Orpine family (*Crassulaceae*), perennial, fleshy herbs, natives of the Old World. The **Common Houseleek** (*S. tectorum*), a native of the Alps but escaped from cultivation in the United States, is frequently planted in gardens. The leaves afford immediate relief for burns and insect bites. Broken portions of the stem and leaves are remarkably tenacious of life, rooting and growing after long exposure, whence the popular name.

Liverworts (*Hepaticae*). The lower of the two groups of bryophytes, the other including the mosses; all are moisture-loving, growing on trees, damp soils, and rocks, or floating on the water, and consist of a green thallus body, attached to its support by holdfasts and root-like absorbing structures. There are three groups: the **Marchantiales**, in which the thallus is a flat green disc, often reproducing by gemmae—the true sex organs being produced on different plants; **Jungermanniales**, the most numerous, the prostrate thallus bearing on either side a row of foliage leaves, so that they strongly resemble mosses, and are called the leafy liverworts. The **Anthocerotales** have a single, undivided thallus but the spore case is elongated, green, grows continuously, and splits into two valve-like portions.

Locust Tree. A name applied to various trees of the Pea family (*Leguminosae*). The **American Locust Tree** or the **False Acacia** (*Robinia pseudacacia*) is a large tree 70 to 80 feet high, growing from Pennsylvania to Georgia and now widely naturalized in most states east to the Rocky Mountains. The wood is compact and hard and is extensively used for shipbuilding and all purposes where great strength and toughness are required.

Lotus. A name applied to several different plants. The lotus tree and fruit of the Libyan lotus eaters encountered by the wandering Ulysses, was the **Jujube** (*Zizyphus*). The **Lotus of the Nile** is a water lily (*Nelumbo*). The name is also applied to a large genus of the Pea family, allied to the clovers.

Liverwort. Marchantia.

Lupine (*Lupinus*). A genus of the Pea family (*Leguminosae*), containing about 100 species of herbs and half shrubs, about 70 of which occur in the United States, principally in the Rocky Mountain and Pacific coast regions. Lupines were known to the ancient Greeks, who cultivated them for their seeds and for green manuring. The most important cultivated species are the **White Lupine** (*L. albus*), the **Yellow Lupine** (*L. luteus*), and the **Blue Lupine** (*L. angustifolius*). The **Wild Lupine** (*L. perennis*), a perennial one to two feet in height with purple-blue flowers, grows in sandy soils from Maine and Ontario to Minnesota, Florida, Missouri, and Louisiana. The **Low Lupine** (*L. pusillus*), four to eight inches high, grows on dry plains in Dakota and Kansas and westward.

Madder Family (*Rubiaceae*). One of the largest families of flowering plants, embracing an array of upwards of 350 genera and 5,500 species distributed widely from cool regions north to mountain regions south of the equator, and very abundant in the tropics. Coffee, madder, ipecacuanha, and cinchona or calisaya bark, the source of quinine, are contributed by this family, which also abounds in fragrant, showy flowers, many of which, such as the Gardenias, are favorites in cultivation.

Magnolia. A genus of the Magnolia family (*Magnoliaceae*), containing about 15 species of large-leaved, beautiful trees, natives of eastern North America and Asia. The **Great Leaved Magnolia** or **Large Leaved Cucumber Tree** (*M. macrophylla*) is 30 to 50 feet high, rendered conspicuous by its large white flowers, sometimes a foot in diameter. It grows from Kentucky to Florida, west to Arkansas and Louisiana. The **Umbrella Tree** (*M. tripetala*) is 20 to 40 feet high with large white flowers. Found from Pennsylvania to Alabama, west to Arkansas and Mississippi. The **Cucumber Tree** or **Mountain Magnolia** (*M. acuminata*) is 60 to 90 feet high with greenish yellow flowers, which are less admired than those of other species; grows from New York to Illinois and south to Kentucky and Alabama, west to Arkansas. Often planted as an ornamental tree. The **Laurel Magnolia** or **Sweet Bay** (*M. virginiana*) is a slender tree 50 to 70 feet high with beautiful fragrant flowers; Pennsylvania to Florida, west to Arkansas and Texas.

Mahogany. A name applied to the timber of a number of trees, the most highly esteemed being that of *Swietenia Mahogani*, a large tree, native of the West Indies and tropical South America.

Maidenhair (*Adiantum*). A delicate, graceful fern, with black, shining leaf stalks. Two species occur in the Eastern States, the **Common Maidenhair** (*A. pedatum*) very abundantly, and the **Venus' Hair** (*A. Capillus-Veneris*) more sparingly. There are about 80 species in all, several of which are much prized in cultivation.

Mandrake (*Mandragora*). A genus of plants of the Potato family (*Solanaceae*), natives of Europe, since ancient times superstitiously reputed to possess many evil powers. In the United States the name is applied to the May apple (*Podophyllum*), the rootstock of which is used in medicine.

Mangosteen. A highly prized fruit, said to be the most delicious grown in the tropics, produced by the evergreen tree, *Garcinia mangostana*, of the natural order *Guttiferae*, native of the Molucca Islands but now cultivated in Java and other tropical countries.

Mangrove (*Rhizophora*). A genus of the Mangrove family (*Mangrophoraceae*), containing three species of trees and shrubs, all tropical and natives of coasts, particularly about the mouths of rivers, where they grow in the mud. The seeds grow while still attached to the parent tree, and the young trees are provided with roots and branches when they drop off into the water or mud. The coast and keys of southern Florida abound in mangroves. The fruit of the **Common Mangrove** (*R. Mangle*) is sweet and edible and its juice yields a light wine.

Manna. A sweet substance which exudes from incisions in the stems of the flowering ash (*Fraxinus ornus*) and the round leaved ash (*Fraxinus rotundifolia*), natives of Sicily, used extensively in medicine. See *Tamarisk*.

Maple (*Acer*). A genus of trees of the Maple family (*Aceraceae*), containing nearly 100 species, natives of north temperate regions, especially North America and eastern Asia. The **Sugar Maple** (*A. saccharum*) is a large tree 90 to 120 feet high, growing from Newfoundland to Georgia, west to eastern Nebraska and Kansas. The wood is extensively used in cabinet work and finishing houses. Large quantities of sugar and syrup are made from the sap. The **Silver** or **Soft Maple** (*A. saccharinum*) is a rapid growing tree 100 to 120 feet high, found from New Brunswick to Florida, west to Ontario, Nebraska, and Oklahoma. It is often planted as a shade tree. The **Scarlet** or **Red Maple** (*A. rubrum*) is a large tree reaching a maximum height of 120 feet, and growing in swamps and low ground from New Brunswick to Manitoba, south to Florida and Texas. The close-grained wood is largely used for furniture, and in turnery. The **Oregon Maple** (*A. macrophyllum*) is a beautiful tree 80 to 100 feet high, growing from Alaska to California. It is often planted as an ornamental tree.

Marigold. A name given to several very different flowering plants. The old marigold (*Calendula officinalis*) of the English poets, is a hardy annual with leaves and bright flowers that last nearly throughout the year. The French and African marigolds belong to the genus *Tagetes*, and have yellow to brown flowers of a rank odor. The foregoing belong to the Sunflower family, while the wild marsh marigold, common in wet meadows in Europe and America, belongs to the Crowfoot family.

Marsh Mallow. A name applied to *Althaea officinalis*, a plant of the Mallow family (*Malvaceae*), native of Great Britain and naturalized in the United States. The mucilaginous roots are used in confectionery and in medicine.

Marsh Marigold (*Caltha palustris*). A marsh plant of the Crowfoot family, with striking bright yellow flowers and shining, kidney-shaped leaves, common in America and Europe, often called **Cowslips** in the United States, and sometimes used as a potherb.

May Apple (*Podophyllum peltatum*). A well known perennial woodland plant of the Barberry family (*Berberidaceae*), common throughout the eastern United States except in New England, where rare. The large, fleshy berry is edible though insipid; the roots contain a purgative resin much used in medicine. Sometimes incorrectly called mandrake.

Medlar (*Mespilus*). A genus of trees or shrubs of the Rose family (*Rosaceae*). The **Common Medlar** (*M. germanica*), a small tree, bearing an astringent edible fruit, is a native of and largely cultivated in southern Europe and temperate parts of Asia; seldom seen in America.

Melilot (*Melilotus*). A genus of plants of the Pea family (*Leguminosae*), many species of which are in cultivation for pasturage, hay, and green manuring. The flowers of the **Common Melilot** or **Yellow Sweet Clover** (*M. officinalis*), which is cultivated in the United States, are used in the manufacture of perfumery.

Mesophytes. Plants which grow naturally in medium conditions of soil moisture, being intermediate between xerophytes and hydrophytes, embracing the plants of forests, prairies, meadows, and of most cultivated areas.

MAY APPLE.

Mesquite (*Prosopis*). A genus of trees or shrubs of the Pea family (*Leguminosae*), containing about 16 species, natives of America, Asia, and Africa, three of which grow in the United States. The **Mesquite** (*P. juliflora*) varies from a straggling shrub to a widely-branched tree 50 feet high. It occurs from central Texas to eastern California, and southward to Chile and Argentina. The very heavy wood is used for fuel and fence posts, while the pods and leaves are much eaten by stock. The **Screwpod Mesquite** (*P. pubescens*) is a tree 25 to 30 feet high with similar range and uses, both species being valuable in arid regions.

Mint Family (*Labiatae*). A large, distinctly marked family of dicotyledonous plants, chiefly herbs with square stems and opposite, aromatic leaves, numbering 150 genera and 3,000 species, principally natives of temperate climates. The striking qualities of the mints depend upon the presence of aromatic or fragrant essential oils, making them valuable as stimulants, flavoring herbs, and in perfumery. Of the aromatics peppermint, spearmint, and pennyroyal are best known; lavender and spike also furnish well-known oils, while thyme, marjoram, basil, savory and sage are frequently used. Lavender, patchouli, and rosemary are employed in the manufacture of perfumery. Horehound, ground ivy, balm, and dittany are used as household remedies.

Mistletoe (*Viscum*). A genus of small, mostly tropical and parasitic shrubs of the Mistletoe family (*Loranthaceae*) containing upwards of 400 species. The **Common Mistletoe** (*V. album*), a native of the greater part of Europe, grows on many kinds of trees, particularly the apple and hawthorn. It was intimately connected with many of the superstitions of the ancient Germans and Britons. The **American Mistletoe** (*Phoradendron flavescens*) closely related and very similar, grows upon tupelo, maple, and many other trees from New Jersey to Minnesota southward to Florida and Texas.

Monocotyledons. The smaller of the two primary groups of Angiosperms, distinguished by having only one seed leaf, while the dicotyledons have two seed-leaves. The flower parts are in threes, never in fours or fives, the leaves are usually parallel-veined, and the woody fibers are scattered throughout the stem, never forming a cylinder between the bark and pith as in dicotyledons. The group embraces about 20,000 species, containing the cereals and many other useful plants, prominent families being the grasses, sedges, palms, arums, pond-weeds, irises, lilies, and orchids.

Mountain Ash (*Sorbus*). A genus of small trees of the Rose family (*Rosaceae*), containing about 7 species, natives of the north temperate zone. The **American Mountain Ash** (**S.** *americana*) is a small tree, sometimes 30 feet high, growing from Newfoundland to Manitoba south to North Carolina and Michigan, and often planted for ornament. The fruit is a small astringent red berry, frequently used in home remedies.

Mosses (*Musci*). The higher of the two groups of bryophytes, the other including the liverworts; all small green plants with structures resembling and corresponding to the true roots, stems and leaves of higher plants, adapted to a great variety of situations from semi-aquatic to semi-arid, most abundant in cool temperate and arctic regions. There are two main groups: the **Sphagnum** forms, the peat or bog mosses, and the **Bryum** forms, or true mosses. While the peat is formed from accumulations of bog mosses, the group on the whole is of little value to man. (See BRYOPHYTES, LIVERWORTS.)

Mushrooms. Edible fungi, particularly agarics and morels. The **Common Mushroom** (*Agaricus campestris*), one of more than 1,000 species of *Agaricus*, grows in fields and pastures, and is extensively cultivated. The **Morel** (*Morchella esculenta*) common in America and Europe is highly prized. There are many other edible fungi, among them the ink cap, parasol, and fairy ring fungus, the chanterelle, and several puff balls. Umbrella-shaped fungi are popularly called **Toadstools**, but the prevalent idea that all such are poisonous is wrong. There are, however, several extremely poisonous fungi, some of which rather closely resemble edible species, so that the inexperienced should never eat them indiscriminately.

Morel. Common Mushroom.

MUSHROOMS.

Mustard Family (*Cruciferae*). A well defined, natural group of dicotyledonous plants, comprising 185 genera and 1,500 species, natives of cool and temperate regions, occurring only on mountains in the tropics; all herbs with a pungent, watery juice and cruciform flowers, many of which have risen to economic rank in cultivation, such as the turnip, cabbage, rape, sea kale, radish, horseradish, garden cress, water cress, mustards, scurvy grass, and wood. The **Stock** or **Gillyflower**, **Wall Flower**, **Candytuft**, and **Sweet Alyssum** are cultivated for their flowers.

Narcissus. A genus of the Amaryllis family (*Amaryllidaceae*), with narrow leaves and usually white or yellow flowers. The species are native of Europe, Asia, and Africa, and many are cultivated in gardens for their beautiful and often highly-scented flowers. The **Poet's Narcissus** (*N. poeticus*) with white fragrant flowers is one of the most popular. The **Jonquil** (*N. Jonquilla*) bears fragrant golden yellow flowers which are employed in the manufacture of perfumes.

Nettle Family (*Urticaceae*). A group of dicotyledonous plants of wide distribution, but most numerous in the tropics, chiefly herbs or shrubs, a number of which have important economic uses. Here belong the **Hop**, **Hemp**, and **China Grass**, which are highly valuable, while related species furnish fiber and cordage and also the narcotic resin called Indian hemp. The true nettles (*Urtica*) are armed with stinging hairs containing a very irritant juice. Interpreted in a broad sense the family includes the **Elm**, **Hackberry**, **Osage Orange**, and **Mulberry.**

Oak (*Quercus*). A genus of about 200 trees and shrubs, most numerous in temperate climates, though some are tropical; fully 50 species occurring in the United States, with many intermediate forms or hybrids. The **European Oak** (*Q. robur*), the most important Old World timber oak, is sparingly planted in the United States. The **White Oak** (*Q. alba*), the most valuable American timber oak, occurs from Texas to Minnesota and eastward. With similar range, but less valuable for timber, are **Bur Oak** or **Mossy Cup Oak** (*Q. macrocarpa*), the **Scarlet Oak** (*Q. coccinea*), and the **Red Oak** (*Q. rubra*). The **Cow Oak** or **Basket Oak** (*Q. Michauxii*) and the **Yellow** or **Chestnut Oak** (*Q. acuminata*) produce edible acorns. The bark of the **Quercitron** (*Q. velutina*) is made use of in tanning, as a yellow dye, quercitron, and in medicine. The **Live Oak** (*Q. virens*) once famous for shipbuilding, is a sturdy species with entire evergreen leaves occurring in the Southern States and Cuba, and there are live oaks in the Pacific states.

Orchids (*Orchidaceae*). An immense family of monocotyledonous plants, numbering about 400 genera and 5,000 species, all herbs, occurring throughout the world except in very cold or dry regions, and reaching their greatest development and profusion in the tropics. It is a well-marked group, usually with showy flowers of strikingly irregular form and peculiar structure. In temperate climates orchids are terrestrial, but in the tropics many species are epiphytic. While a vast number are highly prized in hothouse cultivation, few have any known value, the **Vanilla** (*Vanilla planifolia*) used for flavoring being the most important.

Osage Orange or **Bow Wood** (*Maclura pomifera*). A tree of the Nettle family (*Urticaceae*), native of the southwestern United States, attaining a height of 20 to 60 feet, extensively planted for hedges, while the wood, of orange color and of great hardness, is valuable for fence posts, mallet heads, and to some extent in cabinet work.

Livingstonia. PALMS. Phoenix.

Palm Family (*Palmaceae*). A very distinct natural family of monocotyledonous trees and shrubs, chiefly tropical and subtropical, embracing about 1,000 species which are second in economic importance only to the cereal grasses. Palms are usually unbranched trees, with large terminal clusters of long stalked leaves. The flowers are often exceedingly numerous, a date palm bearing 12,000 in a cluster, while in a species of Alphonsia over 200,000 flowers have been counted in a single spadix, or 600,000 in one plant! Sugar, starch, oil, wax, resins, and spirituous liquors are obtained from their juices; many

yield esteemed fruits, others produce fiber for clothing, cordage, and also valuable timber. Among the most important are the date palm, cocoanut palm, areca-nut palm, oil palm, cabbage palm, vegetable ivory, and coquilla nut palms.

Pampas Grass (*Gynerium argenteum*). A very tall grass with a silvery white silky panicle, common in Brazil and Argentina, now introduced into the United States and other countries as an ornamental plant.

Parasitic Plants. True plant parasites live partly or wholly within other plants or animals and derive their sustenance wholly therefrom, in contradistinction to epiphytes or perching plants, which are attached to other plants merely for mechanical support. A vast number of fungi are parasitic upon other plants, such as rusts smuts, mildews, blights, and leaf curl. Certain fungi (*Trichophyton*) grow in the human skin, producing ringworm, barber's itch, and similar diseases, while bacteria are constantly present in the skin and digestive tract of many animals. The **Dodder** and **Rafflesia** are examples of seed plants which are true parasites. Many other seed plants are so-called half parasites, retaining their green color but deriving at least a part of their food from other living plants. Half parasites commonly blacken in drying.

Parsley Family (*Umbelliferae*). Also called Carrot family. A large, distinct group of herbs, comprising 170 genera and 1,600 species, nearly all natives of north temperate regions, usually with fistulous stems, flowers in umbels, acro-narcotic juices, and aromatic seeds. The vegetables, celery, parsley, parsnip, carrot; and the flavoring plants, caraway, dill, coriander, anise, and cummin belong here. The medicinal gum-resins, asafoetida, ammoniacum, opoponax, and galbanum, are derived from species of this family, which also contains a number of virulently poisonous plants, such as the hemlock (*Conium*) and water hemlock (*Cicuta*).

PASSION FLOWER.

Passion Flower (*Passiflora*). A genus of climbing vines of the Passion Flower family (*Passifloraceae*), containing about 250 species natives mostly of tropical America. Twelve are natives of the United States. Many species are cultivated in greenhouses for their large, beautiful flowers. The **Passion Flower** or **Passion Vine** (*P. incarnata*), with showy, white flowers and an edible fruit, grows from Virginia to Missouri, south to Florida and Oklahoma. The **Yellow Passion Flower** (*P. lutea*), with greenish yellow flowers, is found in thickets from Pennsylvania and Missouri southward. *Passiflora caerulea*, a native of Peru and Brazil, is extensively grown for its white, pale blue, or rose-colored flowers.

Perennials. Plants whose duration of life is more than two years, contrasted with annuals and biennials.

Petunia. A genus of plants of the Potato family (*Solanaceae*). There are about 12 species, natives of South America and introduced into other countries for their beautiful flowers. The **Violet Petunia** (*P. violacea*) is a trailing plant with purple-violet flowers, a native of Brazil and escaped from cultivation in southern New York and Pennsylvania. There are many varieties, including single and double flowered forms with innumerable variations in color. The common garden petunias are mostly hybrids of *P. violacea* and the **White Petunia** (*P. axillaris*).

Phlox. A genus of the Polemonium family, containing 40 species, well distributed in North America, many of which are prized in cultivation for their showy flowers, hardiness, and ease of growth.

Pine (*Pinus*). A genus of trees of the Pine family (*Coniferae*), containing about 80 species, nearly two thirds of which occur in the northern part of the western hemisphere. The **White Pine** (*P. Strobus*), a tree 75 to 100 feet high, is one of the most important timber trees of North America. It extends from Newfoundland to Minnesota, south to Georgia. The wood is soft, straight grained, and is much used for building and cabinet work. The **Yellow Pine** or **Long-leaved Pine** (*P. palustris*) is a large tree, sometimes attaining a height of 100 feet and growing in sandy soil from Virginia to Florida and Texas. The wood is heavier and stronger than that of any other pine, and is used in all kinds of building. The tree is the chief source of turpentine, tar, resin, etc. The **Western Yellow Pine** or **Bull Pine** (*P. ponderosa*) is a large tree, sometimes 150 to 250 feet high and 5 to 8 feet in diameter. It is found from the Rocky Mountains to the Pacific coast and is one of the most important lumber trees of the West. The **Sugar Pine** (*P. Lambertiana*), which grows in Oregon and California, is one of the largest trees of the genus, attaining a height of 150 to 300 feet and a diameter of more than 10 feet. The timber is strong, straight grained, and is much used for a finishing lumber and cabinet work.

Pink (*Dianthus*). A genus of plants of the Pink family (*Caryophyllaceae*), including the **Carnation, Sweet William,** etc., chiefly natives of Europe and Asia. Some of the species have long been in cultivation on account of their beautiful and often fragrant flowers. There are many varieties, including single and double forms of many different colors.

Pitcher Plants (*Sarracenia*). Curious insectivorous bog plants, not rare in the Atlantic states. The leaves, which are urn-shaped or tubular, secrete a liquid in which insects are caught and decomposed. The most widely distributed species (*S. purpurea*) is the **Sidesaddle Flower** or **Huntsman's Cup.** The pitcher plants of greenhouse cultivation (*Nepenthes*) are herbs or half shrubby plants, natives of China, India, and Malaysia. Some of the species have their leaves prolonged into a kind of tendril, which ends in a cup or pitcher-like organ. Many species are commonly grown in hothouses.

PITCHER PLANT.
Sarracenia purpurea.

Plane Tree (*Platanus*). The only genus of the Plane Tree family (*Platanaceae*), containing 6 or 7 species, natives of the north temperate zone. The **Sycamore, Plane Tree,** or **Buttonwood** (*P.*

occidentalis) is a large tree, reaching a maximum height of 130 feet with a trunk diameter of 14 feet. It is found from Quebec to Georgia, west to Manitoba and Kansas. The wood is a favorite material for tobacco boxes and butcher blocks and is largely used for furniture. There are two other species in the United States; the **California Sycamore** (*R. racemosa*) and the **Arizona Sycamore** (*P. Wrightii*), both large trees.

Plum, Wild. Small trees or shrubs belonging to the genus *Prunus*. The **Wild Yellow** or **Red Plum** (*Prunus americana*) is a small tree reaching a maximum height of 35 feet, found from New York to Montana, Florida, and Colorado. It is often cultivated in the Eastern States as an ornamental or fruit tree. The **Chickasaw Plum** (*P. angustifolia*) is a small tree 15 to 20 feet high high, growing in dry soil from New York to Florida, west to the Rocky Mountains. The fruit is often sold in the markets. A number of varieties are cultivated as fruit trees. The **Wild Goose Plum** (*P. hortulana*) is a tree 20 to 30 feet high, growing on low banks of streams from Maryland and Virginia to southeastern Kansas and Texas. The **Canada Plum** (*P. nigra*), a tree reaching a height of 20 to 30 feet, grows near streams from Newfoundland to Manitoba, Massachusetts, and Wisconsin. Often cultivated in the Northern States and Canada as a fruit tree or for the beauty of its flowers.

Poplar (*Populus*). A genus of about 20 trees of the Willow family (*Salicaceae*), natives of temperate and cold regions, persisting to the limit of trees on mountains and in high latitudes. Half of the species occur in the United States, all of soft wood and rapid growth. The **American Aspen** or **Quaking Asp** (*P. tremuloides*), usually a small tree, occurring almost throughout the continent, has the widest range of any North American tree. The **Cottonwood** (*P. deltoides*), common along streams from the Rocky Mountains eastward, sometimes attaining 150 feet in height and a diameter of 7 feet, is much planted for ornament. The **Balsam Poplar** (*P. balsamifera*), sometimes 100 feet high, occurs northward and in Siberia. The **European White Poplar** (*P. alba*) and **Black Poplar** (*P. nigra*), much-planted ornamentals, have become naturalized in the Eastern States. The **Lombardy Poplar** (*P. nigra, var. italica*) is very widely grown in Asia, Europe, and America.

Poppy Family (*Papaveraceae*). A small group of dicotyledonous plants, containing about 25 genera and 200 species, of world-wide distribution, but most numerous in Europe, consisting of herbs with a milky or colored juice, which is generally powerfully narcotic, and sometimes acrid. The widely-cultivated opium poppy is the most important. In the United States the **Bloodroot** (*Sanguinaria*) is common in the eastern portion. **Argemone** is a characteristic genus of the Rocky Mountain regions; the **California Poppy** (*Eschscholtzia*) is a striking representative on the Pacific coast, while the poisonous **Celandine** (*Chelidonium majus*) of Europe has been naturalized in many localities.

Potato Family (*Solanaceae*). Also called Nightshade family. An important dicotyledonous family, mostly herbs, numbering about 70 genera and 1,600 species, most abundant in the tropics, many of which are powerful poisons while others are of the highest usefulness. Among the poisonous species are the **Deadly Nightshade** (*Atropa Belladonna*), **Black Nightshade** (*Solanum nigrum*), the **Bittersweet** or **Woody Nightshade** (*Solanum Dulcamara*), the **Jimson Weed** or **Thorn Apple** (*Datura*), **Henbane** (*Hyoscyamus*), the **Mandrake** (*Mandragora*), **Tobacco** (*Nicotiana*), and even the leaves and stems of the **Potato**. The most valuable economic plants are the potato, tomato, eggplant, and red pepper.

Primrose (*Primula*). A genus of plants of the Primrose family (*Primulaceae*), natives of Europe and Asia. Some of the species are extensively cultivated on account of their fine color and delicate beauty. The **Common Primrose** (*P. vulgaris*), a native of Europe, is the parent of many cultivated varieties.

Quaking Grass (*Briza*). A small genus of European grasses with slender stalks and large spikelets, which quake in the slightest wind. Several species, naturalized in the United States, are considered valuable pasture grasses for dry situations.

Quassia. A genus of trees and shrubs of the Quassia family (*Simarubaceae*). *Quassia amara*, the wood and root of which are extremely bitter, was formerly much used in medicine.

Quercitron. A species of oak and also the dye obtained from it. See OAK.

Rafflesia. A small genus of extraordinary parasitic plants of the Rafflesia family (*Rafflesiaceae*). They attack grapevines, and the only visible part consists of a flower. *Rafflesia Arnoldi*, a native of Sumatra, has a flower three feet in diameter. The flower bud is about as large as a cabbage and bursts directly from the woody stem of the host plant. The flower, which is of livid color and mottled in the manner of decaying flesh, has a strong and fetid odor which attracts carrion insects by which pollen is carried from flower to flower.

Resin Weed or **Compass Plant** (*Silphium laciniatum*). A large plant, native of the United States, with a very resinous stem. It grows on prairies and has nearly vertical root leaves, the edges of a majority of which when growing in places equally exposed to the sunlight on all sides, point nearly north and south, whence the name compass plant. This property of the leaves is mentioned in Longfellow's Hiawatha.

RESURRECTION PLANT.
Anastatica hierochuntica.

Resurrection Plant (*Anastatica hierochuntica*). A small Arabian herb, the branches of which roll up when dry so that the plant becomes almost globular, but which expand again when moist. The name is also applied to several species of Selaginella; small flowerless plants which when dry close up so as to resemble a bird's nest, but revive again in wet weather. While in their contracted, globular state these plants are often blown about the sterile plains where they grow, thus widely scattering their seeds or spores.

Rose (*Rosa*). A genus of usually more or less climbing or trailing, shrubby plants of the Rose family, containing many of the most beautiful and highly prized flowers. There are numerous wild species, exceedingly variable and difficult to distinguish, some botanists recognizing only 30 or 40, others nearly 200, all natives of north temperate regions. Centuries of cultivation of various species in Asia, Europe, and America have produced innumerable varieties.

Rose Family (*Rosaceae*). An important family of dicotyledons, comprising some 90 genera and 1,500 species of herbs, shrubs, and trees, widely diffused throughout the world, and embracing a number of the most highly-prized fruits in cultivation as well as many beautiful flowering plants and ornamental shrubs and trees. Among the fruits of the group are the almond, peach, nectarine, apricot, plum, pear, apple, quince, raspberry, blackberry, and

strawberry. Among the ornamentals are the mountain ash, hawthorns, medlar, cherry laurel, spiraea, flowering almond, and numerous roses.

Russian Thistle (*Salsola kali, var. tenuifolia*). An annual herb of the Goosefoot family (*Chenopodiaceae*), naturalized from northern Europe, which has become a very troublesome weed in the United States and Canada, particularly in the wheat-growing regions of the northwest. It is not a true thistle, but the mature leaves are tipped with short, sharp spines.

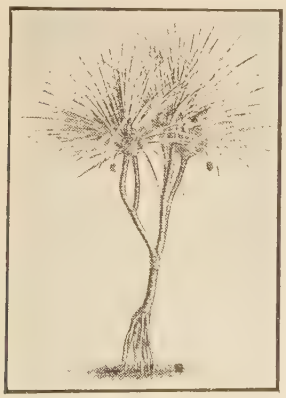
Sage Brush. Certain shrubby species of *Artemisia* of the Composite family, with silvery or hoary leaves containing a bitter juice. The characteristic **Sage Brush** or **Sage Wood** (*A. tridentata*) of the plains from Montana to Colorado and westward, immensely abundant over vast areas at 4,000 to 6,000 feet altitude, usually grows from two to six feet high, though it sometimes exceeds 12 feet.

Salad Plants. Vegetables whose green parts are served uncooked for human food, as celery, lettuce, chicory, endive, and water cress.

Sandalwood (*Santalum album*). A small tree, native of India and the Indian archipelago; producing a compact, fine-grained wood which is used for making small ornamental articles and possesses a remarkable fragrance which persists long after it has become thoroughly seasoned.

Sassafras. A genus of trees of the Laurel family (*Lauraceae*), containing but two known species, one in North America and the other in China. The **Sassafras** or **Ague Tree** (*Sassafras variifolium*) is a large tree 80 to 90 feet high, found from Canada to Florida west to Kansas and Texas. Oil of sassafras, used for flavoring confectionery, is distilled from the roots, and the bark is frequently employed in household medicine.

Screw Pine (*Pandanus*). A genus of the Screw Pine family of southern Asia and the South Sea Islands, resembling huge pineapple plants, having long sharp-pointed, spiny-edged leaves arranged in a three-ranked spiral, whence the name, and many have remarkable prop roots. Several species are of great utility, yielding fiber, fodder, perfumes, and food products.



Screw Pine.

Sedge Family (*Cyperaceae*). A large, distinct, natural group of monocotyledons, numbering some 65 genera and 3,000 species of grass-like or rush-like herbs with solid, often three-angled stems, and fibrous roots, universally diffused in marshes and along streams throughout the world. Sedges are devoid of active principles, are far less nutritious than grasses, yield no seeds or grains, and are consequently of comparatively little value. The tuberous rootstocks of two species of Cyperus are used for food, and another yields an aromatic oil. The stems of some species are woven into mats and hats. The cotton grass is used to stuff cushions, while species of Carex furnish a substitute for sarsaparilla. The **Papyrus** (*Papyrus antiquorum*) is celebrated for having furnished a sort of paper made by the ancient Egyptians from its pith.

Sensitive Plant. The common name given to certain species of Mimosa of the Pea family, whose finely divided leaves display remarkable irritability. When touched the leaflets close in pairs; upon more vigorous handling near-by leaflets also close and finally the leafstalk drops and the whole leaf appears withered. After a brief interval the leafstalk rises and the leaflets unfold again. The **Sensitive Brier** (*Schrankia*) of the Southern States also possesses this peculiar property.

Service Berry. The common name of several distinctly different trees of the Rose family (*Rosaceae*). The American **Service Berry** or **Shad Bush** (*Amelanchier canadensis*) is a small tree which bears a sweet red or purple berry. The **European Service Berry** (*Pyrus Sorbus*), a tree sometimes 50 feet high, is cultivated for its small pear-shaped fruit.

Shamrock. The **Hop Clover** (*Trifolium*) is usually considered the true shamrock or national badge of Ireland, though the **White** or **Small-Leaved Clover** (*T. repens*), the **Bird's Foot Clover** (*Lotus corniculatus*), and the **Wood Sorrel** (*Oxalis*) are also associated with the national emblem.

Shepherd's Purse (*Capsella Bursa-pastoris*). An annual plant of the Mustard family (*Cruciferae*), native of the Old World, but now cosmopolitan by naturalization, bearing small white flowers and a pouch-like pod; often a troublesome weed.

Skunk Cabbage (*Symplocarpos foetidus*). A North American plant of the Arum family (*Araceae*) which emits a fetid odor, especially when bruised. Common in wooded marshes in the eastern United States, where it is one of the earliest flowers to appear in spring.

Smilax. A genus of the Lily family (*Liliaceae*), containing about 200 species, usually climbing vines, most abundant in tropical America and Asia. About 17 species are natives of the United States. The **Carrion-flower** (*S. herbacea*) is found in woods and thickets from the Atlantic to Minnesota and Texas. The **Long-stalked Greenbrier** (*S. pseudo-china*), growing from Maryland to Nebraska, south to Florida and Texas, has tuberous rootstocks sometimes used in medicine. The roots of a number of species, particularly *Smilax medica* and *S. papyracea* of Central and South America, yield sarsaparilla. The delicate twiner called **Smilax** by florists is a South African plant (*Myrsiphyllum*).

Snapdragon (*Antirrhinum*). A genus of plants of the Figwort family (*Scrophulariaceae*). The flowers have a peculiar corolla, the lower lip of which, if parted, shuts with a spring or snap. The **Great Snapdragon** (*A. majus*), a favorite plant with many fine varieties, is the most frequently cultivated.

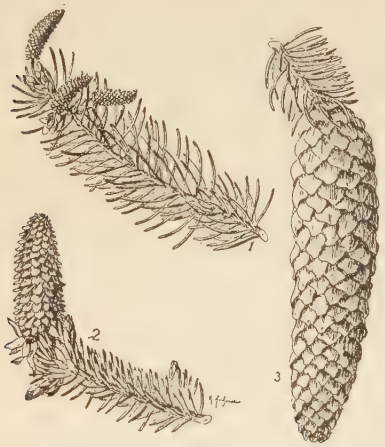
Solomon's Seal.

Solomon's Seal (*Polygonatum*). Perennial herbs of the Lily family, so-called because the scar left on the creeping rootstock after the death of each annual growth was thought to resemble the imprint of a seal.

Sorrel. A name given to several species of *Rumex* of the Buckwheat family, which have sour leaves, sparingly cultivated, chiefly in Europe for use in soups and sauces. The **Sheep Sor-**

rel (*R. Acetosella*) widely naturalized in America is frequently a very troublesome weed in meadows and pastures in the Eastern States. The **Wood Sorrel** (*Oxalis*) is often called **Sheep Sorrel.**

Spruce (*Picea*). A genus of trees of the Pine family (*Pinaceae*), containing about 18 species, native of the Northern Hemisphere. The **White Spruce** (*P. canadensis*) is a slender tree 50 to 150 feet high, found from New York to British Columbia, north to Newfoundland, Hudson Bay, and Alaska. The wood is light and soft and is largely used for construction and for paper pulp. It also yields some of the spruce gum of commerce. The **Black Spruce** (*P. mariana*) is a tree 20 to 30 and very rarely 100 feet high; growing from Newfoundland and Hudson Bay and Alberta south to North Carolina, Michigan, and Minnesota. It is largely used for wood pulp and paper. The **Red Spruce** (*P. rubra*), a tree 70 to 80 feet high growing from Nova Scotia to Virginia, is largely manufactured into lumber. The **Tideland** or **Sitka Spruce** (*P. sitchensis*) is a large tree usually 100 feet, sometimes 200 feet high, occurring abundantly from northern California to Alaska. Its valuable timber is used for all kinds of building purposes. The **Norway Spruce** (*P. Abies*) is largely planted in the Eastern States as an ornamental tree.



SPRUCE. Picea excelsa.
1. Male flowers. 2. Female flowers. 3. Fruiting cone.

Spurge Family (*Euphorbiaceae*). One of the largest families of dicotyledonous flowering plants, embracing over 200 genera and 4,000 species; herbs, shrubs, and trees, very widely diffused throughout the world, but notably numerous in tropical America. Nearly all possess a milky juice which contains more or less caoutchouc, while the watery sap is generally acrid, purgative, emetic, or poisonous. The most important economic plants of the family are cassava, the source of tapioca, the castor-oil plant, the tallow tree of China, the African teak tree, and the Brazilian caoutchouc tree, and noteworthy medicinal contributions are croton, cascarilla, and mercurialis.

Sumach (*Rhus*). A genus of about 100 species of trees and shrubs, widely distributed except in cold regions. About 15 occur in the United States, among them **Staghorn Sumach** (*R. typhina*) sometimes 30 feet high, and the much smaller **Smooth Sumach** (*R. glabra*) and **Dwarf Sumach** (*R. Copallina*) of the Eastern States; also the dangerous species: **Poison Sumach** or **Dogwood** (*R. Vernix*), **Poison Ivy** (*R. Toxicodendron*), and **Poison Oak** (*R. quercifolia*) of the East and South, and the **Western Poison Oak** (*R. diversiloba*) of the Pacific coast. Foreign species yield valuable dyestuffs, such as fustic, tanning materials, and varnish. Here also belongs the **Smoke Tree** (*R. Cotinus*), frequent in cultivation.

Sumach Family (*Anacardiaceae*). An important group of trees and shrubs, mostly tropical, numbering 50 genera and 400 species, characterized by a resinous or milky-acrid juice and dotless, alternate leaves. Here belong the **Cashew Nut** (*Anacardium*), the **Pistachio Nut** (*Pistachia vera*), **Mango** (*Mangifera*), **Hog Plum** (*Spondias*), and other valued fruits, as well as the **Poison Sumachs** and the astringent **Sumachs** used in tanning. Mastic and Chian Turpentine are obtained from species of *Pistachia*. A number are ornamental plants, such as the beautiful **Pepper Tree** (*Schinus*) now much planted in California.

Sundew (*Drosera*). A genus of inconspicuous but beautiful plants of the Sundew family (*Droseraceae*). Several species are natives of American bogs. The leaves are clothed with glandular hairs which secrete a viscid and digestive fluid that entraps and dissolves insects.

Sunflower (*Helianthus*). A genus of the *Compositae* containing about 60 species, all American, and nearly all occurring in the United States; large, erect, mostly perennial herbs, bearing showy flowers with brown or purple discs and conspicuous yellow rays. The **Common Sunflower** (*H. annuus*), native of the great plains, has become much larger in cultivation, sometimes growing 20 feet high with huge, flowering heads one to two feet in diameter.

Sweet Pea (*Lathyrus odoratus*). An ancient garden flower of the Pea family, which has been greatly developed in form, color, and fragrance during the last half century, there now being upwards of 100 varieties in cultivation.

Sycamore. Certain trees of the genus *Ficus* of the Mulberry tribe of the Nettle family (*Urticaceae*), mostly natives of Asia and Africa, are properly called sycamores. The **Egyptian Sycamore** (*F. sycamorus*), supposed to be the sycamore of the Bible, is a large spreading tree often planted for shade in Egypt and western Asia. In northern Europe this name is also given to a species of maple (*Acer pseudo-platanus*) and in the United States the **American Plane Tree** (*Platanus occidentalis*) is most commonly called sycamore.

Tallow Tree. A name given to various trees which produce a thick oil or resinous-like substance which may be used for making candles. The most important are the **Tallow Tree** of Malabar (*Vateria indica*) and the **Chinese Tallow Tree** (*Sapium sebiferum*).

Tamarind (*Tamarindus indica*). A beautiful spreading tree of the Pea family (*Leguminosae*); a native of India and often cultivated in warm climates for shade and for its fruit, which consists of a pod filled with an acidulous pulp.

Tamarisk (*Tamarix*). A genus of shrubs or trees of the Tamarisk family (*Tamaricaceae*). The Common Tamarisk (*T. gallica*), a native of the Mediterranean region, is often planted in the United States and Europe for ornament. Some authorities consider that the manna of the Bible was derived from Tamarisk (*T. mannifera*).

Teasel (*Dipsacus*). A genus of herbs of the Teasel family (*Dipsacaceae*), natives of the Old World. The Fuller's Teasel (*D. fullonum*), the only important species, has long been cultivated for its spiny heads which are used for raising the nap of cloth. The closely related *D. sylvestris* has become naturalized as a weed in many parts of the United States.

Thistle. A name applied to various Compositae, especially to species of *Cnicus, Cirsium, Carduus, Onopordon, Centaurea,* and *Sonchus,* which are widely distributed, mostly as weeds. The **Canada Thistle** (*Cirsium arvensis*), a slender perennial 1 to 3 feet high with rather small rose-colored flowers, is one of the most troublesome weeds, being extremely difficult to eradicate. The **Scotch Thistle** (*Onopordon Acanthium*), recognized by its cottony or woody leaves, is common in the Atlantic states. It is said to be the emblem of Scotland. The **American Star Thistle** (*Centaurea americana*) is common on dry plains from Missouri to Louisiana and Arizona.

Thyme (*Thymus*). A genus of half shrubby plants of the Mint family (*Labiatae*). The Garden Thyme (*T. vulgaris*), a native of southern Europe, is cultivated in gardens on account of its fragrance and as a culinary herb.

Trillium. A small genus of the Lily family (*Liliaceae*), growing in moist soil from Maine to Georgia, and Minnesota. They have three beautiful, netted veined leaves which arise from the same point near the summit of the stem and are surmounted by a large solitary flower.

Truffle (*Tuber*). A genus of globose, subterranean sac-fungi, comprising some of the most prized of edible fungi. The Common Truffle (*T. cibarum*) and several other species are much sought in southern Europe, where dogs and pigs are trained to locate them by scent. Edible truffles are scarcely found in the United States.

Tuberose (*Polianthes tuberosa*). A plant of the Amaryllis family (*Amaryllidaceae*), native of Mexico, is extensively cultivated for its beautiful and fragrant white flowers.

Tulip (*Tulipa*). A genus of the Lily family (*Liliaceae*), containing about 45 species, native mostly of the warmer parts of southern Europe. The tulip has been a popular ornamental plant for several centuries. *T. Gesneriana*, a native of Asia Minor, is the species from which most of the cultivated varieties, which exceed 1,800 in number, have been produced.

Upas (*Antiaris toxicaria*). A tree of the Mulberry tribe of the Nettle family (*Urticaceae*), found in the Philippine Islands. The fiber of the bark is sometimes made into cloth and the juice of the roots is used by the Malays for poisoning their arrows. The stories concerning the poisonous exhalations of the leaves, "the deadly upas-shade," are purely mythical.

Vanilla. A genus of orchids, natives of tropical America and Asia. The vanilla of commerce is chiefly the fruit of *V. planifolia*, a native of eastern Mexico, but largely cultivated in several tropical countries. This plant has a long fleshy stem and attaches itself to trees by means of aerial rootlets.

VANILLA.

Varnish Tree. A name given to several trees of the Sumach family (*Anacardiaceae*), the juice of which is used for making varnishes. The **Black Varnish Tree** (*Melanorrhoea usitata*), of Burma, and the **Japan Varnish Tree** (*Rhus vernicifera*) are among the more important.

Venus Fly Trap (*Dionaea muscipula*). An insectivorous plant, growing in North Carolina, whose trap-like leaves close suddenly upon insects that alight on them.

Verbena. A genus of the Vervain family (*Verbenaceae*), comprising about 80 species, mostly natives of America, some of which, usually called vervains, are common weeds in the Eastern States. The cultivated verbenas have been mostly derived from *V. canadensis* of the eastern United States and from *V. teucrioides* and *V. venosa* of Brazil.

Virginia Creeper or **American Ivy** (*Psedera quinquefolia*). A common North American woody vine of the Grape family (*Vitaceae*), climbing extensively by means of tendrils. It is distinguished from the **Poison Ivy** by having five leaflets at the end of a single leaf stalk, while the latter has but three. The foliage turns a brilliant crimson in autumn. Of the same genus is the attractive **Japanese** or **Boston Ivy** (*G. tricuspidata*) extensively cultivated in the Eastern States.

Violet (*Viola*). A genus of about 175 species of small, often stemless, mostly perennial, herbs of the Violet family, widely diffused in temperate regions, over 40 wild species occurring in the eastern United States. Wild violets frequently hybridize and many forms are cultivated, the most common being the **Pansy** (*V. tricolor*) and the **Sweet Violet** (*V. odorata*) from European species. Handsome garden varieties have been developed from our native **Bird's Foot Violet** (*V. pedata*) and strains from the **Canada Violet** (*V. canadensis*) are frequently cultivated.

Walnut (*Juglans*). A genus of beautiful trees of the Walnut family (*Juglandaceae*), containing about 10 species, mostly natives of North America and Asia. The **Black Walnut** (*J. nigra*) is a large tree sometimes 100 to 125 feet high, growing from Ontario to Florida, west to Nebraska and Texas. The dark brown wood is largely used for cabinet making and gunstocks. The **White Walnut** or **Butternut** (*J. cinerea*) resembles the black walnut, but is seldom over 100 feet high. The wood is largely used in the interior finish of houses and for furniture. New Brunswick to Georgia and westward to Dakota and Arkansas. The **California Walnut** (*J. californica*), a tree sometimes 65 feet high, is often cultivated in California for shade and as a stock on which to graft the English walnut. The **English Walnut** (*J. regia*) is a tree 60 to 90 feet high, native of Persia and has long been cultivated for its edible nuts, which are an important article of commerce.

WATER LILY. Castalia.

Water Lily (*Castalia*). A striking genus of plants of the Water Lily family (*Nymphaeaceae*), mostly tropical but widely diffused throughout the world, with tuberous roots embedded in the bottom of streams or ponds, large floating leaves, and showy flowers of various colors from white to red, yellow, and blue. A number are favorite water garden plants by reason of their beauty and fragrance. The starchy seeds and rootstocks are used for food in some countries.

Willow (*Salix*). A genus of the Willow family, containing over 150 species, mostly of cool, northern regions, fully one half occurring within the United States. Many hybridize freely, making determination of true species extremely difficult. Most willows are shrubs, some are trees, while Arctic and Alpine forms are dwarf, and herb-like. *S. herbacea* of northern Europe and America is seldom two inches high. *S. arctica* and *S. polaris* are the northernmost woody plants. The largest is the widely cultivated **White Willow** (*S. alba*) introduced from Europe, which

exceeds 80 feet in height. The **Weeping Willow** (*S. babylonica*), also from Europe, is much planted for ornament. The **European Osier** (*S. viminalis*) is cultivated for its twigs. Of the native species, the shrubby **Shining Willow** (*S. lucida*), the **Black Willow** (*S. viara*) sometimes 40 feet high, and the **Heart-leaved Willow** (*S. cordata*) are among the best known.

Wintergreen (*Gaultheria*). A genus of low or trailing shrubs of the Heath family (*Ericacae*). Several species contain the oil of wintergreen, widely used in flavoring and in medicine.

Wistaria. A genus of climbing shrubs of the Pea family (*Leguminosae*) of China and the southeastern United States. Some of the species are often grown on walls of houses and over arbors on account of their beautiful racemes of bluish flowers.

Witch Hazel (*Hamamelis virginiana*). A North American shrub or sometimes a small tree, reaching a maximum height of 25 feet, with clusters of showy yellow flowers. An extract made from the leaves is much used in medicine.

Witch Hazel.

Wood Sorrel (*Oxalis*). A genus of the Wood Sorrel family (*Oxalidaceae*), containing about 250 species, mostly tropical, all herbs, with a sour juice, often bulbous. Some 20 species are North American; among the most common are: the **Common Wood Sorrel** (*O. Acetosella*), white flowered with rosy veins; the **Violet Wood Sorrel** (*O. violacea*) with violet flowers, and the **Yellow Wood Sorrel** (*O. stricta*), with pale yellow flowers and the **Lady's Sorrel** (*O. corniculata*), yellow flowered. All our species have clover-like, trifoliate leaves.

Xerophytes. Plants adapted by modifications of structure to withstand the excessive transpiration of arid regions. Usually there is great reduction in the leaf surface, as in cacti and desert shrubs, or the leaf surface is specially protected by hairs, scales, or waxy deposits.

Yarrow (*Achillea Millefolium*). A perennial herb of the Sunflower family (*Compositae*), with finely divided leaves, strong odor, and a bitter taste, occurring almost throughout northern Europe and America, used to some extent in medicine.

Yeasts (*Saccharomycetes*). One-celled fungi, with a peculiar method of reproduction called budding. There are numerous species, which live chiefly in plant juices or solutions containing sugar, in which they secrete an enzyme, which induces alcoholic fermentation. Yeasts have been cultivated for centuries in the production of beer and other fermented liquors, and in making bread.

Yew (*Taxus*). A genus of some six trees and shrubs of the Yew family (*Taxaceae*), widely distributed in the Northern Hemisphere, three species occurring in the United States. The **American Yew** (*T. canadensis*) is a low, straggling shrub seldom over 5 feet high growing in woods from Newfoundland to Manitoba and south to Virginia and Iowa. The **Florida Yew** (*T. floridana*) is a bushy tree rarely 25 feet high. The **California Yew** (*T. brevifolia*) is a tree 40 to 50 feet high occurring from British Columbia to California, sometimes cultivated in gardens in Europe. The hard wood is used for fence posts. The **European Yew** (*T. baccata*) is a native of Europe and Siberia reaching a height of 40 feet, many varieties of which are cultivated in the United States. The leaves of yews are more or less poisonous.

Yucca. A well-marked genus of the Lily family, containing about 15 species, mostly of the southwestern United States and Mexico, usually with a short, unbranched stem, crowned with a tuft of sword-shaped leaves, tipped with a sharp spine. **Adam's Needle** (*Y. filamentosa*) a showy species, with a huge panicle of flowers, 6 or 8 feet high, occurs near the coast from Maryland to Florida. The much smaller **Bear Grass** (*Y. glauca*) grows on the plains from South Dakota to Texas. The **Spanish Bayonet**, usually almost stemless, with reflexed leaves and purple, edible fruit, ranges from Texas to California and Mexico. The **Joshua Tree** (*Y. arborescens*) is a huge, weirdly branching, woody species, characteristic of the Mohave Desert. Other species form a conspicuous part of the vegetation in the arid regions from Texas to Arizona and Mexico.

Joshua Tree. Mohave Desert.
Yucca arborescens.

Zamia. A genus of cycads, containing about 30 species, all tropical American, several of which yield sago-like food products.

Zanthoxylum. A genus of over 100 trees and shrubs of the Rue family (*Rutaceae*), four occurring in the United States, the best known being the **Prickly Ash** or **Toothache Tree** (*Z. Americanum*) and the **Southern Prickly Ash** or **Pepper Tree** (*Z. Clava-Herculis*), both small trees with prickly twigs, the bark of which is much used in medicine.

Prickly Ash.

Zauschneria (*Zauschneria californica*), Balsamea. A beautiful low perennial with bright scarlet fuchsia-like flowers, native of the coast ranges of California. First collected at Monterey in 1792 by Haenke, the first botanist to visit the region.

Zinnia. A genus of plants of the Sunflower family (*Compositae*), natives of Mexico and the southwestern United States. Several species are commonly cultivated in gardens for their showy flowers.

DICTIONARY OF NATURAL HISTORY.

DIVISION OF ANIMALS.

Comprising Descriptions of Wild Animals. For Domestic Animals, see Index.

Abalone. The Spanish name, generally used in California, for several species of ear shells, marine gastropods of the family *Haliotidae*, which are abundant on rocks near the shore, where they feed upon seaweed. Vast quantities of the animals are dried for food by the Chinese, while the richly colored mother-of-pearl lining the shell makes it highly prized for inlaid work, buttons, and ornaments.

Adder. A common name of the viper or of any venomous snake of the viper family. In the United States, the name is popularly given to both the copperhead and moccasin and also to the harmless hognose snake which is called spreading or blowing "adder." In English literature the term signifies the common viper, which is the only venomous snake of the British Isles.

Agouti. The name given to several small South American rodent mammals of the genus *Dasyprocta*. The common agouti of Brazil is about the size of a rabbit, with long hind legs and short tail, which, together with the rump and thighs, is covered with coarse, bristly hair. It was formerly immensely abundant but, owing to its destructiveness to crops, has been largely exterminated.

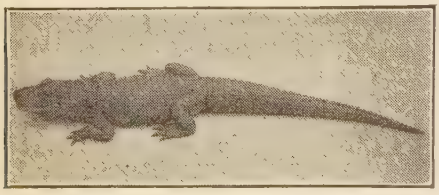
Albatross. The popular name for the large sea birds of the genus *Diomedea*, closely related to the petrels, and the most exclusively oceanic birds known, rarely visiting land except during the nesting season. They gather their food, which consists largely of fishes and mollusks, from the surface of the ocean, never diving beneath it, and will follow a ship for days without resting in order to pick up refuse thrown overboard.

The **Wandering Albatross** (*Diomedea exulans*), of the southern oceans, one of the largest of birds, having a length of 4 or 5 feet and an extent of wing of 10 to 12 feet or more, is justly noted for its powerful and graceful flight.

The superstitious affection and regard in which the albatross is held by sailors was strikingly introduced into literature in Coleridge's "Rime of the Ancient Mariner."

Alewife (*Pomolobus pseudoharengus*). A small fish, 8 to 10 inches long, closely related to the herring and shad, abundant on the east coast of the United States, entering the bays and rivers in vast numbers to spawn. While inferior in quality to the shad, immense quantities are caught for food, upwards of 60,000,000 pounds being reported in a single year.

Alligator. A genus of reptiles of the crocodile family (*Crocodilidae*). The American alligator (*A. mississippiensis*), formerly very abundant in the rivers and swamps of the Southern States is now rarely seen north of Florida and Louisiana, where it is being rapidly exterminated for its hide,



ALLIGATOR.

ivory teeth, and eggs. It is estimated that 3,000,000 alligators were killed in Florida alone, from 1880 to 1900. Like the crocodile, the alligator is active at night, emits bellowing sounds, uses its tail as a weapon, carries its prey to the bottom before eating, but spends more time on land, lying in the sun on swampy shores. During colder months it hibernates in swamp mud. The female alligator deposits from 100 to 200 eggs in a mound of mud and vegetable matter, where they hatch by the heat of the sun aided by the decomposition of the vegetable matter. The young grow slowly and many years are required for maturity. While the alligator is reputed dangerous in the water, it is practically harmless on land, and Hornaday maintains that there is no well authenticated instance of loss of life by alligators.

Alpaca (*Lama pacos*). A domesticated form of the guanaco, raised in herds in Peru and Bolivia for its fine wool and excellent flesh. It feeds upon the scant vegetation of the higher Andes, and is brought down to the native villages at shearing time. (See DOMESTIC ANIMALS.)

ALPACA.

Amoeba. A genus of microscopic animals, one of the lowest forms of the Protozoa, living in moist earth, ponds, and swamps. Its body consists of a single cell of naked protoplasm, yet it effects locomotion by its power of thrusting out portions of protoplasm (*pseudopodia*) in one direction, and retracting them from the opposite direction, and it can ingest food in a similar manner. It reproduces itself by division, the parent organism splitting into two smaller similar organisms, which repeat the process when proper growth has been attained. It is often selected by biologists to illustrate the processes of motion, sensation, nutrition, and reproduction in a very simple form, all of these functions being performed by a single cell in the amoeba.

Anaconda or Water Boa (*Eunectes murinus*). A huge, crushing snake closely related to the boa constrictor, native of the Amazon and Orinoco valleys, sometimes attaining a length of 30 feet. Its nostrils, which open vertically, are provided with valves which can be closed when under water, and its eyes are elevated so that it can see not only ahead, but downward into the water. Although, like other boas, it hangs from trees or coils on banks to catch animals unawares, the anaconda frequently conceals its body in water near shore and grips drinking animals by the neck or nose. While it is strong enough to crush a deer its food consists chiefly of small rodents, peccaries, birds and their eggs, fish, and reptiles, including even its own kind.

Anchovy (*Engraulis encrasicholus*). A small fish about 3 inches long, closely related to the herring, abundant in Mediterranean waters, also in Holland. Large quantities are salted for export, particularly at Leghorn. Anchovies have been used for sauces since ancient times. Some of the American species also are valuable for food preparations.

Ant-Eater (*Myrmecophaga*). A large, edentate mammal, so named because its food consists entirely of ants. The **Great Ant-Eater** (*M. ju-*

bata), native of the tropics of Central and South America, is an animal of remarkable appearance. It has a narrow head, with the jaws and nose prolonged into a sort of a tube, and a small, round mouth without teeth, through which it thrusts its long tongue covered with a glutinous secretion to gather its insect food. It is 4 feet in length exclusive of a bushy tail 2½ feet long. It lives wholly upon the ground, sleeping in its lair during the day and going forth at night in search of ant-hills, devouring the insects and their larvae with great rapidity. Though possessing much strength, the ant-eater is timid and harmless and easily falls a prey to the jaguar and other enemies. The **Two-Toed Ant-Eater** (*Cyclothurus didactylus*) of northern Brazil, so named because only two toes possess claws, is about the size of a squirrel, with a long prehensile tail, lives in trees, and is nocturnal in its habits.

Antelope, American, or Pronghorn (*Antilocapra americana*). A graceful animal, peculiar to western North America, ranking between the antelopes and the deer, and the only member of its family (*Antilocapridae*). It differs from true antelopes in having a branch to its horns and in shedding them periodically like the deer, but, unlike the deer, its horns are hollow and do not break off at the base, only the

American Antelope (*Antilocapra americana*).

outside horny portion being shed. It is a timid animal about three feet high, grazing in open plains and relying upon its sharp eyesight and speed for safety. For short distances it is the fleetest of American animals. The pronghorn was formerly immensely abundant from the Mississippi westward to the Pacific, ranging from Mexico to Canada, but now only a meager fraction remains, chiefly in or near the Rocky Mountains.

Antelopes (*Antilopinae*). A subfamily of hollow-horned ruminant mammals, standing between the ox and the goat among the *Bovidae*, and containing some of the most beautiful, graceful, and fleet-footed animals known. They are mostly slender, and deer-like, with short hair, and more or less spirally twisted horns, numbering about 150 species, of which 135 occur in Africa and the remainder in Europe and Asia, no true antelope being found in America or Australia, the so-called American antelope or pronghorn belonging to a different family. They range in size from delicate gazelles, less than two feet high, to ox-like species such as the nilghau and the eland, the latter sometimes weighing 1,500 pounds. Among the more prominent African antelopes are the addax, bushbuck, eland, gnu, gazelle, hartbeest, klip springer, kudu, oryx, rietbok, steinbok, and waterbuck; Asian antelopes include the Siberian saiga, a gazelle, the nilghau, and the Indian antelope, sasin, or blackbuck. Various species were formerly immensely abundant in Africa, but as nearly all are extensively hunted for food, their numbers are rapidly diminishing.

Ant Lion. The larva of a neuropterous insect of the genus *Myrmeleon* noted for its peculiar habit of making funnel-shaped pitfalls in fine sand, at the bottom of which it lies concealed, waiting to seize and devour the insects, usually ants, which fall into its ingeniously constructed trap.

Ants (Order *Hymenoptera*, family *Formicidae*). Well known, common insects, closely related to the bees, abundant in temperate and tropical regions, numbering over 2,000 species, most of which live in communities and construct more or less

Male. Worker. Female.

Ants.

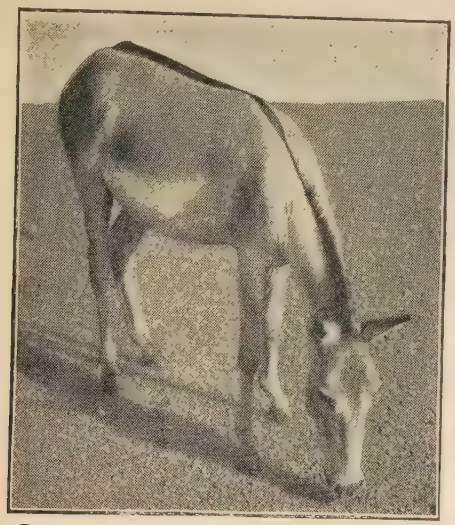
elaborate dwellings in the ground, in wood, or out of clay, fiber, or leaves. A society of ants consists of three classes, males, females, and neuters or workers. The males and females have wings; the workers are wingless. The females are the largest, the males intermediate, and the workers smallest and most numerous. In the warm sunshine of midsummer swarms of males and females may be seen in their wedding flights. The males soon die; the females descend, tear off their own wings, and enter their dwellings or ant-hills to lay eggs. The eggs are placed in special chambers by the workers, where, in about two weeks, they develop into larvae. The nursing workers care for and feed them until they surround themselves with a silky cocoon and become pupae. The pupae lie motionless until ready to appear as ants, when the attendant workers remove their fibrous coverings and feed them until they are able to take care of themselves. In time the winged males and females among them rise in a wedding flight, and a new colony is produced as before. Ants live upon both animal and vegetable food; a favorite with many being the honey secreted by various scale insects and plant lice (*Aphis*) which are kept and fed in the dwellings of some ants for their sweet secretions, so that the Aphis has been called the ant's "cow." Ants display remarkable social instincts in providing for and defending their own colonies but are warlike and wage vicious battles with their neighbors, and many enslave smaller species and live by their enforced labor.

Armadillo. An edentate mammal, closely related to the sloth and ant-eater, which takes its name from the shields of defensive armor with which its skin is provided. The Texas species, called also **Peeba** (*Tatusia peeba*) ranging from Texas to Argentina, is 16 inches long with a tail slightly longer, has claws for burrowing, pointed snout, long tongue, small eyes, and erect pointed ears, and is mostly nocturnal in habit, feeding upon fruits, roots, worms, ants, and carrion.

Asp. A name given to a number of poisonous serpents. The venomous *Naia haie*, which was the sacred serpent often represented in the art of ancient Egypt, and still abundant in the Nile region, is commonly called an asp. It attains a length of 4 to 5 feet and has a dilatable neck resembling that of its near relative, the dreaded Indian cobra. The common viper or adder of Europe is also frequently called an asp. The asp associated with the story of Cleopatra's suicide was in all probability the horned viper (*Cerastes*), a small but very venomous Egyptian snake about two feet long.

Ass, Wild (*Equus*). An equine mammal differing from the horse by longer ears, more shaggy coat, tail only partly covered with long hair, and by absence of callosities on the fore legs. Wild asses occur in dry regions of central and western Asia and in northeastern Africa, usually in small herds of from 5 to 20. In Asia they have been hunted since ancient times for their flesh, which is as highly esteemed as venison. The **Kiang** (*E. hemionus*) of the high plains of Tibet is the largest species, and is extremely

wild and swift. It is light yellowish brown in color with dark mane and tail and a brownish black stripe along the spine. The **Onager** (*E. onager*) of west Asian deserts is smaller, much lighter in color, with a white stripe down the withers and another with a brown stripe in the center along the backbone. The **African Wild Ass** (*E. asinus*), parent of the domestic ass, has longer ears, shorter mane, and more scanty tail. It is creamy gray or blue gray in color with a dark stripe down the back and across the shoulders. It is easy and graceful of movement, very swift, and difficult to approach, and, like the Asiatic species, is hunted for its flesh.



PERSIAN WILD ASS OR ONAGER. Equus onager.

Auk (*Alca torda*). A diving bird having small, short wings and tail, and webbed, three-toed feet, frequently called the razor-billed auk. The name was formerly applied to the great auk (*Alca impennis*), which became extinct about 1844,—a peculiar bird, which was unable to fly owing to the disproportionate smallness of its otherwise perfectly formed wings.

Avocet (*Recurvirostra*). A wading bird of the family *Recurvirostridae* with a very slender upwardly curved bill, exceedingly long legs, and, unlike other waders, webbed toes. There are a number of species. The **American Avocet** (*R. americana*) differs from the European avocet (*R. avocetta*) in the chestnut brown colors of the head, the predominant colors being black and white with blue legs.

Axolotl (*Amblystoma*). A tailed amphibian frequenting ponds and lakes in Mexico just as other species of *Amblystoma*, popularly known as mud puppies or water dogs, do in similar situations in the United States. It is of peculiar interest on account of the fact that it does not usually undergo metamorphosis, but remains in the larval or tadpole stage, keeping its gills throughout life. The axolotl has the aspect of a giant tadpole, 6 to 9 inches long, about to turn into a frog, and is abundant in many localities, sometimes being marketed for food.

Babirussa (*Babirusa alfurus*). An East Indian wild hog inhabiting Celebes, Buru, and other adjacent islands of the Malay archipelago. It is nearly naked, slender legged, and feeds upon fallen fruits instead of rooting in the ground. The male has two pairs of remarkable tusks, both growing upward and curving backward. The upper tusks, instead of protruding from the side of the mouth, grow out of long sockets through the skin on each side of the mouth, and in old animals often reach 8 or 10 inches in length.

Baboon (*Cynocephalus*). An Old World monkey, ranking below the apes, with arms and legs nearly equal, a short tail, and a long, dog-like nose. There are about 16 species, practically all confined to rocky districts in Africa, where they roam in bands, living chiefly upon fruits, roots, insects, and eggs. They are among the strongest and fiercest of monkeys, with ugly dispositions and disgusting habits. (See MANDRILL and MONKEYS.)

Barnacle. A popular name for crustaceans of the order *Cirripedia*, which fasten themselves in great numbers on rocks, wharf piles, and bottoms of ships. They are usually inclosed in a shell composed of several parts, with an opening through which several pairs of long, many jointed, hairy feet are thrust out.

Bass. A name applied to many fishes, chiefly to the perciform families, *Serranidae* and *Centrarchidae*. The former family includes the Salt-water Bass, represented by the **Striped Bass** or **Rock Fish** (*Monroe lineata*), one of the most important of American food fishes, which inhabits the entire eastern coast of the United States, where it is very abundant. It enters fresh water streams to spawn. It is a gamy fish, reaching a length of 3 to 5 feet, and is very popular with anglers. The **Fresh-water Bass** belong to the Sunfish family (*Centrarchidae*) and are represented by the two black basses of sportsmen—the small mouthed (*Micropterus dolomieu*), and the large mouthed (*M. salmoides*).

Bats (*Cheiroptera*). A numerous order of small mammals distinguished by possessing true powers of flight, usually spending the day in caves or dark places, hanging head downward, and flying forth at night in search of food. There are about 500 species, divided into six families, found everywhere except in the frigid zones. They comprise two main groups: the small, numerous, mostly insect-eating bats of temperate and warm regions (*Microcheiroptera*), and the large fruit-eating, or fox, bats of the Old World tropics (*Megacheiroptera*). To the former belong the leaf-nosed bats, the false vampires of Africa and India, the true vampires of South America, the smooth-nosed bats, and the common bats of Europe and America. Our common bats are from 3 to 5 inches long with a wing spread of 9 to 14 inches. The great fruit bats or flying foxes of the East Indies are sometimes 15 inches long with a wing spread approaching 5 feet, and are hunted by natives for their flesh.

Bears (*Ursidae*). A group of carnivorous mammals, most abundant in cool northern regions, only two species occurring south of the equator. Bears are largest and strongest in cold climates, and smallest and weakest in warm regions, being exactly opposite to the cat tribe in this regard. They are large and clumsy but usually good climbers and swimmers and, although flesh eaters, feed largely upon roots, fruits, nuts, honey, and other non-animal food. The **Polar Bear** (*Thalarctos maritimus*), the largest and strongest, and, excepting the grizzly, the most savage of all, occurs throughout the Arctic regions. The **Grizzly Bear** (*Ursus horribilis*), next to the polar in size and strength and the most ferocious and dangerous member of the bear tribe, is found throughout the Rocky Mountains region from Mexico to Alaska. The **Brown Bear** (*Ursus americanus*), the best known species, and formerly abundant in forests throughout the continent, is now limited to remote regions. The **Cinnamon Bear** is a brown phase of the black bear, found in the Rocky Mountains, where it is about as numerous as the true black species.

Beaver (*Castor*). A large aquatic rodent found in North America and parts of Europe and Asia. The beaver, when full grown, measures about 2 feet from tip of nose to root of tail and weighs 30 to 60 pounds, has a palmated hind foot and a broad, flat tail. It is remarkable for its ingenuity in constructing lodges and dams across streams and is highly valued for its fur.

Bee. A name given to a large number of insects of the order *Hymenoptera*. The true bees (*Apoidea*) are divided into 14 families: comprising the social bees, such as the honeybee and bumblebee; and the solitary bees, such as the cuckoo bee, carpenter bee, mason bee, and leaf-cutting bee. Honeybees live in large communities, which consist of a queen, a few hundred drones or males, and between 10,000 and 40,000 workers, or infertile females. The queen is the mother of the whole society, the drones do no work and, after the eggs are fertilized, die or are killed and thrown out; while the workers make the wax, construct the comb, gather the honey, care for the eggs, and nurse the young to maturity. Although the work

of a society goes on continuously, the life of a worker bee is limited to a few months. A queen, however, may live several years and produce hundreds of thousands of eggs each season.

Drone. Worker. Queen.
BEES.

Beetles (*Coleoptera*). One of the largest and best known orders of insects, estimated to contain 200,000 species, of which over 11,000, grouped in 80 families, occur in North America north of Mexico, or about equal in number to the species of flowering plants in the same region. Beetles are distinguished by a pair of horny wing covers meeting in a straight median line down the back; have mouth parts adapted to biting; no tail appendages; and all undergo complete metamorphosis. A few are directly valuable, such as the blister beetle; and others, like the ladybug, destroy harmful insects; but many are injurious to crops, fruit, grain, hides, leather, and fabrics. Important families are Blister Beetles (*Meloidae*), Carrion Beetles (*Silphidae*), Dermestids (*Dermestidae*); Fireflies (*Lampyridae*), Ladybug (*Coccinellidae*), Scarabids (*Scarabidae*), Tiger Beetles (*Cicindelidae*), and Water Beetles (*Gyrinidae, Hydrophilidae*).

TIGER BEETLE.

Bighorn, or Rocky Mountain Sheep (*Ovis canadensis*). A large, horned mountain sheep, inhabiting the most inaccessible parts of the Rocky Mountains and the country west of them. Adult rams attain a length of 6 feet and a height of 40 inches, and the enormous horns, measured along the curvature, sometimes reach a length of 28 inches. The bighorn was once abundant but now exists only in small bands in widely separated localities.

Bird-Catching Spider. A name applied to species of large spiders of the family *Theraphosidae*. Their food consists chiefly of beetles and other insects, but they will attack and eat humming birds and other small creatures. The bird spider (*Mygale avicularia*) of South America has a body about 3 inches long and its legs extend over a space of 8 or 10 inches.

Bird of Paradise. A name applied to a number of cone-billed birds (*Paradisea, Cincinnurus*), natives of the Malay archipelago, which are remarkable for their unusual development of plumage, and the strikingly brilliant colors of the males. Their feathers are highly prized ornaments for headdresses in eastern countries.

Bison, American, or Buffalo (*Bos americanus*). The largest, most imposing, and most widely celebrated of North American animals; formerly exceedingly numerous over an area 2,000 miles

BIGHORN. Ovis canadensis.

wide from the Appalachian forests across the interior plains and the Rocky Mountains to Utah, and 3,000 miles long from Mexico to northern Canada, being immensely abundant east of the Rocky Mountains, occurring in vast herds sometimes miles in extent, and numbering hundreds of thousands. Large specimens stood 5½ feet high, were 10 feet long, and weighed about 2,000 pounds. From 1870 to 1885 the buffalo was systematically slaughtered, being almost exterminated; and unless special efforts are made for their preservation, these remarkable animals, the only wild cattle in the New World, will become extinct. There are now estimated to be less than 350 wild buffaloes in the United States and Canada, and there are only about 1,700 in captivity, where they breed readily and are easily reared.

AMERICAN BISON.

Bittern (*Botaurus*). A large bird allied to the heron with long bill and toes, found in parts of North America, Europe, Asia, and Africa. It inhabits sloughs and marshes of tall, rank grass, in which it hides by standing erect and pointing its beak upward. The bittern is sometimes called Stake Driver on account of its peculiar call.

Blackbird. In the United States, the name is given to members of the family *Icteridae*, near relatives of the European starlings. The best known are the **Red-Winged Blackbird** (*Agelaius phoeniceus*), frequenting marshes and cattail swamps throughout most of temperate North America, and the **Yellow-Headed Blackbird** (*Xanthocephalus*), ranging in similar situations from Indiana to the Pacific coast. The **European Blackbird** is a species of thrush (*Turdus merula*), called merle in France, and formerly called ouzel in England.

Blackfish. The name given to a number of dark-colored fishes. In the United States the name is applied mostly to the tautog (*Tautoga onitis*), a common food fish found from Maine to South Carolina.

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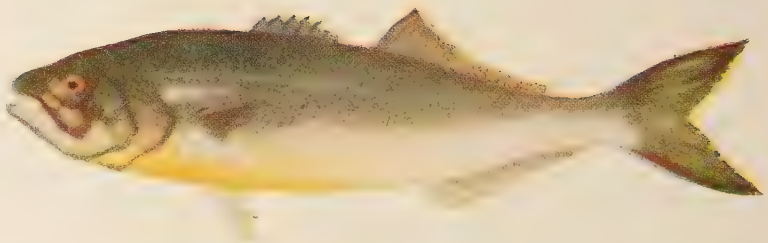


BLUEFISH

SALMON
(SALMO SALAR)

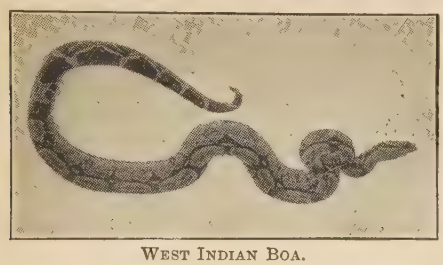
BLACKFISH OR TAUTOG
TAUTOGA ONITIS

FOOD FISHES

Blacksnake, or **Blueracer** (*Bascanium constrictor*). A common colubrine serpent found throughout the United States. It has a slender body of 50 to 80 inches long, and is usually pitch black above and pale green below, but in some states it is bright olive green above. The black snake is active in movement, an excellent climber, and a swift and powerful swimmer. It is useful to the farmer in destroying great number of moles and mice, and it will attack and kill rattlesnakes and copperheads.

Bluefish (*Pomatomus saltatrix*). A well known food and game fish with an average weight of 3 to 5 pounds, of wide distribution, common along the eastern coast of the United States. It feeds upon other fish, swimming in large schools and destroying everything before it.

Boa. A large non-poisonous snake of tropical America of the family *Boidae*, closely related to the python. It feeds upon living animals, which it kills by constriction and swallows whole. The Boa Constrictor of Guiana and Brazil, one of the smaller of the boas, about 12 feet long, is an exceedingly handsome serpent, brownish with a series of complicated, connected blotches.



West Indian Boa.

Boar, Wild (*Sus scrofa*). The wild boar of Europe, Asia, and Africa, parent species of the domestic pig, formerly widely diffused and abundant, is now confined mainly to mountain forests and remote, uncultivated districts. A full grown wild boar stands 3 feet high, weighs over 300 pounds, and has sharp tusks 3 to 4 inches long, capable of inflicting terrible wounds.

Bobolink, Reed Bird, or **Rice Bird** (*Dolichonyx oryzivorus*). An American song and game bird nesting in New England and Canada, when its song is prominent, and wintering in Central America and the West Indies, becoming fat en route in Southern grain fields, where vast numbers are shot for the city markets.

Bovidae. The largest family of the order *Ungulata* or hoofed mammals, comprising about 200 species, with paired, hollow horns, chiefly of the Old World, the Asian forms being the most important, and the African the most numerous. It includes the well known bovine animals, ox, sheep, goat, and antelope.

Buffalo. True buffaloes are bovine ruminants of the Old World, with flattened, angular horns, and lack the hump and mane characteristic of the American bison commonly but incorrectly called buffalo. The **Cape Buffalo** (*Bos caffer*) is a large, fierce, untamable African species living in herds from Abyssinia to Cape Colony. The **Indian Buffalo** (*Bos bubalus*) occurs wild in India, Ceylon, and the Philippines, attaining a height of 5½ feet. It loves water and lives in swampy jungles and marsh lands. It has long been tamed and is a widely used beast of burden.

Bullhead, Bullpout, or **Horned Pout** (*Amiurus nebulosus*). The best known of the smaller catfishes, abundant in muddy streams and ponds from Maine to North Dakota and south to Florida and Texas, and now introduced into California. It is yellowish brown in color, clouded with darker, and attains a length of 12 to 18 inches.

Bumblebee, or **Humblebee** (*Bombus*). A large, hairy-bodied, burly bee, similar in habits to the honeybee but much less highly developed socially, building nests on the ground, often in clumps of grass. About 50 species occur in North America.

Butterflies, together with moths, constitute the well-marked natural order of *Lepidoptera* or scale-winged insects. Butterflies are readily distinguished from moths by having slender antennae knobbed at the ends, by holding their wing erect over the back when at rest, and by their diurnal habits. They occur throughout the world but are most numerous and beautiful in the tropics, some species having a wing spread of 6 inches. Over 7,000 species have been described, of which about 1,000 are North American.

Buzzard (*Buteo*). A large bird of prey closely related to the eagle and hawk, occurring throughout the world except Australia. In the United States there are several species which are commonly called hawks, such as the **Red-Tailed Buzzard** (*B. borealis*) and the **Red-Shouldered Buzzard** (*B. lineatus*). In the Southern States the name is generally given to the turkey vulture, or turkey buzzard (*Cathartes*).

Camelidae. A family of ungulate mammals having teeth of peculiar formation and feet with broad, cushion-like pads. There are six living representatives: the Arabian and Bactrian camels, the guanaco, vicuña, alpaca, and llama, the last two being domesticated varieties of the guanaco.

Bactrian Camel.

Canidae. The Dog family; a group of carnivorous mammals, with digitigrade feet, usually having five toes on the fore feet and four toes on the hind feet, with claws that are not retractile. It includes dogs, wolves, jackals, and foxes.

Canvasback (*Aythya vallisneria*). The most highly esteemed American food duck, ranging throughout North America. When fattened upon its favorite food, the water celery, its flesh is of peculiar excellence and the demand of the game markets has led almost to the extermination of the species in the Eastern States. (See plate of DUCKS.)

Capybara (*Hydrochaerus capybara*). A large American aquatic mammal of the family *Caviidae*, the largest known rodent, reaching a length of about 4 feet and weighing 100 pounds. It resembles a gigantic guinea pig with a long flat head, small ears and eyes, and bristly brown hair.

Cardinal Bird (*Cardinalis cardinalis*). A beautiful bird of the Finch family, the male of which is deep red in color, with the forehead and upper throat black, and with dusky wings. It occurs from the Bermudas north to Massachusetts and west to Wisconsin, and is a brilliant songster and favorite cage bird.

Caribou (*Rangifer*). The North American reindeer, considered by some only a variety of the European reindeer. Two distinct series of forms occur, the woodland caribou and the barren ground caribou. The **Woodland Caribou** is the larger, is darker in color, and has heavier antlers with more numerous points. It frequents woodlands from Newfoundland and Labrador to the Rocky Mountains and

never occurs north of latitude 60 degrees. The **Barren-ground Caribou** occurs in vast numbers on the great arctic plains north of latitude 60 degrees, lives upon lichens, moss, and swamp grass, and is exceedingly useful to the Eskimo for food, leather, and other purposes.

WOODLAND CARIBOU.

Cassowary (*Casuarius*). A large, ostrich-like bird found in Australia and the Papuan Islands. It is more than 5 feet high, has a heavy massive body, and the legs are shorter and stouter than those of the ostrich. The plumage is loose, coarse, and hair-like, and black in color. Both head and neck are bare and the head is surmounted by a horny helmet.

BARREN-GROUND CARIBOU.

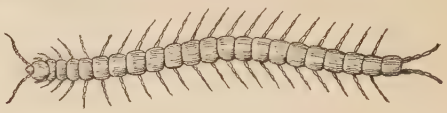
Catbird (*Galeoscoptes carolinensis*). A common song bird closely related to the mocking bird, found in most parts of North America. It is about 9 inches long, slate gray with crown and tail black. Its call resembles the mewing of a cat but in the spring its song is varied and brilliant.

Catfish. A name given both salt and fresh water fishes of the family *Siluridae*, inhabiting chiefly the rivers, ponds, and stagnant waters of warm regions. They have no scales and are provided with beard-like appendages resembling the whiskers of a cat.

Caviidae. A family of South American rodents containing about 14 species, the best known of which is the domesticated guinea pig.

Centiped (*Scolopendra*). A worm-like arthropod with a many-segmented body, having a pair of jointed legs on each segment. The first pair are developed as poison claws, the wounds of which are fatal to insects and small animals, and sometimes dangerous to man. Small species are only an inch long, but large forms reach a foot in length.

Cervidae. An important family of ungulate mammals, the males of which shed their solid horns or antlers annually. There are over 60 species including the deer, moose, elk, reindeer, and musk deer.



CENTIPED *Scolopendra*.

Chameleon. An African arboreal lizard of the family *Chamaeleontidae*, with a worm-like extensile tongue and peculiar globular eyes, capable of moving independently of one another. It is able to change its color rapidly and thus simulate to a certain extent the colors of the surrounding objects. The name is sometimes incorrectly applied to certain American lizards.

Chamois (*Rupicapra tragus*). A goat-like antelope of southern Europe, about the size of a large goat. It is dark brown in color, with horns 6 to 7 inches in length recurving at the tips. Chamois associate in flocks, are skillful climbers, and can jump ravines 20 feet wide. The skin is made into leather much prized for its softness.

Chewink (*Pipilo erythrophthalmus*). A North American finch, a little smaller than the robin, common in the eastern United States. The male is black above, with a white breast, chestnut sides, and wings marked with white. The female is brown where the male is black.

Chigoe (*Sarcopsylla penetrans*). A small flea found in the West Indies and the tropical parts of South America. It buries itself under the skin, usually of the feet, often causing a painful and dangerous ulceration. In the southern and central United States the name chigoe, chigger, or jigger is applied to minute scarlet mites which penetrate the skin and cause intense itching.

Chimpanzee (*Anthropopithecus troglodytes*). An anthropoid ape of central and western Africa, attaining a height of 5 feet at most. The chimpanzee has arms reaching just below the knees, long hands and feet; a pale face with distinct eyebrows, eyelashes, and whiskers, which together with its tractability make it seem the most man-like of apes.

Chinch Bug (*Blissus leucopterus*). A well-known injurious bug, occurring in immense numbers in the Mississippi valley, where it inflicts great damage, particularly to crops of wheat and corn. The female lays about 500 eggs, which mature in about 15 days, and there are two broods during the season.

Chipmunk (*Tamias*). A genus of squirrel-like rodents; also called ground squirrel. It differs from true squirrels in having internal cheek pouches and by stripes along its back and sides. There are about 30 species, widely distributed in North America, Europe, and Asia.

Civet. A carnivorous mammal of the genus *Viverra*, allied to the cat, but having a longer body and shorter legs. It is found chiefly in Africa, southern Asia, and the East Indies. Both sexes have under the tail a double pouch, which secretes an odoriferous, fatty substance much used in perfumery. The name civet cat is sometimes incorrectly applied to the cacomistle (*Bassaris*) of the southwest.

Clam (*Mya arenaria*). A bivalve mollusk found on the Atlantic coast from Florida northward, occurring abundantly in soft bottoms, near low water mark, extensively used for food. The fleshy, edible body of the **Giant Clam** (*Tridacna gigas*) of the East Indies sometimes weighs 20 pounds, while the combined weight of the two valves of the shell may exceed 500 pounds.

Climbing Fish (*Anabas scandens*). A small East Indian fish possessing the ability to live for some time out of water, and to make journeys on moist earth from pond to pond. It is reputed to be able to climb trees.

COBRA DE CAPELLO.

Cobra (*Naia*). The common name of six or seven species of very venomous Old World snakes which possess the power of widening and flattening the neck just behind the head when alarmed or about to strike. The **Cobra de Capello** (*N. tripudians*), very abundant in India and Ceylon, is a slender, active, vicious snake about 4 feet long. Its bite, usually inflicted without warning, is almost always fatal, and causes the death of about 20,000 people annually in India. The **King Cobra** (*N. bungarus*) of the Malay Peninsula, the largest of venomous serpents, attaining a length of 10 feet, is powerfully muscled, and can erect its head 3 feet perpendicularly, and strike an equal distance. It lives exclusively upon other snakes and lizards.

Cockroach (*Blatta orientalis*). A common orthopterous insect, living in houses and ships; originally from the East, now widely distributed, especially in seaport towns. While it is a pest, destroying much food, and even cotton, wool, and leather, it is also of service in ridding ships and houses of bedbugs. The **Croton Bug** or **German Cockroach** (*Blatella germanica*), now abundant in houses in New York, Chicago, and other cities, was quite recently introduced from Europe. Native cockroaches live in the woods under sticks and stones, and sometimes venture into houses.

CONDOR.

Condor (*Sarcorhamphus gryphus*). A large vulture found in the Andes of South America, usually from 9,000 to 16,000 feet above sea level. It is probably the largest living bird of prey, reaching a length of about 48 inches with a wing expanse of 9 to 10½ feet. The condor feeds mostly on carrion but, when hungry, will attack young goats and lambs.

Coot or **Mud Hen** (*Fulica americana*). A wading bird of the rail family, 14 inches long, sooty-colored with a white bill, frequenting swamps from Alaska and Greenland south to Central America, used for food by the poorer classes in southern cities.

Copperhead (*Ancistrodon contortrix*). A vicious, venomous, woodland snake, which strikes without warning, closely related to the rattlesnake, occurring sparingly from New England to Kansas and more abundantly southward. It is about 3 feet long, hazelnut brown or old copper color, with the top of the head coppery red.

Coral. Coral polyps are coelenterate animals, which usually live together in enormous colonies, though a few are solitary. They take in carbonate of lime with sea water or with food, and deposit the coral substance which both supports and protects the body. The forms of corals are numerous and include the star coral, brain coral, organ-pipe coral, feather coral, stag-horn coral, sea-pens, sea-feathers, and sea fans. The coral polyps are of brilliant colors, and many of the skeletons are highly colored. Red coral used in jewelry comes from the Mediterranean and Red seas; pink coral from Italy; yellow from Sardinia; and black from the Red Sea. The madrepore is a large, branching coral found on the reefs of Florida growing in masses nearly 2 feet high, and 3 to 4 feet in diameter. There is no such thing as a "coral insect," and coral is not built cell by cell as the bee builds honeycomb. Some 2,000 species are known.

Coral Snake or **Harlequin Snake** (*Elaps fulvius*). A small, beautifully colored venomous snake (see plate of REPTILES), about 2½ feet long, frequenting woods from South Carolina to western Texas and ranging northward to southern Indiana. It feeds chiefly upon other snakes, lizards, and insects.

Cowbird (*Molothrus ater*). A North American bird, related to the bobolink, breeding from Texas to Manitoba and eastward, feeding around cattle and, like the cuckoo of Europe, laying its eggs to be hatched in the nests of other birds.

Crab. A group of short-tailed crustaceans, containing over 1,000 species, mostly living in shallow sea water. The **Blue Crab** (*Callinectes hastatus*) of the Atlantic coast is a highly-prized edible species both in hard shell and soft shell stage. The **Fiddler Crab** (*Gelasimus vocans*), so named from the manner in which it carries its largest claw, ranges from Cape Cod southward. The **Hermit Crab** (*Pagurus*) thrusts its soft body into a cast-off snail shell and carries it around for protection.

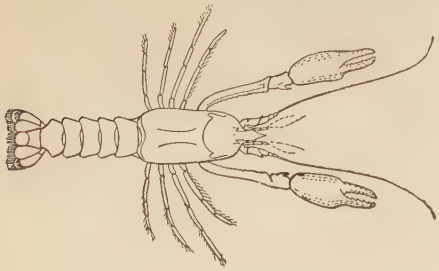
HERMIT CRAB.

MUD CRAB.

Crane (*Grus*). A large wading bird, frequenting marshes, living upon fish, small animals, roots, and seeds, breeding northward but migrating southward in winter, most numerous in the Old World. The **Whooping Crane** (*G. americana*), pure white and black, 50 inches long, and the slate colored **Sand-hill Crane** (*F. mexicana*) occur in the United States.

Crawfish, Crayfish (*Cambarus*). A fresh water crustacean resembling a small lobster, living in lakes, ponds, and streams, feeding upon worms, insects, small animals, and plants. While rarely eaten in America, crawfish are esteemed a great delicacy in Europe, particularly in France.

Cricket (*Gryllidae*). An orthopterous insect closely related to the grasshopper and locust. The **House Cricket** (*Gryllus domesticus*) of Europe, the "cricket on the hearth," has been introduced in the eastern United States. American crickets are nocturnal and solitary and rarely enter houses.



Blind Crawfish. Mammoth Cave.
Cambarus pellucidus.

Crocodile (*Crocodilus*). A large amphibious flesh-eating reptile distinguished from the alligator usually by a narrower, more pointed snout, and differences in the teeth. There are a number of species, all natives of warm regions, two or three of which are dangerous to man. The great **Estuarine Crocodile** (*C. porosus*), sometimes 16 feet long, is a fierce man-eating species of southern Asia and the East India Islands. The **Egyptian Crocodile** (*C. vulgaris*) immensely abundant in the upper Nile, and widely distributed in African rivers, is bold and dangerous. The **American Crocodile** (*C. americanus*) found in tropical America, the West Indies and sparingly in Florida, exceeding 14 feet in length, like the alligator is practically harmless.

American Crocodile.

Crow (*Corvus*). A passerine bird allied to the raven and jay. The **American Crow** (*C. americanus*), occurring throughout North America and assembling in enormous flocks, is one of the most intelligent of birds. The very similar, slightly smaller **Fish Crow** (*C. ossifragus*) of the lower Atlantic and Gulf coasts is readily distinguished by its different call. The **Carrion Crow** (*C. corone*) of Europe, living solitary in pairs instead of flocks, is readily tamed and taught to imitate the human voice.

Cuckoo (*Coccyzus*). A genus of 200 species of strictly insect-eating birds occurring throughout the world. The celebrated **European Cuckoo** (*C. canorus*) is a summer visitor from Africa, which lays its eggs in the nests of other birds. The **Yellow Billed Cuckoo** (*C. americanus*) and the **Black Billed Cuckoo** (*C. erythrophthalmus*) of the eastern United States, build nests, and hatch their own eggs.

Cuttlefish (*Sepia*). A cephalopod mollusk, rarely over 18 inches long, with an oval body and a large head, surrounded by 10 arm-like feet. There are about 60 species living near shore in the open sea, discharging, when pursued, an ink-like fluid, used for writing by the ancients and the source of sepia ink. The shell or bone is fed to canary birds and the whole animal is used for food in India, China, and Japan.

Daddy Longlegs or Harvestman (*Phalangium*). A long-legged, small-bodied, wingless insect, resembling and related to the spiders. There are about 15 North American species, all of which feed largely upon plant lice (*Aphis*) and are beneficial to man. In England the name daddy longlegs is applied to two-winged flies of the family *Tipulidae* (Crane flies).

Daddy Longlegs or Harvestman.

Deer (*Cervus*). A group of ruminant mammals, the males of which usually possess solid bony outgrowths of the skull called antlers, shed and grown anew each year, found in all continents except Australia, valued for their flesh, hides, and horns. The **Red Deer** or **Stag** (*C. elaphus*) of Europe, now rare except in game preserves, is 4 feet high, and weighs 300 to 400 pounds. The small **Fallow Deer** (*C. dama*) of Mediterranean countries, only 3 feet high, is kept in parks for ornament and highly prized for venison. The **Wapiti** or **American Elk** (*C. canadensis*), usually, though improperly, called elk, now mostly confined to the Rocky Mountains, sometimes measures 5½ feet high and weighs 800 pounds. This large deer thrives wherever protected and is easily reared in captivity. The **White Tailed** or **Virginia Deer** (*Dama virginiana*), a most graceful and elegant species, once abundant nearly throughout the continent, is now rare except locally in the United States. The **Mule Deer** (*Dama hemionus*), so named on account of its long ears, is a somewhat larger Rocky Mountain species. The **Black Tailed Deer** (*Dama columbiana*), with a distinctly black tail, smaller and more graceful than the mule deer, occurs from California to Alaska.

Dingo (*Canis dingo*). The wild dog of Australia. It is smaller than the wolf, usually about 2 feet high, and varies in color from brown to black. Dingos are abundant in the woods of Australia, where they hunt in large droves.

Dodo (*Didus ineptus*). A large extinct bird, related to the pigeon, formerly inhabiting the island of Mauritius. It was larger than the swan, with a clumsy body, short legs, and a large bill and was unable to fly. It became extinct about the end of the seventeenth century.

Dolphin (*Delphinus*). A fish-shaped aquatic mammal related to the whales, usually less than 10 feet in length, with a horizontal tail. The **Common Dolphin** (*D. delphis*), occurring in all except polar seas, 6 to 8 feet long, feeding largely upon squids, was formerly valued for food. It was sacred to Apollo, and the Delphic oracle was named for it.

Dove, Mourning or Turtle (*Zenaidura macroura*). A common and very widely distributed bird in the United States, about 1 foot long, with a characteristic mournful note. It is usually seen in pairs, lives on seeds and fruits, and is prized for its excellent flesh.

Dragon Fly. Several families of insects (order *Odonata*) with long, cylindrical bodies, large head and eyes, and four membranous wings, very voracious feeders upon other insects, but harmless to man. Also called **Spindle, Snake Feeder,** and **Devil's Darning-needle.**

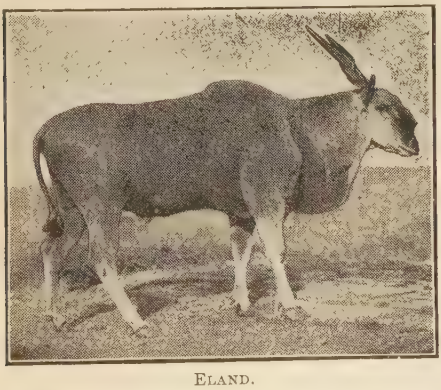
Duck. The common name for birds of two divisions of the duck family, the River and Pond ducks (*Anatinae*), including the **Mallard, Teal, Shoveler, Widgeon, the Baldpate, Pintail,** and **Wood ducks,** and the **Sea** and **Bay ducks** (*Fuligulinae*), which include the **Red-head, Canvasback, Golden-eye, Scoter, Eider,** and **Harlequin ducks.** The **Mergansers** (*Merginae*) are sometimes called fish ducks.

Duckbill (*Ornithorhyncus anatinus*). An aquatic egg-laying mammal of the order *Monotremata*, found in Australia, Papua, and Tasmania. It is about 18 inches long, with a duck-like bill, webbed feet, and a short, flat tail. It inhabits rivers, burrowing in the banks and feeding largely upon mollusks and aquatic insects.

Eagle. A large diurnal bird of prey of the Falcon family (*Falconidae*). The **Golden Eagle** (*Aquila chrysaetus*), occurring throughout Europe, northern Asia, and northern Africa, also in North America, though rare east of the Mississippi, is a dark brown bird, 3 feet long with a wing spread of 7½ feet, usually nesting in cliffs or trees, and feeding upon small animals. The **Bald Eagle** (*Haliaetus leucocephalus*), the emblem of the United States, ranging throughout North America, is a dark brown sea eagle, with white head, neck, and tail, about equal to the golden eagle in size, living near water, and subsisting mainly upon fish and small land animals.

Earthworm, Angleworm (*Lumbricus*). A burrowing worm, common throughout the world except in deserts, living upon vegetable matter in the soil, which is greatly improved by its workings. In South America, Africa, and Australia giant species occur, sometimes 6 feet long and an inch in diameter.

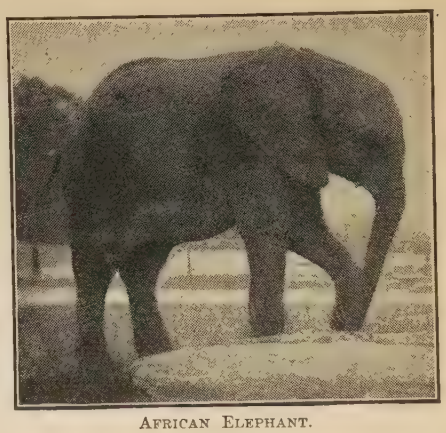
Eel (*Anguilla chrysypa*). A long-bodied, freshwater food fish which goes to the sea to spawn; common in most regions except Pacific America; usually 20 to 30 inches long, very voracious, eating refuse and dead fish, and destroying great numbers of fish caught in fishermen's nets; very prolific, the young returning from the sea to fresh waters in vast numbers.



ELAND.

Eland (*Oreas canna*). A large ox-like antelope, formerly found all over South Africa, but now inhabiting only the interior region. It is about 5½ feet high, and has a body somewhat like that of an ox and a head like a deer, with twisted horns and a small mane. Elands generally go in herds of 50 to 100 and look so much like cattle that they are often mistaken for them.

Elephant (*Elephas*). The largest living land animal, with a huge body supported by pillar-like legs, an immense head provided with tusks, and a long proboscis or trunk. There are two living species: The **Asian Elephant** (*E. indicus*), native of southern Asia, Ceylon, and Sumatra, usually from 7 to 10 feet high, is extensively domesticated and is the species usually seen in menageries. The **African Elephant** (*E. africanus*) of central Africa, standing 10 to 12 feet high, is wilder and fiercer, with much larger ears, darker skin, and usually has one nail less on each foot, infrequent in captivity, though Jumbo was an African elephant.



AFRICAN ELEPHANT.

Elk. In America the name commonly given to a large, handsome deer (*Cervus canadensis*), also known as **Wapiti.** In Europe the moose (*Alces*) is called elk. (See DEER, MOOSE.)

Emu (*Dromaeus*). A large ostrich-like bird of Australia, allied to the cassowary but larger, and next in size to the ostrich. It differs from the cassowary in having the neck and head feathered, in the absence of a helmet, and in having more slender legs. Emus live in open plains, where they feed upon berries, herbs, etc. They thrive in captivity and are valued for their eggs and flesh.

Equidae. A family of hoofed mammals (*Ungulata*), which have but one toe incased in a solid hoof, and 42 teeth—including the horse, ass, zebra, and quagga.

Ermine (*Mustela erminea*). A kind of weasel found in North America, Europe, and Asia, which turns white in winter, and is valued for its fur. It is about 10 inches long and in summer is reddish brown above and whitish below, with tip of tail black. The habits of the ermine are much like those of the common weasel, but it preys upon larger animals, such as hares and rabbits. In Europe it has been domesticated and used like the ferret.

Falcon (*Falco*). A long-winged bird of prey with a hooked beak and strong, sharp claws, striking down its quarry in flight, found nearly throughout the world. The **Peregrine Falcon** (*F. peregrinus*), found in every continent except Australia, 16 inches long, is the "noble peregrine" of falconry, a veritable tiger of the air, fierce, strong, and swift, quickly overtaking and overpowering the swiftest birds. The **Sparrow Hawk** (*F. sparverius*), very common in the United States, only 11 inches long, a beautiful and graceful species, is one of the boldest and most active falcons.

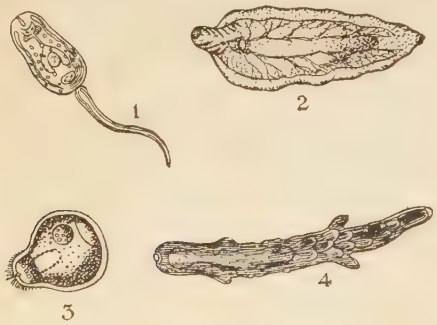
Fer-de-Lance (*Bothrops lanceolatus*). A much dreaded, venomous snake of the West Indies, 4 to 6 feet long, with very long poison fangs.

Flamingo (*Phoenicopterus*). A small-bodied bird with very long neck and legs, downwardly turned bill, and scarlet or rose-colored plumage with black wings. The **American Flamingo** (*P. ruber*), now rare in Florida and Louisiana, stands nearly 4 feet high. It is easily tamed and often kept in zoölogical gardens.

Flea (*Pulex*). A small, reddish-brown insect, with a beaked mouth for biting, and long, strong legs, most abundant in the tropics and in warm, dry regions, as in southern Europe, where they are intolerable pests. There are many species, those infesting animals being different from the human flea (*P. irritans*).

Flies (*Muscidae*). A large family of dipterous insects of which the house fly is typical. In its most restricted sense the family numbers about 150 North American species. The larvæ, known as maggots, live in decaying animal and vegetable matter, and reach maturity very quickly. The house fly requires only from 10 to 14 days. Most adult Muscidæ are of repulsive habits, often carrying germs of disease from their filthy surroundings and depositing them on food. The typhoid fever, when epidemic in military camps, is usually due to these flies. Among better known kinds are: The **House Fly** (*Musca domestica*), which usually breeds in horse dung, might easily be greatly reduced in numbers. Two kinds of **Blow Flies** (*Calliphora vomitoria and C. erythrocephala*) live as larvæ in decaying flesh. The **Screw-worm Fly** (*Chrysomyia macellaria*), which occurs from the United States to Argentine Republic, attacks raw sores of domestic animals. The **Biting House Fly** or **Stable Fly** (*Stomoxys calcitrans*) closely resembles the house fly, from which it can be distinguished by its sharper proboscis; it annoys horses and cattle, and bites human beings. The **Horn Fly** (*Haematobia serrata*), smaller than the house fly, attacks cattle, often swarming about the base of their horns. The African **Tsetse Flies** of various species (*Glossina*), insects resembling the common stable fly, transmit by their bites small protozoa (*trypanosomes*) into the blood of horses, cattle, and dogs, resulting fatally; one species (*G. palpalis*) is in this way the cause of the fatal "sleeping sickness" in man, the trypanosomes being transmitted from the crocodile, it is believed.

Flounder or **Flatfish** (Family *Pleuronectidae*). A flat fish frequenting sandy sea bottoms, in which both eyes, by a gradual twisting of the head, appear on one side, which is always uppermost. There are about 50 genera and upwards of 400 species including many valuable food fish such as the halibut, plaice, and turbot.



Liver Fluke.
1. Larval stage. Cercaria. 2. Mature fluke.
3. Cyst. 4. Redia stage.

Fluke (*Distomum*). A small, flat, platyhelminthine worm, infesting a great variety of animals, several species attacking man. The common **Liver Fluke** (*D. hepaticum*), parasitic in man and many ruminant animals, causes the destructive disease called rot in sheep. The adult worm in the liver produces hundreds of thousands of eggs, which are discharged through the bile duct. Eventually some of these are washed into ponds where they hatch in the water. The newly-hatched larvae immediately attack and enter the bodies of certain amphibious snails, where they undergo a remarkable series of changes, finally escaping as active cercariae, which encyst upon blades of grass, and are eaten by sheep and other animals. The cyst dissolves in the stomach and the liberated worm penetrates the liver, where it matures and again lays eggs.

Flying Fish (*Exocoetus*). An open-sea fish, possessing large pectoral fins, which leaps from the surface and glides long distances through the air. There are over 40 species, mostly of tropical oceans.

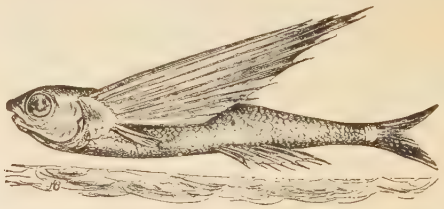
Flying Squirrel (*Sciuropterus*). A squirrel provided with a distensible membrane connecting the fore and hind legs, by means of which it glides from tree to tree. The Assapan (*S. volans*), occurring from Canada to Kansas and southward, about 10 inches long including the tail, is the most common American species.

Fox (*Vulpes*). A carnivorous mammal closely related to the wolf and dog, but smaller, with a narrow, pointed nose and a bushy tail, dwelling in burrows, hunting singly at night, living upon small animals and fruit and noted for sagacity and cunning. The **American Red Fox** (*C. fulvus*), reddish yellow, throat and tip of tail white and ears black, ranges eastward from the Missouri river in the Northern States and Canada. The **Prairie Fox** (*V. macrourus*), lighter colored with a larger tail, inhabits the central plains. The **Kit** or **Swift Fox** (*V. velox*), of arid western regions, is smaller, handsomer, and remarkably fleet. The **Arctic Fox** (*V. lagopus*), with thick fur, covering even the soles of the feet, pure white in winter and dull rusty and yellowish in summer, occurs throughout Arctic regions. The **Gray Fox** (*Urocyon virginianus*), more dog-like, gray mixed with black, lives in hollow trees or caves, from Pennsylvania south and west to Texas. Many species occur in Europe, Asia, and Africa.

Fringillidae (Finch family). The largest family of birds, containing 100 genera and more than 500 species, occurring in all continents save Australia, one seventh of all being North American, mostly seed-eating song birds of plain plumage, though some are brilliantly colored, including sparrows, grosbeaks, cross bills, linnets, the snowbird, and the canary.

Frog (*Rana*). A four-footed, tailless amphibian, with the hind legs strongly developed for leaping, smooth skin and webbed feet, living chiefly on insects and small mollusks. There are about 270 species, widely distributed except in arid or frigid regions. The **Bull Frog** (*R. catesbiana*), 5 to 8 inches long, occurring in sluggish waters from Kansas eastward, is noted for its deep bellowing note. The **Common** or **Leopard Frog** (*R. pipiens*), 2½ inches long, usually green above, marked with black patches edged with whitish, is abundant throughout North America, west to the Sierra Nevadas. The **Green Frog** (*R. clamitans*), 3 inches long, confined to the eastern United States, is found also in Europe, Asia, and North Africa. (See plate of Frogs.)

Garter Snake (*Thamnophis*). The most abundant North American snake, occurring everywhere in grassy places. The most common species is *T. sirtalis*, found throughout the United States, east of the Sierra Nevadas. There are many other species, all absolutely harmless, and on the whole beneficial to man.



Flying Fish.

Gavial (*Gavialis gangeticus*). A carnivorous reptile of the crocodile family, occurring in the Ganges and other Indian rivers, differing from the crocodile in having a long, slender, knobbed snout, one fifth as long as the body, which sometimes exceeds 18 feet. It feeds upon small animals and is harmless to man.

Gila Monster (*Heloderma suspectum*). A venomous lizard of the arid regions of Arizona, New Mexico, and Sonora, about 18 inches long, whose bite is fatal to some small animals but probably not to man.

Giraffe or **Camelopard** (*Giraffa camelopardalis*). An African hoofed mammal, the tallest living animal, attaining a height of 18 feet, a large part of which is represented by the abnormally long neck. The body, legs, and neck are strikingly colored and spotted; the head is finely formed, with erect

LEOPARD FROG
(RANA PIPIENS)

TREE FROG
(HYLA)

GREEN FROG
(RANA CLAMITANS)

AMERICAN TOAD
(BUFO AMERICANUS)

AMPHIBIANS

ears, full lustrous eyes, and two bony, hornlike outgrowths from the skull, covered with hair. The tongue is very long, slender, and rough, and is used for plucking trees, the leaves of which constitute most of its food. The giraffe is found only in central and southern Africa.

Glass Snake (*Ophisaurus ventralis*). A smooth, legless, snake-like lizard about 2 feet long, found from North Carolina to Wisconsin and southwestward to Mexico. It is immediately distinguished from true snakes by having eyelids and external ear openings. In common with many lizards it can part with its tail in an emergency and grow a new but much shorter one thereafter, giving rise to many erroneous popular notions as to brittleness and ability to reunite its separated parts.

Gnu (*Connochaetes*). A large ungainly South African antelope, somewhat resembling both the ox and the horse in appearance. The **White-Tailed Gnu** (*C. gnu*), 6½ feet long, standing 4 feet high, lives in herds in open plains where it is hunted for its flesh, hide, and horns.

Golden-eye or Whistler (*Glaucionetta clangula americana*). A North American duck, breeding from Maine to Manitoba and northward, wintering southward in Cuba. It is a vigorous diver and swimmer, and the sound of its rapidly driven wings gives rise to the name whistler. (See plate of DUCKS.)

Goose. The common name for a member of a division of the duck family (*Anatidae*), larger than ducks but smaller than swans, found nearly throughout the world. About 10 wild species visit or breed in the eastern United States, among them the **Snow Goose** (*Chen hyperborea*), the **Black Goose** (*C. caerulescens*), the **White Fronted Goose** (*Anser albifrons, var.*), the **Canada Goose** (*Branta canadensis*), and the **Brant** (*Branta bernicla*).

Gopher (*Spermaphilus*). The common name of various ground squirrels possessing cheek pouches. The most abundant is the **Striped Gopher** (*S. tridecemlineatus*) of the prairies from Michigan to Texas and northward, about 10 inches long including the tail; marked with 13 stripes. The true **Pocket Gopher** (*Geomys bursarius*) of the northern Mississippi valley is slightly larger and has cheek pouches lined with hair, opening outside the mouth. The name gopher in the Southern States is applied to a burrowing tortoise.

Gorilla. This largest, most muscular and powerful of the anthropoid apes, a native of the forests of Gabun, black in color, with naked face, small ears, and wide nostrils, a vegetable feeder, living in families, is savage and untamable, not hesitating when cornered to attack man. A full grown male stands more than 5 feet high when erect, and sometimes weighs 400 pounds.

Grasshopper. An orthopterous insect closely related to the locusts, but provided with long antennæ and never migrating in swarms, usually green, resembling the vegetation it lives upon. The so-called grasshoppers once so destructive on western plains are true locusts.

Grouse. Large game birds of northern regions belonging to the family *Tetraonidae*, some of which, as the **Capercaille** of Europe, are nearly 3 feet long, weighing 15 pounds. The **Ruffed Grouse** (*Bonasa umbellus*), wrongly called Partridge in the north, and Pheasant in the south, 18 inches long, makes a peculiar drumming sound by quick strokes of its wings. The **Pinnated Grouse** (*Tympanuchus americanus*), commonly called Prairie Hen or Prairie Chicken, 17 inches long, was formerly abundant from Indiana westward. The **Sharp Tailed Grouse** (*Pedioecetes phasianellus*) of the Arctic plains extend southward to Illinois. The **Sage Cock** or **Sage Chicken** (*Centrocercus urophasianus*) of western desert plains is the largest American grouse, sometimes 30 inches long. It feeds upon various kinds of sage brush, which impart a bitter flavor to its otherwise excellent flesh.

Guanaco (*Lama guanacus*) A South American mammal of the camel family, found in high altitudes in Peru and Chile, and on the plains of Patagonia; much smaller than the camel, humpless, and with two-toed feet. Both the llama and alpaca probably are domesticated forms of the guanaco.

Hare (*Lepus*). A small rodent, with long hinder legs, short, bushy tail, large eyes, long ears, and almost woolly fur, most numerous in northern regions, usually feeding upon tender plants. The **Cotton Tail** (*L. sylvaticus*), 18 inches long, ranging from Hudson's Bay to Florida and eastward, is our most common species. The **Prairie Hare** or **Jack Rabbit** (*L. campestris*) 23 inches long, ranging from Dakota to Kansas and west to Oregon, turns white in winter.

Hawk (*Accipiter*). In the United States the name is applied to the buzzard, falcon, harrier, and kite, or to almost any bird of prey not an eagle, vulture, or owl. Among the true hawks (*Accipiter*) are the **Sharp-shinned Hawk** (*A. velox*), also called **Pigeon Hawk**, 12 inches long, occurring throughout the United States; the **Chicken Hawk** (*A. cooperi*), also called **Cooper's Hawk**, a bold bird, 18 inches long, feeding upon grouse, pigeons, and hares. The larger **Goshawk** (*A. atricapillus*), 24 inches long, ranging far northward, is a daring robber of poultry.

Heron (*Ardea*). A genus of birds with long necks, wings, and legs, most numerous in warm and tropical regions, frequenting marshy places. The **Great Blue Heron** (*A. herodias*), 40 to 50 inches

GREAT WHITE HERON.

long, is common throughout North America; the **Great White Heron** (*A. occidentalis*) is slightly larger and entirely white, one of the most striking of the herons. The **Little Blue Heron** (*A. coerulea*), 24 inches long, ranges from Illinois eastward, and the **Little Green Heron** (*A. virescens*), 18 inches long, occurs throughout the continent.

Herring (*Clupea harengus*). A very important food fish, abundant on both shores of the Atlantic, particularly in northwestern Europe. It attains a length of 12 inches and an average weight of one pound. Herring are cured in vast quantities, and young herring are put up as sardines.

Hippopotamus. A thick-skinned, amphibious, hoofed mammal, most nearly related to the common pig, two species of which exist in Africa. The **Common Hippopotamus** (*H. amphibius*), ranging from equatorial Africa southward, exceeded only by the elephant and rhinoceros in bulk, attains a length of 14 feet and a height of 4 to 5½ feet. It is the most aquatic of all hoofed animals, graceful in the water, but very awkward on land, which it visits chiefly at night to feed on herbage. The **Liberian Hippopotamus**

(*H. liberiensis*), scarcely larger than a full grown hog, which it resembles in habits, occurs only in Guinea.

Horned Toad (*Phrynosoma cornutum*). A small, grotesque, harmless lizard about 5 inches long, with a somewhat toad-shaped body, bearing spines on its head and back, common on arid plains of the western United States.

Horse, Wild. The wild horses mentioned by Strabo and Pliny among the Romans and in writings of the Middle Ages were probably all descendants of tame horses which had returned to a wild life. The wild horses which became so numerous in Texas and other western states as well as those of the plains of South America originated from European horses left behind by early Spanish explorers. Some consider the tarpan of central Asian steppes the progenitor of the domestic horse, but most regard it a very wild descendant of tame horses. However, a truly wild horse was discovered in the deserts of Mongolia about 20 years ago by a Russian naturalist, and named for him **Przevalski's Horse** (*Equus przevalskii*). It is about the size of the zebra and more closely resembles the domestic horse than any other known wild species. Its coat, which is of a dun color, much darker on the front of the legs, becomes very shaggy in winter. The mane is short and there is no forelock. In summer a narrow dark line is visible in the middle of the spine extending from the mane to the tail. The bristles of the upper part of the tail are shorter than in the horse, but longer than in the donkey, and the head and limbs are larger in proportion to the body than in the domestic form.

PRZEVALSKI'S HORSE. Summer coat.

House or **English Sparrow** (*Passer domesticus*). A small bird, 6 inches long, ranging from India westward throughout the most of Europe, and introduced into America, Australia, and New Zealand; first brought into the United States at Brooklyn, N. Y., in 1851, to destroy insects; now widely diffused and abundant east of the Rocky Mountains.

Humming Birds (*Trochilidae*). A family of some 75 genera and 400 species, peculiar to America, containing the smallest and most brilliantly colored of birds, mostly tropical, but a few occur in temperate regions. The largest species is 8½ inches long, the smallest about 2½ inches; 17 visit various portions of the United States in summer, one ranging as far as Alaska. The **Ruby-Throated Humming Bird** (*Trochilus colubris*), breeding from Florida to Labrador, is the only representative in eastern North America.

Hyena (*Hyaena*). A carnivorous mammal, most numerous in warm regions of Asia and Africa, of repulsive appearance and habits, living on carrion and attacking sick or wounded animals. There are several species, which, like the vultures among birds, are valuable as scavengers.

Ibis. A genus of birds allied to the herons. The **Sacred Ibis** (*I. aethiopica*) of the ancient Egyptians, native of the Nile valley and southward but now rare in Egypt, is a beautiful bird, with pure white plumage, contrasted with black head, neck, and wing feathers, and a bronze blue-black plume. The **Scarlet Ibis** (*Guara rubra*) of tropical America is pure scarlet in color excepting the black tips of wing feathers. The **White Ibis** (*Guara alba*) of the southern United States is pure white with black tipped wing feathers.

Iguana. A genus of large arboreal lizards, mostly of tropical America, with a crest of spines extending from the neck to the end of the tail, and a wide fold of skin under the throat. The **Common Iguana** (*I. tuberculata*) 3 ot 4 feet long, feeding upon leaves, fruits, and insects, is much prized for food in South America. The **Ring-tailed Iguana** (*Cyclura carinata*) of the West Indies, 4 feet long, mostly grass eating, is strong fleshed and inedible. The **Black Iguana** (*Ctenosaur acanthus*) of California is valued for its flesh.

PRZEVALSKI'S HORSE. Winter coat.

Jackal (*Canis aureus*). A carnivorous mammal very closely related to the dog, found in the Mediterranean region and southern Asia, about 2 feet long, possessing an offensive odor like the fox, grayish yellow in color, with many varieties; nocturnal in habits, attacking domestic animals, robbing hen roosts, fond of fruit, but also eating carrion. The jackal is readily domesticated.

Jackdaw (*Corvus monedula*). A European bird, 10 inches long, the smallest member of the crow family (*Corvidae*); glossy black with back of head ashy gray; an omnivorous feeder, robbing other birds of their eggs; nesting on hollow trees, church towers, and corners of buildings, possessing the power of imitating sounds, for which it is sometimes kept as a pet.

IGUANA.

Jay. The jays belong to a subdivision (*Garrulinae*) of the crow family (*Corvidae*), one of their near relatives being the magpie; distinguished from crows by longer tail and more brilliant colors. There are about 30 North American species, many more or less bluish in color, the majority occur-

ring in the southwestern United States and Mexico. The **Blue Jay** (*Cyanocitta cristata*) of eastern North America is a noisy, rather bold bird, nesting in trees, often about houses; about a foot long, with crest and back light blue, wing and tail feathers deep blue with white tips and black bars, and a black collar on the breast.

Jellyfish or **Medusae.** Free swimming marine coelenterate animals with disc-shaped or umbrella-shaped bodies of jelly-like consistency, composed chiefly of water, only about one per cent. being solid matter. Small forms are less than an inch in diameter, while larger forms measure 6 to 7 feet across the disc, with tentacles 100 feet long. Many are beautifully colored and nearly all are phosphorescent, some giving forth a strong light when disturbed. The stinging tentacles of some are poisonous to bathers. The common **Yellow Jellyfish** (*Aurelia flavidula*) of the New England coast, 8 to 10 inches in diameter, is not poisonous.

June Bug. A heavy bodied beetle of the family *Scarabaeidae*, appearing in great numbers about lights in May and June. In Europe most June bugs are species of *Rhizotrogus*; in eastern North America there are over 100 species of *Lachnosterna*, supplying most of the June bugs. The beetles do but little damage, but the larvae—white fleshy grubs—injure turf and cut off roots of strawberry plants. The **Common June Bug** (*L. fusca*) abundant in the northeastern United States is almost an inch long and dark brown in color.

Kangaroo (*Macropodidae*). A marsupial mammal peculiar to the Australian region, distinguished by disproportionately large hind limbs, mostly ranging in size from that of a sheep to a rabbit; all strictly vegetarian, living on grass and roots. Some are nocturnal in habit and all are timid creatures, protecting themselves only when forced to do so. When at rest kangaroos stand upright, locomotion being accomplished by a series of immense bounding jumps. The marsupium or pouch in which the young are placed as soon as born contains four nipples. The young of the Great Kangaroo are only about an inch long at birth. There are two groups, the true kangaroos, 30 species, and the rat kangaroos, 10 species—none larger than rabbits. The **Great Kangaroo** (*Macropus giganteus*) 4 to 5 feet high with a tail 4 feet long, of eastern Australia and Tasmania was discovered by Captain Cook in 1770.

Katydid. The katydids are large, green, long-horned grasshoppers, with well developed wings, and feed amongst foliage. The **Common Katydid** (*Cyrtophyllus concavus*), of the northwestern United States, the sharp chirp of which gave rise to the name ka-ty-did, is arboreal in habits but rather local in occurrence. Its evening song, heard in late summer and fall, often in the tops of tall elms, is produced by rubbing the wing-covers and wings together.

Kingbird (*Tyrannus*). Kingbirds are flycatchers, of powerful and skillful flight, 8 to 10 inches long, black or gray above with an erectile crest marked with a yellowish-red patch; usually white or gray below. During nesting season the male attacks all birds that come near his nest, teasing and driving away eagles, hawks, and crows, by darting down upon their backs. The **Common Kingbird** (*T. tyrannus*) of eastern North America is very useful as an insect destroyer, though it sometimes eats bees.

King Crab or **Horseshoe Crab** (*Limulus polyphemus*). The king crab, believed by some naturalists to belong to the crustacea, and by others to be nearly related to the arachnida, has a body—cephalothorax—shaped like the foot of a horse, behind which is a wedge-shaped abdomen, and a long narrow inflexible tail. It burrows in sandy or muddy shores of the Atlantic coast, living on small animals, chiefly worms. Two other species occur in Asia.

Kingfish. The kingfish (*Menticurrus nebulosus*) of American fishermen, a game fish of excellent flavor, closely allied to the mullets, occurs along the Atlantic coast from Massachusetts to Florida, and is also locally known as tomcod, barb, black mullet, and whiting. The name is given to many other fishes. The brightly colored deep-water fish (*Lampris luna*) called kingfish in England, attaining a length of 4 feet, and very highly esteemed for its rich flesh, intermediate between that of the salmon and tunny in color, seems best entitled to the name.

Kite. A diurnal bird of prey, of the same family as hawks and eagles (*Falconidae*), but with a deeply forked tail. The **European Kite** (*Milvus ictinus*), once abundant in Great Britain, now nearly extinct, slightly exceeds 2 feet in length, of which the tail is nearly one half. Rags usually form a part of its tree-built nest of mixed materials, explaining the meaning of Autolycus's advice to laundresses (Winter's Tale, Act IV, scene 3), "When the kite builds look to lesser linen." The flight of the kite is very elegant and strong, and few modern Londoners "who see the paper toys hovering over the parks in fine days of summer, have any idea that the bird from which they derive their name used to float all day in hot weather high over the heads of their ancestors." Other species occur in the Old World, and of the five North American Kites the best known is the **Swallow-tailed Kite** (*Elanoides forficatus*), 25 inches long, bronze purplish with white head and tail, which ranges from South America to Minnesota and Pennsylvania.

Koodoo or **Kudu** (*Strepsiceros kudu*). This African antelope, now becoming rare from excessive hunting, found from Abyssinia southward to the Cape, stands over 4 feet high at the withers, and the spiral horns, present only in the male, are sometimes 4 feet long. It is reddish brown with vertical white stripes. The **Lesser Koodoo** (*S. imberbis*) of Somaliland, is much smaller.

Ladybird or **Ladybug.** Ladybirds (*Coccinellidae*) are short-legged, approximately hemispherical beetles, of medium or small size, often red marked with black spots, or black with red spots. There are hundreds of kinds, some of which are found in all temperate and tropical regions, more than 150 species having been described from North America north of Mexico. The larvae, like the beetles themselves, eat plant lice, scale insects, mites, and eggs of other insects. So useful are the ladybugs and their larvae that economic entomologists are naturalizing foreign kinds to aid in the control of especially noxious scale insects. Ladybugs are especially active in bright sunlight, their acrid blood protecting them from destruction by birds.

Lark. Larks are migratory, insectivorous passerine birds belonging to the family *Alaudidae*, but when the word lark is used alone the European lark is meant. Other birds which resemble the *Alaudidae* are often called by the name of lark with a prefix, as the meadow lark and tit lark. The **Lark** or **Skylark** (*Alauda arvensis*), 7 inches long, with an erectile crest, is one of the most abundant birds of western Europe. At the time of their autumn migration southward larks are taken in great numbers for the markets. The **Horned Lark** (*Otocoris alpestris*), closely related to the skylark, is found, in about 7 well-marked varieties, in various parts of North America. It is about the same size as the European lark, and each side of the head bears a narrow horn-like tuft of black feathers.

Leech. Leeches are blood-sucking parasitic worms, and most of them live in fresh water. They have tough, leathery, elongate, flattened bodies, with a sucker at each end. The mouth is provided with three saw-like jaws, by means of which the leech makes a wound like a three-pointed star, from which it sucks the blood. Leeches can be kept several years in a jar of pure water, without food. They were much employed by physicians in the past to bleed patients as a remedy for certain diseases, but now the employment of the leech is uncommon. The use of leeches as remedial agents dates back to the times of the Romans. The **Medicinal Leech** (*Hirudo medicinalis*), a native of middle Europe, is over 6 inches in length when fully extended.

Lemur. The lemurs form the lowest suborder of primates, and are old-world monkeys. Thirty-six species are found in Madagascar; about 14 others are distributed from Africa eastward as far as the Philippine Islands. The typical lemurs (*Lemur*) are omnivorous, gregarious, active, noisy, diurnal animals, about as large as a cat, with fox-like face, thick fur, and long bushy tail. The **Ring-tailed Lemur** (*L. catta*), from Madagascar, is one of the most striking species. Its body is gray, but the long tail has alter-

nate rings of black and white. The **Ruffed Lemur** (*L. varius*), also from Madagascar, is the largest species.

LEMUR.

Leopard (*Felis pardus*). A large cat-like carnivore found in southern Asia and in Africa. It is of a tawny ground color, nearly pure white beneath, and spotted with a few solid spots and numerous rosettes of black. In southern Asia a black variety is occasionally found, and the leopards of northern China have longer fur than those of more tropical regions. The leopard attains a length of more than 7 feet, tail included; is very ferocious and climbs like a cat, which it also resembles in the stealthy capture of prey. It captures and devours many small animals, especially dogs, and sometimes attacks man.

Lion (*Felis leo*). The lion is readily distinguished from all related cat-like animals (*Felidae*) by the adult male having a mane. Lions are found in Africa and in parts of southern and western Asia. They all belong to one species, although variable in the amount of mane, and in color, which ranges from yellowish brown to chestnut brown or to deep red, and sometimes to almost silver gray. A male lion measures about 10 feet in length, including 3 feet of tail; the female is about a foot shorter. Lions cannot climb; they live in sandy and rocky places, often in thickets of undergrowth near streams and springs, where they lie in wait for their prey. Their greatest activity is at night, although they are often seen during the day. Opinions differ widely as to the courage of the lion, as well as to the loudness of its roar; there has been much exaggeration in regard to both subjects, but a hungry or provoked lion, especially at night, is a very dangerous and aggressive animal. The lion often overcomes animals larger than himself by means of his stealthy cat-like habit of springing upon them unawares. He preys upon buffaloes, zebras, and even young elephants. Lions, although monogamous, sometimes go in troops, being sociable rather than gregarious. The male aids in care and feeding of the young, which number from two to four, usually three, at a birth. The pupil of the lion's eye is circular when contracted, not a narrow slit as in the cat. The papillae of its tongue are so large that it can rapidly rasp the flesh from bones by licking them.

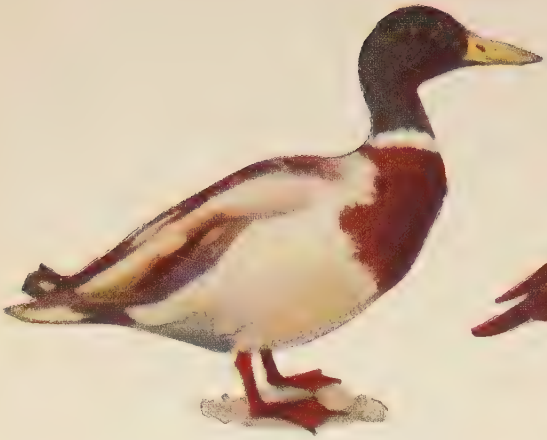
Lobster. The three species of *Homarus*, marine ten-footed crustaceans, are called lobsters,—one is European, one North American, and one South African. The forward pair of legs is enormously enlarged, one bearing immense blunt pincers for holding food, and the other sharp-toothed pincers for tearing. They are fond of decaying animal matter, and are caught in lobster pots, made of lath and netting baited with fish offal, and lowered to the bottom by a cord attached to a float to mark the location. The **American Lobster** (*H. americanus*), found from Labrador to New Jersey, has been caught so much that notwithstanding stringent laws regulating time of catching and size of lobsters caught, they average smaller from year to year, and it seems almost incredible that lobsters were formerly taken weighing nearly 40 pounds.

Locust. The grasshoppers with long horns (antennæ), of which the katydid is an example, are scientifically *Locustidae;* but the grasshoppers with short antennae, known scientifically as *Acrididae*, are the locusts mentioned in the Bible, and in the numerous works on destructive locusts. The seventeen-year cicada is also often wrongly called a locust. True locusts (*Acrididae*) form the largest family of orthopterous insects. These herbivorous insects mainly rest upon the ground, and their stridulation is usually due to rubbing the hind thighs against the outer edges of the wing-covers. The **Rocky Mountain Locust** (*Caloptenus spretus*), 1¼ inches long, ravaged the United States between the Rocky Mountains and the Mississippi River particularly during the early history of that region, and the U. S. Entomological Commission was organized, in 1877, to study these insects. These muscular, gregarious locusts, strong in flight, migrate in clouds and destroy every green leaf before them. The very similar **Red-legged Locust** (*Caloptenus femur-rubrum*) is distributed throughout the eastern United States. Tropical locusts are often very large, some having a wing spread of nine inches.

Loon. A name correctly applied only to divers of the genus *Urinator*, all of the northern hemisphere. They walk with difficulty, but swim very rapidly; are black or slaty above, speckled with white in summer, and white beneath; have a hind toe, webbed feet, and very short tail feathers, and usually lay two brown spotted eggs in a roughly formed nest near the water. The **Common Loon** or **Great Northern Diver** (*Urinator imber*), 36 inches long, breeds from latitude 42 degrees northward, going south as far as the Gulf of Mexico in winter. It is such a quick diver that it sometimes escapes the shot by diving beneath the surface of the water at the flash of a gun.

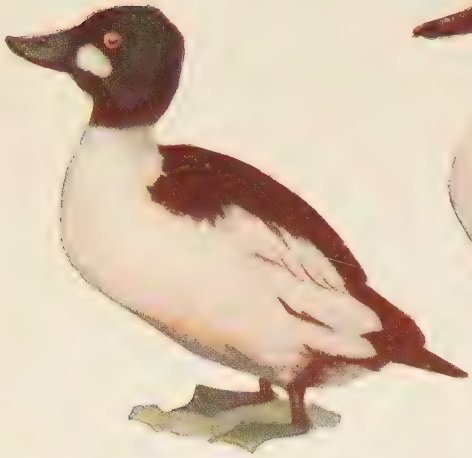
CANADA LYNX.

Lynx. The popular and scientific name of cat-like animals, rather larger than the domestic cat, having a short tail and tufted ears. Lynxes are more or less mottled brownish or gray, lighter beneath the body. They are all savage in disposition and prey upon smaller animals, doing much damage to sheep, lambs, and poultry. They climb trees readily and frequent rocky places in forests. The **European Lynx** (*Lynx lynx*), found in central and northern Europe and in northern Asia, is over two feet in body length and has sharp-pointed ears and a longer tail than most lynxes. The **Canada Lynx** (*Lynx canadensis*), once distributed in forests from Maine to Alaska, but now rare in eastern Canada and the United States, is over a yard long, including the tail. The somewhat smaller **Bay Lynx** or **Wildcat** (*Lynx rufus*) is found from northern Georgia to Maine, and is not rare in many thinly settled districts.



MALLARD DUCK
(ANAS BOSCHAS)

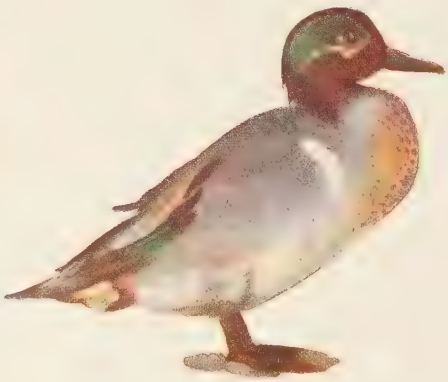
CANVAS-BACK DUCK
(AYTHYA VALLISNERIA)



AMERICAN GOLDEN EYE
(GLAUCIONETTA CLANGULA AMERICANA)

PINTAIL DUCK
(DAFILA ACUTA)

WOOD DUCK
(AIX SPONSA)



GREEN-WINGED TEAL
(ANAS CAROLINENSIS)

AMERICAN WILD DUCKS

Lyre Bird. Two of the three species of the genus *Menura*, of the family *Menuridae*, Australian passerine birds, are known, from the lyre-like form of their tails, as lyre birds. The bodies of these birds are about the size of that of a small hen, but the long tail gives them a total length of nearly a yard. The tail has two outer feathers that are very heavily webbed, and curved in the form of the horns of a lyre. The rest of the tail feathers, representing the strings of the lyre, are very abnormal, and are thinly furnished with hair-like barbs.

Mackerel. A name applied especially to certain teleost (*acanthopterygid*) fishes of the family *Scombridae*. The common mackerel (*Scomber scombrus*), an important food fish of both sides of the north Atlantic, rarely attaining a length of 18 inches, makes extensive migrations along the coast, at or near the surface, in immense schools that sometimes contain thousands of barrels of fish. Some years mackerel are abundant, other years rare. The greater part of their food consists of small crustacea, but they eat spawn of lobsters and of fishes, young fishes, even of their own species, and the middle of large jellyfishes. They are taken with young fish for bait, but will bite at almost any shining object. Besides the common mackerel the better known North American kinds are: the chub-mackerel, big-eyed mackerel, bull mackerel or thimble-eye (*Scomber colias*) of the Atlantic coast; the frigate mackerel (*Auxis thazard*) of warm seas which rarely appears off the New England coast; the horse mackerel, or tunny (*Thunnus thynnus*), of the northern hemisphere.

Magpie. A collective name for all birds of the genus *Pica*. They are related to the crows, which they resemble in their omnivorous habits, audacity, and cunning. The **European Magpie**, or **Pie** (*Pica pica*), of which the somewhat larger magpie of western North America, formerly supposed to be a separate species (*Pica hudsonica*), but now regarded as a variety, is a bird of about 20 inches total length, of which over one half is of the long tail. Its color is lustrous black, with belly, shoulders, and edges of the wings white. Once common in Great Britain, its thievish habits have led to its being nearly exterminated. The **Yellow-billed Magpie** (*Pica nuttalli*) of central California resembles the common magpie except that the bill and bare skin around the eyes are yellow.

Mallard. The mallard (*Anas boschas*), the wild form from which domestic ducks were derived, is found throughout the northern hemisphere, reaching in winter as far south as the Isthmus of Panama, Egypt, and India, but in summer ranging the Arctic regions, or oftentimes, in America, breeding in the valleys of the Rocky Mountains. The mallard duck is 20 to 25 inches long; the male with brilliant metallic green neck, rich chestnut chest, a collar of pure white and a rhomboidal violet spot on each wing; the female has the wing-spot like the male, but is otherwise with yellowish or buff variations. The mother duck lines her rather rude nest with down from her breast, and her clutch is of from 9 to 11 eggs, which hatch in 28 days, the young being cared for by the mother until full grown and feathered. The word mallard is still sometimes used in its original sense for the male or drake; duck for the female.

Manati, or Sea-cow (*Manatus*). An aquatic, gregarious mammal, of the order Sirenia, nearly related to the dugong, and found in fresh water and along the Atlantic coasts of Africa (1 species) and of tropical America (2 or 3 species). It is shaped somewhat like a whale, has paddle-formed fore limbs, no hind limbs, a horizontally flattened tail, very small eyes, and reaches a length of eight feet. Beneath its wrinkled, black skin is a layer of blubber, which contains no free oil, as does that of the whale. It has a large number of molar or grinding teeth, which are replaced from before backwards during life, being worn away by its food, which consists of water plants mixed with sand. The two lobe-like halves of its upper lip, beset with stout bristles, move independently and aided by the fore limbs, draw the food into its mouth.

Mandrill (*Cynocephalus mormon*). The mandrill is one of the West African baboons, the lowest family of the catarrhine anthropoid apes. The bridge of its nose is red, and it has blue ridges on the muzzle. Mandrills are omnivorous, gregarious, ferocious apes, with large face, prominent brow-ridges, and very short tail. The naked ischial callosities of the rump of adult males are bright red, more intense when the animal is excited, and the mandrill, which is often seen in zoölogical gardens, is repulsive in looks and habits.

Marmoset. Marmosets are platyrrhine monkeys of the family *Hapalidae*, which is made up of the genera *Hapale* (7 species) and *Midas* (14 species), all from tropical America. They are the smallest of monkeys, about as large as squirrels, soft-furred and usually have a mane. The long tail is hairy, ringed, and not prehensile, although their habits are arboreal.

Marten. Martens are carnivorous mammals of the genus *Mustela*, nearly related to the weasels. The **American Marten** or **Sable** (*Mustela americana*), an important fur-bearing animal, was once abundant in the Atlantic states from Maine to Virginia, but has become rare except in the wilder parts of British America. It is about 18 inches long, exclusive of its bushy tail, and is trapped in simply constructed deadfalls baited with any kind of meat, a piece of fish, or a bird's head. The **Siberian Sable** (*Mustela zibellina*), with black fur, and the British **Pine Marten** (*Mustela martes*), dark brown with a brownish-yellow throat, are the European representatives.

Martin. A name applied to swallows (*Hirundinidae*), but especially with a modifying prefix, to certain well-known kinds. All are valuable insectivorous birds, with long wings and of rapid flight. The **Purple Martin** (*Progne subis*) often nests, several pairs together, in the same box provided for it; the **Sand Martin**, or bank swallow (*Riparia riparia*), a smaller sort found in North America, Europe, and Asia, digs deep holes in sand banks in which to build its nest; the **European House Martin** (*Chelidon urbica*) attaches its nests to the eaves of houses. Shakespeare wrote (Macbeth, act 1, sc. 6) of the last species:—

> "No jutty, frieze,
> Buttress, nor coign of vantage, but this bird
> Hath made his pendent bed and procreant cradle."

Meadow Lark. Meadow Larks are American birds of the genus *Sturnella*, belonging to the troupials (*Icteridae*), near relatives of orioles, red-winged blackbirds, and bobolinks, the name lark being here a misnomer. The **Common Meadow Lark** (*Sturnella magna*) of eastern North America is about 10 inches long, including about 3½ inches length of tail, is brownish streaked with black above and chiefly yellow below, but with a black irregular crescent on the breast. The **Western Meadow Lark** (*Sturnella neglecta*), from Illinois westward to the Pacific, is similar to its eastern congener, but has a much sweeter song.

Milk Snake. The milk snake, or house snake, of the northern United States is a color variety of the Southern States corn snake, or red snake (*Ophibolus doliatus*), a very variable non-poisonous species, 3 feet long, marked with brown blotches bordered with black. The milk snake, generally known in New England as spotted adder, has an arrow-shaped brown spot on the top of the head; the head of the corn snake is red.

Mink (*Putorius vison*) A black or dark brown amphibious mammal, 15 to 18 inches long exclusive of its bushy tail, and related to the weasels. Its food is mainly frogs and mollusks, but it will eat flesh of birds and quadrupeds. It nests in burrows in banks of streams, producing five or six young each April. Minks are caught in deadfalls and steel traps, fresh fish being used as bait. They have been bred in captivity for their valuable fur, which consists of a dense, soft under-fur mixed with long, lustrous hairs.

Minnow. A term loosely applied in the United States to almost any small fresh-water fish, and sometimes to those found in salt water. The genus Notropis, of the so-called minnow family *Cyprinidae*, numbers upwards of 100 species, all confined to North America east of the Rocky Mountains, which have been termed American minnows or shiners. They are of no importance as food fishes for man, but are useful as food for the larger predatory fishes, and as bait in fishing.

Mite (*Acarina*). Mites are near relatives of the spiders, but have the thorax and abdomen fused together to form a more or less rounded body, and are usually small. Some mites are scavengers, others infest plants, and many are parasites of other animals. The **Ticks** (*Ixodidae*), parasitic on larger animals, are conveyors of disease. The **Cattle Ticks** (*Margaropus*) in warmer regions infect cattle with a protozoan blood-parasite, causing Texas fever. The **Itch Mite** (*Sarcoptes scabiei*), a microscopic species that burrows in the human skin, giving rise to the itch. The **Red Spider** (*Tetranychus telarius*), a minute species that spins webs, attacks indoor cultivated plants. **Chicken Mites** (*Dermanyssus gallinae*) often swarm under the perches of ill-kept henhouses, and attack the poultry at night. **Harvest Mites** (*Leptus irritans*) known as jiggers or chigoes in the southern and western United States, burrow in the human skin, causing severe itching. The minute, white **Sugar Mite** (*Tyroglyphus sacchari*) infests raw or unrefined sugar in immense numbers, sometimes estimated to exceed 100,000 to a pound of sugar, and causes grocer's itch.

Moccasin Snake (*Ancistrodon piscivorus*). A dangerous venomous snake of the south Atlantic and Gulf states and the lower Mississippi valley, closely related to the copperhead, also known as the **Water Moccasin** from its aquatic habits, and as the **Cotton-mouth** from the whiteness of its mouth. It is about 4 feet long; dark chestnut brown, with the head purplish black.

Mole. General name for the small insectivorous mammals of the family *Talpidae*, of which there are seven genera and numerous species, all found in the northern hemisphere. They have short fore limbs and burrow in the ground; their fur is dense and velvety; they have no external ear, and their eyes are rudimentary. The **Common Mole** of the northern United States (*Scalops aquaticus*) is dark lead-colored above, paler beneath; about 4 inches long, exclusive of the tail, which is shorter than the head; burrows galleries just beneath the ground, often to the injury of lawns, in its search for insects and earthworms. The **Star-Nosed Mole** (*Condylura cristata*) of the northern United States is blackish, with slender head, the nose tipped with a circle of fleshy projections, and the tail longer than the head.

Monkey. A general name given to many long-tailed anthropoid primates; certain monkeys with long bushy tails are called marmosets, and others with dog-like faces are termed baboons. Large monkeys are often spoken of as apes, though this name is best restricted to the short-tailed man-like kinds. The apes and monkeys together number about 212 species. They are divided into two great groups: the catarrhines and platyrrhines. The catarrhine monkeys are confined to the old world; their nostrils are close together and point downward, and they have 32 teeth. Those catarrhines that have long tails do not use them as prehensile organs. The platyrrhine monkeys are found only in the new world; their nostrils are wide apart and directed outwards, and, with the exception of the marmosets, they have 36 teeth. The tail is generally long; often prehensile.

Moose or Elk (*Alces machlis*). This largest of deer, clumsy, heavy, short-necked, with long head and broad ears, small eyes, big upper lip hanging over the lower one, and far from a deer-like aspect, is the largest game animal of North America and Europe. It reaches a height of eight feet at the withers, and is clothed with long, coarse, brownish hair. Its nearest relative is the reindeer, but, unlike the latter, the male moose has palmate horns, which, in old males, have 14 snags each, weigh as much as 60 pounds, and are formidable weapons. The hoofs are also used as weapons. The moose, or true elk, which should not be confounded with the "American elk" (*Cervus canadensis*), an entirely different animal and preferably called wapiti, has a circumpolar distribution, usually living in forests. Its American range is from Maine to Oregon and northward. (See DEER.)

Mosquito (*Culicidae*). Mosquitoes are small, blood-sucking diptera, occurring in nearly all parts of the world. Most species are crepuscular or nocturnal, a few diurnal; many kinds attack birds and reptiles as well as mammals, yet probably the normal food of adult mosquitoes is vegetable. The eggs of certain kinds are deposited in boat-shaped masses that float on the water, but other kinds lay their eggs singly. The larvae live in fresh or brackish water, some preferring foul, others clear water. They breathe air, coming often to the surface of the water to take it in through a tube at the posterior end of the body. The proboscis, or biting organ, of the female is a penetrating lance made up of six sharp filaments. The male mosquito does not bite. Malarial fever is caused by a blood-parasite introduced into the human system by the bite of species of **Malarial Mosquito** (*Anopheles*). Yellow fever is transmitted by the **Yellow-fever Mosquito** (*Stegomyia fasciata*), which inhabits the warmer portions of the globe, and is common in southern parts of the United States, as far north as Virginia and Arkansas. Elephantiasis, a tropical disease, is also conveyed by the bite of mosquitoes (*Culex*). Remedies against the multiplication of mosquitoes consist in draining their breeding pools; in treatment of these pools with kerosene, and in the introduction of small fishes, their natural enemies.

American Elk, or Wapiti. Cervus canadensis.

Moth. Moths and butterflies together constitute the order *Lepidoptera*, or scale-winged insects, the butterflies being diurnal in habits and having knob-tipped antennae; the moths crepuscular or nocturnal in habits, and with antennae of various forms. The North American moths number about 6,600 species. Moths mostly pass the pupal state in cocoons, often of silk, or pupate beneath the ground. The larvae are commonly injurious to vegetation. **Hawk Moths** or **Humming-bird Moths** (*Sphingidae*) are heavy bodied moths with rather narrow wings, the caterpillars of which generally have a spine above the posterior end of the body; the so-called **Tomato Worms** and **Tobacco Worms** are larvae of large kinds of hawk moths (*Phlegethontius*). The **Bombycine Moths** (*Bombycina*) include some of the largest moths, and a great number of small species, among them the **Silkworm Moth** (*Bombyx mori*); the **Gypsy Moth** (*Porthetria dispar*) and the **Brown-tail Moth** (*Euroctis chrysorrhoea*), both bombycine moths introduced into New England from Europe, are very destructive to fruit and forest trees. To the **Owlet Moths** (*Noctuidae*) belong some of the most injurious garden insects, their larvae including the various species of cutworms. The **Measure-worm Moths** (*Geometridae*) are so termed because their caterpillars progress by a kind of looping and seem to be measuring the surface beneath them. The smallest moths (*Tineina*) include those species of Tinea which attack clothing, carpets, furs, and food.

Mouflon. Closely related to the domestic sheep (*Ovis aries*), the origin of which is unknown, are about 12 kinds of wild sheep, of which three species are called mouflons. Mouflons are gregarious ruminants, in general appearance and in the form of their horns recalling sheep, but they are hair-clad rather than woolly. The **Common Mouflon** (*Ovis musimon*) inhabits Corsica and Sardinia, and is thought to have been formerly found in Spain. The **Cyprus Mouflon** (*Ovis ophion*) is found in small

numbers on the island of Cyprus, and the other species occurs in the mountains of central Asia.

MOUFLON. Ovis musimon.

Mouse. The smaller species of the rodent mammalian family *Muridae* are known as mice, the larger species as rats. Mice are omnivorous, sometimes cannibals, and are nocturnal in habits. The name was originally applied to the house mouse (*Mus musculus*), a native of Asia, which has become established in all parts of the world, and needs no description. Though commonest in buildings and cultivated fields it sometimes occurs in woods. White (*albino*), piebald, and abnormally colored varieties of the common mouse have been bred, and have at times commanded fanciful prices.

Mullet. A name applied to several kinds of teleost (*percesocine*) fishes of the family *Mugilidae*. The **Common Mullet** (*Mugil capito*), a nearly cylindrical food fish about a foot long, is taken in fresh and salt water from Scandinavia to the Cape of Good Hope. It feeds on organic matter found in mud. In the United States the name mullet is rather loosely applied to a number of catastomid and cyprinid fishes (*teleosts*), but more especially to *Mugil cephalus*, not only found in Europe, but along the Atlantic coast of America from Cape Cod to Brazil and on the Pacific coast from Monterey to Chile. It is from one to two feet long, dark bluish above and pale yellowish below, with silvery sides and dark stripes along each row of scales. **Red Mullets** are small marine and brackish water food fishes of tropical regions, extending, however, to northern Europe. There are about 50 species; they belong to the teleost (*acanthopterygid*) family *Mullidae*, and feed on minute animals and decomposing matter.

Musk Ox (*Ovibos moschatus*). This gregarious ruminant mammal has habits and structure somewhat like the sheep, but is of the size of small cattle; it forms a subfamily (*Ovibovinae*) of its own. It is called also musk-sheep and musk-buffalo. It once ranged through northern Europe as far south as the plains of Germany and France, and in North America to Virginia, but is now confined to the North American continent north of 60 degrees latitude.

Muskrat or Musquash (*Fiber zibethicus*). A rodent belonging to the *Muridae*, is found from the northern barrens of British America to the boundaries of Mexico, and from the Atlantic to the Pacific. Its length, exclusive of its laterally flattened, nearly naked, scaly tail, is about a foot; it is dark brown, almost black above, and gray beneath. Both sexes have large inguinal glands of which the secretion has a musky odor, whence the name muskrat.

Mussel. Salt water mussels are bivalve mollusks of the family *Mytilidae*. The **Edible Mussel** (*Mytilus edulis*) 2 to 3 inches long, a native of the temperate shores of Europe, is an immigrant in North America north of Cape Hatteras and on the Pacific coast. Its shell is black on the outside, bluish on the inside. **Fresh-water Mussels,** also called clams, are bivalve mollusks of the famiy *Unionidae*. The thicker kinds of their pearly shells are used to make buttons, and pearls of considerable value are found in river clams.

Nautilus. Cephalopod mollusks with a flat, spirally coiled, many-chambered shell, immensely abundant in earlier geologic periods,—over 2,000 fossil species of the family being known; now represented by about six living forms, natives of eastern oceans, commonly called **Pearly Nautilus,** from the inner lining of the shell.

Night Hawk (*Chordeiles virginianus*). A bird of the goatsucker family (*Caprimulgidae*), related to the whip-poor-will, occurring throughout North America; about 9 inches long, mottled black, gray and buffy with a white spot on the throat; flying in flocks at evening, catching insects with widely open mouth. It builds no nest, laying two eggs on the ground or in stumps.

Nightingale (*Daulias luscinia*). A small Old World warbler, about 7 inches long, famous since ancient times for its exquisite song. It is a shy, inconspicuous, woodland bird, wintering in Africa, visiting Europe and western Asia in summer.

Noddy (*Anous stolidus*). A sea bird related to the tern, common on tropical coasts, so named because it exhibits so little fear of man as to appear stupid.

Ocelot (*Felis pardalis*). An American mammal of the cat family found from Texas to Paraguay, also called **Tiger Cat,** and sometimes leopard. It is a woodland animal, 3 feet long, hunting small animals and birds at night. Other species called ocelots occur in South America.

Octopus, Devil Fish. A cephalopod mollusk with a nearly spherical, sac-shaped body, two conspicuous eyes, and a large mouth surrounded by 8 long arms provided with suckers, with which it seizes fish and other sea animals upon which it feeds. There are nearly 100 species, found in all oceans—some Pacific coast species having an arm spread of 15 feet.

Okapi (*Ocapia johnstoni*). An African ruminant mammal very closely related to the giraffe, but with much shorter neck and fore legs, discovered in the Congo Free State in 1900 by Sir Harry Johnston. It resembles a large deer in size and form and is strikingly colored, the forehead being bright red, the cheeks yellowish white, the body reddish with the haunches and upper portions of the legs marked with zebra-like whitish stripes, and the lower parts of the legs white.

YOUNG MUSK OX.

Opossum (*Didelphis virginiana*). A North American marsupial mammal, occurring from New York to California and southward, about the size of a cat, with a long, scaly, prehensile tail, and

a pointed nose; dwelling in trees, hunting at night; living upon insects, small animals, and birds. The opossum is remarkable for its habit of feigning death when caught, and with one exception is the only genus of pouched mammals outside of the Australian region—the young being carried by their mother in a pouch for 2 months after birth. Some 20 more species of opossums occur in South America.

Orang-Utan (*Simia satyrus*). A large man-like ape, 4½ feet high when erect, native of Borneo and Sumatra, ranking below the chimpanzee and gorilla, living in trees, and subsisting upon fruits, nuts, and tender plants. It is a prime favorite in menageries, displaying remarkable powers of imitation and almost human actions such as dressing in clothes, sitting at table, and eating food with fork and spoon.

Oriole (*Icterus*). Some 40 species of beautiful singing birds of the New World, related to the blackbirds, building suspended, pouch-like nests of closely woven fibers. The **Baltimore Oriole** (*I. galbula*), so named because its colors corresponded with the orange and black of Lord Baltimore's livery, is common in the eastern United States. The **Orchard Oriole** (*I. spurius*), a fine songster, but slightly smaller and less conspicuously colored, has a similar range.

Otter. A fish-eating mammal of the weasel family, living along lakes and streams, highly prized for its fur. The **North American Otter** (*Lutra canadensis*) about 3 feet long, tail 18 inches, is most abundant in British America. The **Sea Otter** (*Latax lutris*), a most valuable fur animal, more stoutly built, with a woolly undercoat, formerly abundant, is now nearly extinct in Alaska.

Ounce (*Felis uncia*). A large, thick-furred cat, adapted to life in the cold mountain regions of Asia, about equal to the leopard in size, living upon smaller animals, never attacking man.

Owl (*Bubonidae, Strigidae*). A well-marked group of nocturnal birds of prey, containing about 200 species, found nearly throughout the world, usually solitary, preying chiefly upon mice, moles, and other small injurious animals, and hence generally beneficial to man. The **Great Horned Owl** (*Bubo virginianus*), the largest and boldest common species, 22 inches long, is abundant throughout the continent. The slightly larger **Snowy Owl** (*Nyctea nyctea*), 25 inches long, breeding from Labrador northward, visits the northern United States in winter. The **Long-eared Owl** (*Asio wilsonianus*), 15 inches long, common from Manitoba southward and eastward, nesting in holes in trees or in old crows' nests, is very destructive to mice. The **Short-eared Owl** (*Asio accipitrinus*), 15 inches long, almost cosmopolitan, lives and nests in marshes. The **Barred** or **Hoot Owl** (*Syrnium nebulosum*), common from Manitoba southward and eastward, is familiar by reason of its hooting call. The solemn visaged **Barn Owl** (*Strix pratincola*), 17 inches long, ranges from New York southeastward to Mexico. The **Screech Owl** (*Megascops asio*), only 10 inches long, is known everywhere from Minnesota eastward and southward on account of its weird cry. The **Burrowing Owl** (*Speotyta cunicularia*), 10 inches long, of Rocky Mountain plains, lives in the burrows of prairie dogs and squirrels, but the story that these owls, prairie dogs, and rattlesnakes live together is a myth.

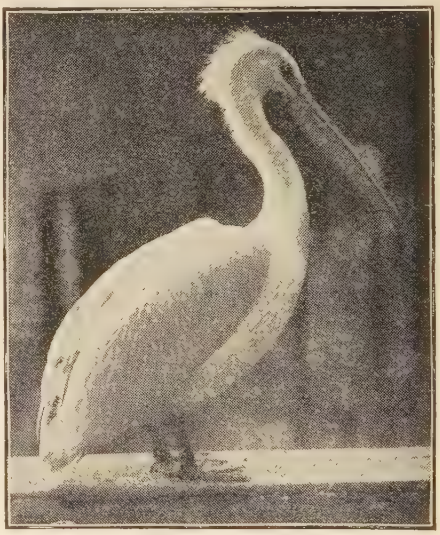
Oyster (*Ostrea*). A marine bivalve mollusk, growing near shore, in 12 to 35 feet of water in nearly all oceans,—there being upwards of 50 species, the most common of which are *O. virginiana* of the east coast of the United States, and *O. edulis* of Europe, both of which are extensively cultivated in specially prepared beds for the markets. Oyster culture was probably first practised by the Romans.

Parrot (*Psittacidae*). A family of 350 species of birds, chiefly tropical, none occurring in Europe, China, or the Philippines, of striking form and plumage, some of which possess remarkable powers of imitating the human voice. Only one species, the **Carolina Parrot** or **Parakeet** (*Conurus carolinensis*), occurs in the United States and is now confined to southern Florida.

Partridge. A name popularly given to many hen-like game birds (*Tetraonidae*). The true partridge (*Perdix cinerea*) is the common game bird of Great Britain. In New England the ruffed grouse (*Bonasa umbellus*) is called partridge, while farther south the bob white or quail (*Colinus*) receives the name, and the ruffed grouse is called pheasant. There are several species of true partridges and quails in the southeastern United States and Mexico. (See GROUSE, QUAIL.)

Peccary (*Dicotyles*). A small forest-dwelling, hoofed mammal, allied to the swine, but with more slender legs, no visible tail, and only three toes on the hind feet. The **Collared Peccary** (*D. torquatus*), 14 inches high, 38 inches long, living in pairs or small parties, ranges from Arkansas and Texas to Patagonia. The larger **White-lipped Peccary** (*D. labiatus*) occurs in vast herds from Central America to Paraguay.

Pelican (*Pelecanus*). A large fish-eating bird with an immense bill provided with a pouch used as a scoop net for catching fish. The **White Pelican** (*P. onocrotalus*), abundant in the Mediterranean region, 5 to 6 feet long, wing spread 9 to 10 feet, was well known to the ancients. The **American White**



PELICAN.

Pelican (*P. erithrorhyncus*) of the Western and Southern states is very similar. The smaller, more active **Brown Pelican** (*P. fuscus*) is common on warm coasts of North and South America.

Perch (*Percidae*). A large family of northern fresh water fishes. The **Yellow Perch** (*Perca flavescens*), 10 to 15 inches long, of the Eastern States, is an excellent pan fish. The **Pike Perch** or **Wall-eyed Pike** (*Stizostedion vitreum*) of Lake Champlain to Lake Michigan and northward, a valuable food fish, 1 to 3 feet long, is distributed in millions by the U. S. Fish Commission.

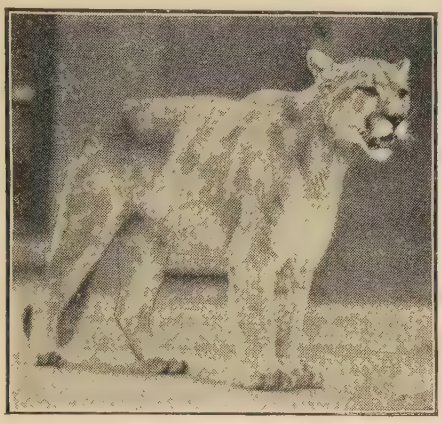
Petrel. A wandering, tube-nosed, oceanic bird, most abundant in southern seas, some apparently visiting land only at nesting season. The **Stormy Petrel** or **Mother Carey's Chicken** (*Procellaria pelagica*), about 6 inches long, the smallest of web-footed birds, breeds on Norwegian and British coasts.

Pheasant (*Phasianus colchicus*). A game bird, related to the peacock and turkey, native of Asia, now naturalized in Europe, particularly in England, where it is reared in great numbers. The **Golden Pheasant** (*Thaumalea picta*) and the **Silver Pheasant** (*Euplocomus nycthemerus*), both brilliant Chinese species, are reared in aviaries. The **Argus Pheasant** (*Argusianus giganteus*) is a beautiful south Asian species.

Pike (*Esox*). A slender, long-snouted, very voracious, fresh-water, game, and food fish. The **Common Pike** (*E. lucius*), ranging from New

York westward and northward, is 2½ to 4 feet long and sometimes weighs 40 pounds. The splendid **Muskallunge** (*E. masquinongy*), largest of all, attains 6 feet ni length and 75 pounds weight. The well-known, gamy **Eastern Pickerel** (*E. reticulatus*), 30 inches long, is common in ponds east of the Alleghanies from Maine to Alabama.

Pintail (*Dafila acuta*). A duck common to northern Europe and America, breeding from Iowa and Illinois to the Arctic Ocean. So named from the long and sharp central feathers of the tail. (See plate of DUCKS.)



PUMA.

Plover. A group of about 75 species of wading birds, widely distributed over the world. The **Golden Plover** (*Charadrius dominicus*), 10 inches long, found throughout North America, also in South America, Europe, and Asia, is a well-known game bird.

Porcupine. True Old World porcupines are burrowing rodents; those found in America live in trees or in clefts of rocks. The **Canada Porcupine** (*Erethizon dorsatus*) of eastern North America, 3 feet long, is effectively protected by an array of barbed spines, loosely attached to its skin.

Porpoise (*Phocaena communis*). An aquatic mammal related to the whale, 4 to 6 feet long, abundant in northern oceans, going in schools, feeding upon fish, once used for food but now taken mostly for oil and leather.

Portuguese Man-of-War (*Physalia arethusa*). A colonial jellyfish whose beautifully colored sac-like float, about 6 inches long and filled with air, is surmounted by a sort of comb, while underneath are long streamers of many shapes, often 20 feet in length, some of which are armed with batteries of stinging cells of such power as to overcome large fish, which are devoured for food. The various grape-like or thread-like appendages are members of the colony. While common in the tropical waters some drift northward with the Gulf Stream and are seen off the New England coast.

Potato Beetle (*Leptinotarsa decemlineata*). A leaf beetle with a round yellow body with black stripes, very destructive to potato plants; native of Colorado, but migrating eastward in 1859, reaching the Atlantic coast in 1874; now common throughout the eastern United States and also introduced in other countries.

Prairie Dog (*Cynomys ludovicianus*). A small, burrowing rodent about a foot long, related to the gophers, living in large colonies called dog towns or villages, in the high plains in Wyoming and east of the Rocky Mountains. They are very timid, never venturing far from their burrows, and live upon grass and roots.

Ptarmigan (*Lagopus*). An arctic bird of the grouse family, brown and white in summer, turning pure white in winter, usually with feathered legs and feet. The **White** or **Willow Ptarmigan** (*L. lagopus*) visits the northern United States in winter.

Puma (*Felis concolor*). Called also cougar, panther, catamount, and mountain lion. A large cat, 7 feet long, weighing 200 pounds, tawny or reddish above, grading to nearly white below, ranging from British America to Patagonia, now rare east of the Mississippi, still abundant in the Rocky Mountains; very destructive to cattle, colts, and sheep, but rarely, if ever, attacking man.

Python. A huge, crushing, non-venomous Old World snake of the boa family, second only to the anaconda in size, dwelling in forests, living upon small mammals and birds. The **Regal Python** (*P. reticulatus*) of the East Indian region attains a length of 25 feet, and the **Rock Python** (*P. sebae*) of Africa exceeds 20 feet.

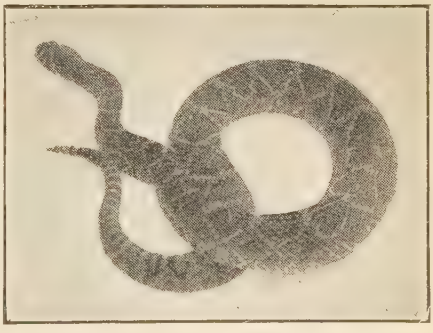
Quagga (*Equus quagga*). An African zebra-like mammal more nearly resembling the horse than the ass, formerly only of limited range, and now thought to be extinct.

Quail. The **American Quail** or **Bobwhite** (*Colinus virginianus*). A highly esteemed game bird, 9 inches long, occurs from the Great Plains eastward. It is usually called partridge in the Middle and Southern States. The true quail (*Coturnix*), slightly smaller, breeding abundantly in Europe and returning to Africa for the winter, is caught in immense numbers for the markets. (See PARTRIDGE.)

Quetzal (*Pharomacrus mocinno*). A Central American trogon, one of the most beautiful of birds, with the wings, chest, and throat metallic green, the under portions brilliant scarlet, and long white tail feathers with a black base, sometimes over 3 feet long, so much prized in millinery that the species is becoming rare.

Rabbit. A name applied in the United States to all the wild species of hares, but properly belonging to the European species (*Lepus cuniculus*). The European rabbit is smaller than the hare, with shorter limbs, and differs from it especially in the fact that the young are born blind. It is very prolific and the flesh is considered excellent food. Rabbits were introduced into Australia in 1850 and soon became so abundant as to be a plague. There are about 10 varieties of domesticated rabbits, among which is the Belgian hare.

Raccoon (*Procyon lotor*). A North American carnivorous mammal closely related to the bears. It is about 12 inches high and has long, yellowish gray fur with black rings around the tail. Raccoons are especially abundant in the southern United States, where they frequent wooded swamps and forests bordering streams.

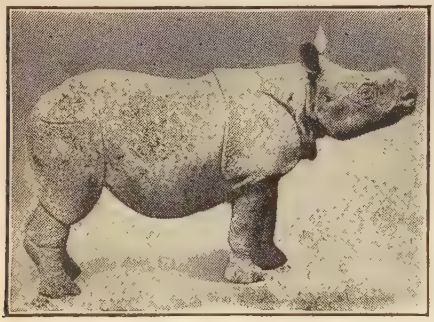


DIAMOND RATTLESNAKE.

Rattlesnake (*Crotalus horridus*). A venomous American snake once common from the Rocky Mountains eastward, but now largely exterminated, sometimes 4 feet in length, distinguished by the rattle composed usually of 6 to 9 horny rings, terminating the tail, with which it almost invariably gives

warning before it strikes. The **Diamond Rattlesnake** (*C. adamanteus*) of Florida is larger, sometimes being 8 feet in length, and more dangerous. The small **Prairie Rattlesnake** or **Massasauga** (*Sistrurus catenatus*), 30 inches long, of the interior plains, is now becoming rare. There are 11 true rattlesnakes and 2 massasaugas in North America.

Rhea. The generic and English name of a family of ostrich-like birds of South America. The head and neck of the rhea are fully feathered, the wings, which are longer than those of the ostrich, are covered with long slender plumes, and the feet are three-toed.



ASIAN RHINOCEROS. Young.

Rhinoceros. A large, thick-skinned, hoofed mammal of tropical Asia and Africa, with a horned snout, second only to the elephant in bulk, though perhaps equaled by the hippopotamus. The **Indian Rhinoceros** (*R. unicornis*), the largest of all, exceeding 10 feet in body length, and standing fully 5 feet at the shoulder, has but 1 horn. Its exceedingly thick skin is arranged in shield-like folds. Two smaller one-horned species are found in southern Asia and adjacent islands. The **African Rhinoceros** (*R. bicornis*) of central and southern Africa, is somewhat smaller than the Indian rhinoceros. It possesses two horns and the skin is free from folds.

Robin. The **American Robin** (*Merula migratoria*), of the thrush family, found everywhere from the Rocky Mountains and Alaska eastward, is one of the best known and most affectionately regarded of American birds. It is much larger than the **Old World Robin** (*Erythacus rubecola*), which is a warbler, but resembles it in color, song, and disposition.

ROCKY MOUNTAIN GOAT.

Rocky Mountain Goat (*Oreamnos montanus*). A North American goat-like antelope, ranging from middle California northward to Alaska, much resembling the common goat, but more sturdy, usually weighing about 100 pounds, living at high elevations near the upper limit of trees, and feeding upon mosses, lichens, and shrubs. It is seldom taken by sportsmen, and is rare in zoölogical gardens, though it endures captivity better than the mountain sheep or bighorn.

Salamander. A name given to tailed amphibians of the order *Urodela* and family *Salamandridae*. They have a robust body, well developed limbs, 4 and 5 toes, and no external gills in the adult form. Salamanders are most abundant in the northern hemisphere, especially North America.

Sandpiper. A name applied to a large number of shore birds of the family *Scolopacidae*, closely related to the snipes. They are mostly birds which breed in the Arctic region and go to southern climates to pass the winter.

Sardine. A small fish of the genus *Clupanodon*, allied to the herring. The **European Sardine** (*C. pilchardus*), which is very common in the Mediterranean and adjoining ocean, is commonly put up in oil and canned.

Scallop. A common bivalve mollusk of the genus *Pecten*, with a fan-shaped shell. The **Common Scallop** (*Pecten irradians*), found along the Atlantic coast, is about 2½ inches in diameter and has a horn-colored shell. The adductor muscle of this species is in great demand as a delicacy.

Scorpion. A small, mostly tropical, animal of the family *Scorpionidae*, usually 2 to 8 inches long, and somewhat resembling a small lobster in shape. Scorpions have 4 pairs of legs, a pair of pincers much like those of a lobster, and a jointed, flexible tail ending in a sharp venomous sting. Although very painful, the sting is rarely if ever fatal to man. About 30 species are North American, mostly small in size and confined to warm regions.

Sea Anemone. A marine coelenterate animal similar to the coral polyp, so named for its resemblance to a flower,—the brilliantly colored tentacles expanding like petals. They are practically stationary, but possess some slight power of motion over the rocks to which they cling. They catch their prey, shrimps or small fish, by paralyzing it with the peculiar lasso cells in the tentacles.

Sea Cucumber (*Holothuroidea*). A group of marine animals (*Echinoderms*), with a soft, worm-like body having a tough, leathery covering, often cylindrical in shape and warty like a cucumber. The mouth is surrounded by a circle of food-grasping tentacles. Locomotion is effected by alternate elongation and contraction of the body. About 600 species are known. The larger forms supply the Chinese with "trepang" or bêche-de-mer, considered a great delicacy.

Sea Horse (*Hippocampus*). A small fish of the family *Syngnathidae*, having a head and neck somewhat resembling that of a horse, and a finless, prehensile tail. The body is covered with a bony shell arranged in rings. The male has a pouch on the breast, in which it carries the eggs until they are hatched.

Seal. True or hair seals are fin-footed, aquatic mammals of the family *Phocidae*, numbering about 15 species, mostly of cold seas, of which five or six occur in North American waters; among them the common harbor seal, ring seal, hooded seal, and the harp or Greenland seal, highly valued for oil and leather. The "fur" seal is a sea lion.

Sea Lion. An aquatic, pinniped mammal (family *Otariidae*), closely related to the seals, numbering 9 species, mostly Antarctic, of which 3 occur in the North Pacific. The **California Sea Lion** (*Zalophus californianus*), 7 feet long, weighing 450 pounds, is often kept in captivity. **Steller's Sea Lion** (*Eumetopias stelleri*) of the North Pacific, largest of all, is 10 feet long and stands 6 feet high. The so-called **Fur Seal** (*Callotaria ursina*), yielding beautiful fur, is found on islands in Bering Sea.

Sea Turtles (*Chelonidae*). Four species occur in North American waters: the **Loggerhead Turtle**, weighing 300 pounds, of tropical seas; **Kemp's Loggerhead Turtle** of the Gulf of Mexco; the **Green Turtle** (*Chelonia myas*), highly esteemed for food, rarely weighing 600 pounds; and the much smaller **Hawk's-bill Turtle** (*C. imbricata*), which yields the "tortoise shell" of commerce.

Sea Urchin (*Echinoidea*). A marine echinoderm related to the starfish, with spherical, heart-shaped, or disc-shaped body, provided with movable spines. The body is inclosed in a case of 10 double rows of calcareous plates, the 5 alternate rows being perforated to allow the exit of the feet or tentacles. Besides these are hundreds of small tubular feet by which the animal moves along with a rocking motion and with which it secures its food, usually seaweed and dead fish. Over 300 species are known.

Secretary Bird (*Serpentarius secretarius*). A large South African bird having long legs, a long tail, and a crest of feathers protruding from the back of the head. It feeds upon reptiles of all kinds and is much prized on account of its habit of killing snakes.

Shrew. A small, insectivorous mammal of the family *Soricidae*, having much the general appearance of a mouse, with a long pointed muzzle and soft fur. Shrews are very widely distributed, being found in most parts of the northern hemisphere.

Shrike (*Laniidae*). A family of passerine birds with habits like birds of prey, numbering 200 species, mostly of the Old World; only two are American. The **Great Northern Shrike** or **Butcher Bird** (*Lanius borealis*) breeds far north, but migrates southward in winter to Kansas and Virginia. The **Loggerhead Shrike** (*Lanius ludovicianus*) common in the Eastern and Southern States breeds northward to the Great Lakes and eastward to Maine.

Shrimp (*Crangon vulgaris*). A small, slender crustacean with a long tail, abundant on the coasts of Europe, and much prized for food in England and France. In the United States the so-called shrimps of the markets are usually prawns.

Skink. A lizard of the family *Scincidae*, widely distributed throughout the world, especially in warm regions. There are about 60 genera and 200 species. They have short limbs and most of them are terrestrial and burrowing. Several species are found in the United States.

Skunk. A carnivorous fur-bearing mammal of the family *Mustelidae*, found only in America. Skunks have a slender body, a bushy tail, and long hair with black and white markings. They protect themselves by means of a very offensive fluid which is ejected from glands under the tail. The **Common Skunk** (*Mephitis*), of which there are about 9 species, is widely distributed throughout the United States and Mexico. The fur is very extensively used, the white portion being colored black.

Sloth (*Bradypodidae*). A sluggish, wholly arboreal, edentate mammal, occurring in Central and South American forests, particularly in the Amazon region. The **Three-toed Sloth** (*Bradypus tridactylis*), about 20 inches long, has 3 toes on each foot, and 9 cervical vertebrae, while the slightly larger **Two-toed Sloth** (*Choloepus didactylus*) has 2 toes on the fore feet and only 6 cervical vertebrae.

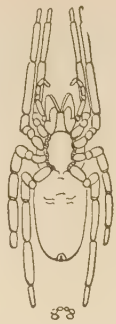
Smelt (*Osmerus*). A small, finely-flavored, much-prized food fish, related to the salmon. The **American Smelt** (*O. mordax*) of the Atlantic coast and many New England lakes, greenish above with silvery sides, and attaining a length of 10 inches, is marketed in great quantities. The **European Smelt** (*O. eperlanus*) is very similar.

Snails (*Helicidae*). A very numerous group of gastropod mollusks, provided with a protective spiral shell containing the whole animal, embracing several thousand species, varying from the northern limits of trees to Patagonia, and from tropical plains to mountain elevations of 10,000 feet. The Romans reared the **Vineyard Snail** (*Helix pomatia*) for food which, together with other edible species, is still largely eaten in Europe, particularly during Lent.

Snipe (*Gallinago*). The common name of several game birds related to the woodcock and sandpipers, living on oozy shores of streams and ponds, where they search the mud with their long, straight bills for worms and insects. **Wilson's Snipe** (*G. delicata*), breeding from New England to Labrador and westward to Illinois, is highly prized by sportsmen, not only for its excellent flesh, but also on account of the skill in marksmanship required to secure it.

Sole (*Solea vulgaris*). A European flat fish, 10 to 20 inches long, much esteemed for its delicate flavor, very abundant on sandy British shores, where it is taken in nets. The somewhat smaller **American Sole** (*Achirus fasciatus*) occurs from Massachusetts to Texas, while the larger and excellent **California Sole** (*Eopsetta jordani*) ranges from Monterey to Puget Sound.

Sparrow (*Passer*). The common name given to many small birds of the finch family, chiefly field or plain inhabiting, with brown or streaked, protectively colored plumage; seed-eating and much less migratory than insect-eating birds. Among the better known common species in the United States are the house, or English sparrow, the tree, field, chipping, and song sparrows.



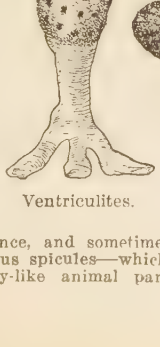
Six-eyed Spider.

Jumping Spider.

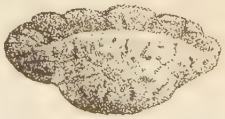
SPIDERS.

Spiders (*Araneida*). An order of *Arachnida*, distinguished by a round abdomen, provided with web-secreting spinnerets, 4 pairs of seven-jointed legs, biting mandibles connected with poison glands and usually 8 eyes. There are upwards of 30 families, embracing an immense number of species, ranging from minute forms to huge bird spiders 3 inches long with a leg spread of 10 inches. With reference to habit they may be considered in two classes: web-weaving spiders which entrap their prey in more or less elaborate webs, and wandering spiders, which capture by hunting. While their bite is poisonous only a few are dangerous—the dreaded tarantula being comparatively harmless, though the bite of the New Zealand **Katipo** (*Latrodectus*) sometimes causes death.

Sponges (*Porifera*). A large group of fixed, plant-like animals, ranking next to the protozoa in simplicity of structure. Sponges consist of a framework—sometimes of a fibrous or horn-like sub-



Ventriculites.



Dactylocalyx.

Sycandra

SPONGES.

stance, and sometimes of an aggregation of hard, siliceous spicules—which supports in its meshes the soft, jelly-like animal parts. The fibrous framework or

skeleton of certain species freed from animal matter and dried is the sponge of commerce. Of several thousand species of sponges only about 6 are commercially valuable. The best dried sponges come from the Mediterranean, those from the Red Sea are next, while those from the West Indies are coarser and less durable. The **Wool Sponge** (*Spongia gossypina*) of Florida attains a weight of one tenth of a pound in 6 months' growth and is marketable in a year. **Venus's Flower-basket** is a peculiar siliceous sponge, as is also the curious **Glass-rope Sponge.**

Squid. A cephalopod mollusk, with a long body, wide lateral fins, a head encircled by 8 sucker-bearing arms and 2 longer, slender tentacular arms or feelers, also sucker-bearing. The **Common Squid** (*Loligo vulgaris*) of European waters, 12 inches long, is a much prized bait for cod, as is the very abundant **Flying Squid** (*Ommastrephes illecebrosus*), 6 to 12 inches long, of the New England coast, so named from its habit of leaping from the water. The **Giant Squid** (*Architeuthis princeps*) attains enormous size, a specimen washed ashore in Newfoundland measuring 44 feet in length.

Squirrel (*Sciurus*). A small rodent with soft fur, long bushy tail, large eyes, and long whiskers, diurnal and mostly arboreal in habit, numbering over 100 species, distributed nearly throughout the world, except Australia, the largest and most beautiful occurring in southern Asia. The **Red Squirrel** (*S. hudsonicus*), 14 inches long, tail 6 inches, ranging from Labrador to the Rocky Mountains and Alaska, is the hardiest American species, never hibernating in winter. The **Gray Squirrel** (*S. carolinensis*), 20 inches long, tail 9 inches, inhabiting forests from Maine to Minnesota southward, partially hibernating in winter, is abundant in parks and easily tamed. The southern **Fox Squirrel** (*S. niger*), 26 inches long, tail 12 inches, occurring in the south Atlantic and Gulf states, is the largest American species.

Starfish (*Asteroidea*). A class of marine echinoderms with a five-sided, usually five-rayed, star-shaped body covered with short small spines. There are 2 or 4 rows of feet or tentacles on the mouth side of the body which enable them to crawl. At the end of each ray is a rudimentary eye. Starfish are very destructive to snails, worms, clams, and small shellfish, particularly oysters, doing great damage to oyster beds. The starfish grasps the oyster with its tentacles, exerts a steady strain, finally compelling it to open. The starfish then protrudes its stomach and digests the soft parts of the oyster.

Starling (*Sturnus vulgaris*). An Old World bird of striking brown, black and buff plumage, resembling small crows in habits, often mimicking other birds and familiar sounds; well known to the ancients and still frequently kept as a cage bird.

Stork (*Ciconia alba*). A large, well-known heron-like European bird, standing fully 3 feet high and exceeding 3½ feet in length. In central Europe, where they are protected as scavengers, they build their nests on roofs and chimneys in immense numbers. Storks display remarkable fidelity to their young and have entered largely into folk lore, proverbs, and fable.

Sturgeon (*Acipenser*). A large, long-snouted, sea and river fish, occurring in northern regions. The **Common Sturgeon** (*Acipenser sturio*) of Europe and America, a shark-like fish, sometimes reaching a length of 12 feet, is much prized for food, caviare being made from its roe. The **Giant Sturgeon** (*A. huso*) of the Caspian and Black seas attaining 24 feet in length and weighing upwards of 1,200 pounds, is coarse-fleshed and inferior.

Sucker (*Catastomus*). A North American fresh-water fish distinguished by a toothless, sucker-like mouth, without barbels. There are upwards of 50 species, some of which are prized for food, though the flesh is rather inferior and somewhat tasteless.

Sunfish (*Lepomis*). A small perch-like, North American fish inhabiting still, clear streams and ponds, living on crustacea, worms, and other fishes. They are easily caught and are of fair quality as food fish

Swallow (*Hirundinidae*). A passerine bird with a forked tail, long pointed wings, and a short, widely opening bill, found in nearly all regions. The **Barn Swallow** (*Petrochelidon erythrogaster*) nesting in colonies in barns, 7 inches long, steel-blue above, buff below, is exceedingly abundant from the Atlantic to the Pacific. The **Cliff Swallow** (*Petrochelidon lunifrons*), also called **Eave Swallow,** 5 inches long, steel-blue above, whitish below, usually builds under eaves. The **Tree Swallow** (*Tachycineta bicolor*), 6 inches long, steel-blue above, pure white below, ranging from Labrador to Alaska, usually nests in trees. The **Bank Swallow** (*Riparia riparia*), 5 inches long, grayish brown above, white below, nests in burrows in sand or gravel banks.

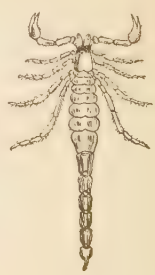
Swordfish (*Xiphias gladius*). A large, widely distributed fish, frequenting the open seas, reaching a length of 15 feet and weighing upwards of 400 pounds. The bones of the upper jaw are prolonged into a stiff, flattened sword, which it uses to kill other fish for food. Its oily flesh is highly regarded, resembling that of the halibut.

Tanager (*Tanagridae*). A family of small, usually brilliantly colored birds, related to the finches, numbering upwards of 300 species, mostly of tropical America. The **Scarlet Tanager** (*Piranga erythromelas*) of eastern North America from Manitoba southward, a fairly good song bird with brilliant scarlet body and black wings, is conspicuous in woodlands in summer. The **Summer Tanager** or **Redbird** (*P. rubra*) of the Eastern States, is similar in size, but deep rich red throughout. The **Louisiana Tanager** (*P. ludoviciana*), yellow and black with only the head red, occurs in the Western States and Canada.

American Tapir.

Tapir (*Tapirus*). A large, thick-skinned, hoofed mammal with a short, movable proboscis, small eyes, pig-like ears, distinguished from their nearest allies the rhinoceroses by having 4 toes on the fore feet, and 3 toes on the hind feet. In habit tapirs are solitary, shy, and harmless, living in the dense undergrowth of forests. The **American Tapir** (*T. americanus*) of South American forests east of the Andes, 6 feet long and 3½ feet high, is hunted for its flesh and sometimes domesticated. The **Malay Tapir** (*T. indicus*) of southern Asia, Sumatra, and Borneo, is the largest species, reaching 8 feet in length.

Tarantula.



Scorpion.

Tarantula (*Lycosa*). A large, savage, preying spider, formerly reputed extremely poisonous, but found to be comparatively harmless. The

PAINTED TURTLE
(CHRYSEMIS PICTA

LEOPARD LIZARD
(CROTAPHYTUS WISLIZENI)

MILK SNAKE
(OPHIBOLUS DOLIATUS TRIANGULATUS)

CORAL SNAKE
(ELAPS FULVIUS)

REPTILES

tarantula of southern Europe (*L. tarantula*) is sometimes 2 inches long, and the American species (*L. fatifera*) of New England and (*L. carolinensis*) of the Southern States are nearly equal to it in size.

Tarpon (*Tarpon atlanticus*). An immense American game fish, with enormous silver scales, sometimes 3 inches in diameter, ranging from Long Island to Brazil, most abundant in Florida and Porto Rico, reaching a length of 6 feet and 300 pounds weight, second in size only to the tuna or tunny among game fishes.

Teal (*Anas*). A small duck of the northern hemisphere, inhabiting lakes and swamps, usually easily insnared or shot, and highly esteemed for food. The **Blue-winged Teal** (*A. discors*), abundant east of the Rocky Mountains, about 16 inches long, is readily known by its sky-blue wing coverts. The slightly smaller **Green-winged Teal** (*A. carolinense*), distinguished by a shining green patch behind the eye, ranges throughout North America. The **Cinnamon Teal** (*A. cyanoptera*) of the western United States, 17 inches long, has a cinnamon-colored head and neck and blue wing coverts. (See plate of DUCKS.)

Termites or **White Ants** (*Termes*). Isopterous insects somewhat resembling true ants in form and habits, though in no wise related to them. There are about 200 species, mostly of tropical regions, where they dwell in large colonies, sometimes constructing huge nests 10 feet high. They live chiefly upon dead wood and are very destructive to timber, wooden dwellings, and furniture.

Tern (*Sterna*). A sea bird related to the gulls, but swifter and more graceful in flight, often called the sea swallow. The **Common Tern** (*S. hirundo*), a beautiful bird about 15 inches long, grayish-blue and pearl gray in color, of the Atlantic coast, was once much more abundant, but has been nearly exterminated for millinery purposes.

Terrapin. Small carnivorous turtles, mostly aquatic, a few being terrestrial. There are about 80 species, 25 of which are North American. Some of the best known are the **Diamond Back** (*Malaclemmys centrata*) of the Atlantic coast, highly prized as a table delicacy; the **Painted Terrapin** (*Chrysemys picta*), common in ponds and shores (see plate of REPTILES), and the **Box Tortoise** (*Terrapene carolina*) of dry woods from New York to Missouri, which can shut itself in its shell like a box.

Thrush (*Turdidae*). The name for a large family of birds containing about 300 species, including many of the finest song birds. The **Wood Thrush** (*Turdus mustelinus*), frequenting woodlands of the eastern United States, is noted for its exquisite song, while the smaller **Hermit Thrush** (*T. aonalaskae*), occurring throughout North America, resembles the nightingale in appearance, and nearly equals it in song. The large **Missel Thrush** (*T. viscivorous*), the **Fieldfare** (*T. pilaris*), and the **Song Thrush, Throstle,** or **Mavis** (*T. musicus*) are common in Europe, the latter being one of the finest songsters.

Tiger (*Felis tigris*). A carnivorous mammal found exclusively in Asia, chiefly in India; a large, powerful, and active cat, second only to the lion in size, measuring when full grown, 6½ feet, besides the tail, about 3 feet in length, and weighing 350 to upwards of 500 pounds. The tiger is usually solitary in habit, lying hidden during the day, fond of water, and a strong swimmer. Game-hunting tigers live upon deer, antelope, wild pigs, and other small animals that destroy crops, and are rather beneficial than otherwise. Cattle-killing tigers, however, infest jungles near villages and wreak destruction upon cattle, horses, sheep, and goats, doing immense damage, and some of these, losing their fear of human beings, become man-eating tigers, which were a terrible scourge in India before European occupation. If taken very early, tiger cubs may be trained and remain good tempered when young, but are never trustworthy when full grown. Captive tigers were exhibited in ancient Rome and are now taken to most parts of the world, frequently living to an age of 25 years in captivity.

Toad (*Bufo*). A four-footed amphibian, related to the frog but lacking teeth, and more sluggish in habit, found chiefly on land, feeding on worms and insects, harmless except for slightly irritating secretions from its skin. The **American Toad,** (*B. lentiginosus*) of the Eastern States is 3½ inches long, very warty when adult, brownish olive above and yellowish below, with several varieties.

Tortoise (*Testudinidae*). The name given to land turtles, which walk rather than swim, are herbivorous rather than carnivorous, and, though somewhat aquatic, none are marine. There

GIANT TORTOISE.

are about 20 species, the largest being found in the Galapagos Islands west of Ecuador, several kinds measuring 4 to 5 feet in length, and weighing several hundred pounds. Many are esteemed for their flesh, particularly some of the smaller species.

Tree Frog or **Tree Toad** (*Hyla*). A four-footed batrachian related to the frogs, with the toes provided with sticky discs for clinging to leaves and branches. The common **Tree Frog** (*H. versicolor*), 2 inches long, lives in trees from Kansas eastward. The **Cricket Frog** (*Acris gryllus*) somewhat smaller, with a sharp voice like that of a cricket, is found in swamps but rarely in trees.

Trichina (*T. spiralis*). A minute thread worm, infesting the intestines of the pig and some other mammals. When introduced into the human system encysted in raw or imperfectly cooked pork, trichinae develop in immense numbers, and in migrating to the muscles, produce the extremely painful and often fatal disease, trichinosis.

Trout (*Salvelinus*). A genus of fishes very closely related to the salmon, but smaller, more beautiful, and usually living in colder waters. The **Brook Trout** (*S. fontinalis*), the finest and most prized of inland game fishes occurring in cold streams, from New England to Minnesota northward, and introduced westward, is usually 6 to 10 inches long and seldom exceeds 2 pounds weight. The **Great Lake Trout** (*S. namaycush*), the largest species, very valuable for food, sometimes weighing 100 pounds, and averaging 15 to 20 pounds, occurs in large lakes from Maine to Vancouver and northward.

Tunny or **Tuna** (*Thunnus thynnus*). The largest of game fishes, in rare instances 10 to 15 feet long and weighing 1,500 pounds, but 50 to 250 pounds is a common size in California. Tunny fishing antedates the Christian era in the Mediterranean and is now the favorite sea sport of the California coast.

Turtle. The general name for any reptile of the order *Chelonia*, especially applied to marine forms, although in America land forms or tortoises as well as fresh-water species are called turtles. (See CHELONIA, SEA TURTLE, TERRAPIN, TORTOISE.)

Umbrella Bird (*Cephaloterus ornatus*). A South American bird similar to the crow in size, so named from a peculiar umbrella-like crest of feathers.

Ungulata, Ungulates. An order of mammals containing all hoofed animals, and including nearly all domestic animals, ox, horse, ass, sheep, goat, pig, reindeer, camel, llama, as well as the deer,

antelope, giraffe, elephant, zebra, tapir, rhinoceros, and hippopotamus.

Vampires. Certain South American leaf-nosed bats, mostly living upon insects and fruits, are called vampires. Popular superstition has invested the **Great Vampire** (*Vampyrus spectrum*), which has a hideous countenance beset with long canine teeth and a wing spread exceeding 2 feet with most horrible blood-sucking propensities, but it lives exclusively upon insects and fruits, and is entirely harmless. However, two small **Blood-sucking Vampires**, *Desmodus rufus*, only 3 inches long, and *Diphylla ecaudata*, still smaller, attack men, cattle, horses, and other animals and are believed to subsist entirely upon blood.

VICUNA.

Vicuna (*Lama vicuña*). A mammal of the camel family, found in the high Andes from Ecuador to Bolivia, smaller than the guanaco, standing only about 2½ feet high at the shoulder, light brown or yellowish above and lighter below, still hunted by the native peoples for its flesh and wool.

Vinegar Eel (*Anguillula antiglutinis*). A small, slender worm living on the small fungi that grow in fermenting fruit juices, often seen in incompletely fermented or unfiltered vinegar.

Viper. Old World venomous snakes of the family *Viperidae*. The **Common Viper** (*Pelias berus*), the only poisonous snake of Great Britain, occurs throughout Europe and northern Asia. The **Chain Viper** (*Vipera russelli*), next to the cobra, is the most deadly serpent in India. The large **Puff Adder** (*V. arietans*), sometimes 6 feet long, is equally feared nearly throughout Africa. The small **Horned Viper** (*Cerastes cornutus*) of North Africa, only 2 feet long, is exceedingly dangerous.

Vulture. A carrion eating, diurnal bird of prey. Those of the New World (family *Cathartidae*) are large, long-winged birds of powerful and graceful flight, but voiceless, with naked head and neck, and clumsy and repulsive when on the ground. The **Black Vulture** (*Catharista urubu*), common in the Southern States and South America, and the **Turkey Buzzard** (*Cathartes aura*) with a wide range in the United States, and very abundant in the South and Southwest, are valuable scavengers in southern cities. The **California Vulture** (*Pseudogryphus californianus*), second only to the condor among birds of flight, sometimes attains a wing spread exceeding 10 feet. The **King Vulture** (*Gypagus papa*) of Mexico, is only slightly smaller, while the **Condor**, a South American vulture, is probably the largest bird of flight.

Walrus (*Odobenus*). A marine, carnivorous mammal, closely related to the seals; distinguished by the development of the upper incisor teeth into long, pointed tusks, an immense girth of body about the fore limbs, and the absence of external ears. The **Pacific Walrus** (*O. obesus*), sometimes 12 feet long, weighing 2,000 pounds, with tusks 2 feet in length, once ranged in large herds along the coasts of Alaska, but since 1860 has been nearly exterminated for its hide, ivory, and oil. The **Atlantic Walrus** (*O. rosmarus*), somewhat smaller, though occasionally exceeding 10 feet in length and 1,500 pounds weight, with tusks 18 inches long, was formerly abundant from Newfoundland northward, though it is now restricted to high latitudes by reason of its destruction for walrus oil, tusks, and leather.

Warblers. The name given to a large family (*Mniotiltidae*) of small American birds from their resemblance to the Old World warblers; usually brilliantly and variously colored; of about 100 species, a few are remarkable songsters, but most possess only feeble vocal powers. All are insect-eaters, and highly migratory; some species range from the tropics to beyond the Arctic circle and return during the year.

Wart Hog (*Phacochaerus*). Two closely related East African wild hogs are so named from large, wart-like protuberances on the sides of the face. Their heads are of enormous size, with long snouts and huge tusks. Except for the bristly mane surmounting the back their bodies are scantily covered with hair. The wart hogs are the ugliest in appearance of all swine, strong and fearless, and live chiefly on roots which they unearth with their tusks.

Wasp. A predatory, stinging insect, related to the bees, but differing in having strong jaws for biting, and lacking structures for gathering honey. Social Wasps, like honeybees, live in communities made up of males, workers, and females. The young are fed upon insects killed and prepared by the workers, while the grown wasps live upon meats, insects, fruit, and honey captured from honeybees in flight. Among the best known social wasps are the **Common Hornet** (*Vespa crabro*), and the **Yellow Jacket** (*Vespa arenaria*). Solitary Wasps do not form communities—each female making her own nest and rearing her young. These include the mud, sand, wood, and digger wasps. The **Common Mud Wasp** or **Mud Dauber** (*Eumenes fraterna*) plasters cells of clay on walls of houses, lays an egg in each and then fills them with insects paralyzed, but not killed, by stinging, which become food for the larvae when hatched.

Waxwing (*Ampelis*). A small passerine bird, so named from the small, red, horny, wax-like tips to the shafts of certain wing feathers. The **Bohemian Waxwing** (*A. garrulus*) is a graceful, beautifully crested bird about 8 inches long, ranging from the Great Lakes to Alaska, and also in Europe. The **Cedar Waxwing** or **Cedar Bird** (*A. cedrorum*), a somewhat smaller species, breeding from Virginia to Labrador, and wintering from the northern United States to Central America, is one of the most beautiful and attractive American birds.

Weasel (*Putorius*). A small carnivorous mammal of the marten family (*Mustelidae*), with a very slender body, short legs, and a long neck; very muscular, alert, and courageous; as savage and relentless as a tiger, preying upon mice, rats, birds, and other small animals, sometimes attacking poultry, but in the main beneficial to the farmer. Most weasels are reddish brown above, yellowish or white beneath, with a blackish tip on the tail, and in northern regions turn snow-white in the winter, when their fur is known as ermine.

Whale (Order *Cetacea*). A marine mammal, the largest of living animals, and, so far as known, the largest that ever existed. While fish-like in form, whales are air-breathing, warm-blooded, and suckle their young like land mammals. Some 25 species are known, distributed in all oceans, but most abundant in cold zones, grouped in two families: the **Baleen Whales** (*Balaenidae*), without teeth, but provided instead with baleen, which is the whalebone of commerce, and the **Sperm Whales** (*Physeteridae*) furnished with formidable teeth and containing in their enormous heads the peculiar oil called spermaceti. The baleen whales are largest, the giant **Sulphur-bottom Whale** (*Balaenoptera sulfureus*) of the California coast, largest of all, attaining nearly 100 feet in length: the **Atlantic Blue Whale** (*B. musculus*), next in size, reaching 85 feet, the **Rorqual** (*B. physalus*), 70 feet, and the **Arctic Bowhead** (*Balaena mysticetus*), the most valuable for whalebone and oil, sometimes exceeding 60 feet. The sperm whales range in size from the **Pygmy Sperm Whale** (*Kogia*), 15 feet long, to the **Great Sperm Whale** (*Physeter macrocephalus*), over 80 feet in length.

Whip-poor-will (*Antrostomus vociferus*). A peculiar bird of the goat-sucker family (*Caprimulgidae*), about 10 inches long, nocturnal in habits, ranging throughout the eastern United States and Canada, so named for its peculiar cry uttered for some time after sunset and before sunrise.

Whitefish (*Coregonus*). The common name, given on account of their silvery color, by which some forty species of excellent food fishes are known; found chiefly in the lake region of North America. The **Common Whitefish** (*C. clupeiformis*) of the Great Lakes, most valuable of all, and ranking very high among food fishes, is marketed in large quantities.

Wildcat. An indefinite name by which several of the smaller members of the cat family are popularly called. In the United States it is most commonly applied to the lynxes.

PRAIRIE WOLF, OR COYOTE.

Wolf (*Canis*). A wild, carnivorous mammal of the dog family (*Canidae*). All are natives of the northern hemisphere, except one Antarctic species. Wolves in general are despicable cowards, and are readily frightened, usually obtaining their food by stealth, but when emboldened by hunger will attack cattle, horses, and even man. According to Hornaday, they are the only animals which make a regular practice of killing and devouring their wounded companions and eating their own dead. The **Gray** or **Timber Wolf** (*C. occidentalis*) ranges from northern Mexico almost throughout the continent to far beyond the Arctic circle. It attains a length of 4 feet, and is usually mixed black and white in color, but varies from black to white and reddish brown. In lairs in caves, burrows, or deep thickets, litters of 6 to 10 young are reared. It lives mostly upon small animals, particularly the sick and wounded, but when hunting in packs, will overpower the largest game. It has been largely exterminated in the Eastern States owing to its destructiveness to sheep and poultry. The **Coyote** or **Prairie Wolf** (*C. latrans*), similar, but smaller, being only about 3 feet long, common in the plains and mountains from central Mexico to Alberta, is very wary, cowardly, and is never dangerous to man, though it continually steals poultry, lambs, sheep, and pigs from ranches.

Wolverene or **Carcajou** (*Gulo luscus*). A small carnivore of the marten family (*Mustelidae*), about 30 inches long, with coarse, black outer fur, resembling a bear in form, but a marten in structure; noted for its cunning and voracity; becoming rare in America, now most abundant in the northern Rocky Mountains and Alaska.

Woodchuck or **Ground Hog** (*Arctomys monax*). A small, burrowing rodent, the best known of several North American marmots, about 18 inches long, clumsy, with short legs and a bushy tail, living on roots and herbs, hibernating early in winter, ranging from Hudson Bay to New England, Virginia, and Nebraska.

Woodcock (*Philohela minor*). A game bird of the snipe family, occurring from Manitoba to Labrador and southward, 11 inches long, with a long, straight bill, and large eyes set far back in the head, much prized for the table and, consequently, rapidly becoming scarce.

Wood Duck (*Aix sponsa*). The most beautiful of all ducks, noted for its resplendent plumage; occurs throughout North America, living in lowland woods, usually nesting in hollow stumps or trees, frequenting most portions of the United States during the summer, wintering southward and in Mexico and the West Indies. (See plate of DUCKS.)

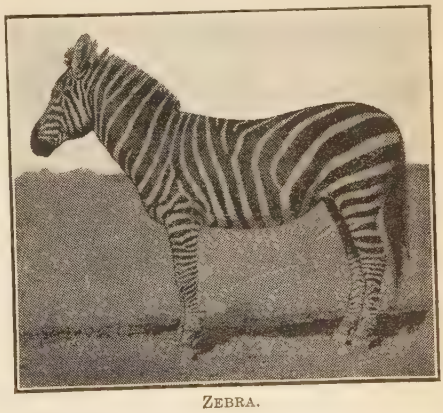
Woodpecker (*Picidae*). The common name for a large group of arboreal, insect-eating birds, with a straight, strong bill, adapted for drilling in wood, a sharp-pointed, barbed tongue for spearing insects, and feet fitted for creeping and climbing, often brilliantly colored, but usually with harsh, unmelodious voices, numbering about 350 species, ranging throughout the world except in Australia and Madagascar, some 20 occurring in the United States.

Wren (*Troglodytes*). The name given to a group of small, passerine song birds, all plainly colored, very active, insect-eating, and mostly migratory, very widely distributed but most abundant in tropical America, there being over 150 species, of which the most familiar example is the **House Wren** (*T. aedon*) of the eastern United States.

Yellow Bird (*Spinus tristis*). A small bird of the finch family, about 5 inches long, bright yellow with black wings, occurring throughout eastern North America, also called **American Goldfinch** or **Thistle Bird.**

Yellow Hammer, Flicker, Golden-winged Woodpecker (*Colaptes auratus*). The largest as well as the most common and conspicuous woodpecker of eastern North America, ranging from Alaska southward east of the Rocky Mountains.

Yellow-legs (*Totanus*). A wading game bird of the snipe family, so called from the color of its long legs. Two species, the **Greater Yellow-legs** (*T. melanoleucus*) and the **Lesser Yellow-legs** (*T. flavipes*) are found in the eastern and central United States.



ZEBRA.

Zebra (*Equus*). An African ass-like animal, marked with conspicuous stripes, differing from the horse by having an erect mane, larger head, and larger ears. The **Mountain Zebra** (*E. zebra*) of Cape Colony is 4 feet high, white, striped with black on the head, body, and legs, resembling the ass more than the horse. **Burchell's Zebra** (*E. burchellii*), larger and more horse-like, 4½ feet high, sorrel above, white below with dark brown or black stripes only on the body and head, lives in herds on south African plains, where it is hunted for its hide and flesh.

DICTIONARY OF SCIENTISTS.

Including modern explorers; for other biographies, see Index.

ABBE, CLEVELAND (1838-). American meteorologist; inaugurated system of daily weather forecasts; initiated the movement toward the present system of standard time.

ABRUZZI, DUKE OF THE (PRINCE LUIGI AMADEO GIUSEPPE) (1873-). Italian explorer; made first ascent Mt. St. Elias, 1897; in 1900 his Arctic expedition attained the northernmost latitude then reached, 86 degrees 33 minutes, 239 miles from the pole.

ACHARD (*ahk'art*), **FRANZ KARL** (1753-1821). A German chemist; founder of the beet sugar industry.

AGASSIZ (*ag'a-see*), **ALEXANDER** (1835-1910). American naturalist and capitalist, only son of Louis. With his knowledge of geology and engineering he developed the Calumet and Hecla copper mines, south of Lake Superior, bringing him great wealth, which he has devoted to zoölogical research, donating over one million dollars to endowment of the Harvard Museum of Comparative Zoölogy; author of several zoölogical works, mostly on deep sea animals.

AGASSIZ, LOUIS (1807-1873). Distinguished Swiss-American naturalist; born in Switzerland; studied under Cuvier at Paris; professor of natural history at Harvard (1848-1873); preëminently a teacher of great force, clearness, and enthusiasm, whose lectures, everywhere in demand, were the inspiration of a new era in American biological research; founded the Museum of Comparative Zoölogy, Cambridge (1858); author of important zoölogical works.

AL-KHUWARIZMI (? -about 831). An Arabian philosopher and the most celebrated algebraist of his time; worked in the observatory at Bagdad; computed a set of astronomical tables; wrote several works on mathematics. One of the latter, *Al-jabr wa'l muqabalah*, gave the name to algebra.

AMPERE (*ong-payr'*), **ANDRE MARIE** (1775-1836). A distinguished French physicist and mathematician, famous for his investigations in electrodynamics. His name is now given to a unit of electrical measurement.

ARAGO (*ar-a-go'*), **DOMINIQUE FRANCOIS** (1786-1853). A celebrated French astronomer and physicist; made many important discoveries in electro-magnetism, astronomy, and optics. He was perpetual secretary of the Academy of Sciences.

ARCHIMEDES (*ar-ki-mee'dees*) (287-212 B. C.). Greek geometrician; the greatest mathematician of antiquity; born in Sicily, studied at Alexandria, was killed at the fall of Syracuse. Among his works still extant are important treatises on plane and solid geometry, arithmetic, and mechanics; invented the spiral pump called "Archimedes' Screw."

ARCHY'TAS (first half of the fourth century B. C.). A famous Greek philosopher, mathematician, general, and statesman. He is regarded as the founder of scientific mechanics. He distinguished harmonical progression, doubled the cube, invented the pulley, taught that the earth is a sphere rotating on its axis in 24 hours.

ARTEDI (*ar-tay'de*), **PETER** (1705-1735). Swedish naturalist; friend of Linnaeus; author of an important work on fishes, which Cuvier says is the first attempt at a truly scientific classification.

ATWATER, WILBUR OLIN (1844-1907). An American chemist; a leader in the investigation of problems of nutrition; originated methods of experimentation now widely adopted; constructed a respiration calorimeter, and other physiological apparatus.

AU'DUBON, JOHN JAMES (1780-1851). American ornithologist; spent many years in studying and illustrating from life the birds of America. His great work is *Birds of America*, containing 435 plates and giving 1,065 figures. There are 175 complete good sets in existence, of which 80 sets are in America. A set is now worth over $2,000.

AVOGADRO (*a-vo-gah'dro*), **AMADEO** (1776-1856). An Italian physicist; celebrated for first formulating the fundamental principle of chemistry known as Avogadro's Law of the Atomic Theory, in 1811.

BABBAGE, CHARLES (1792-1871). An English mathematician and inventor of a calculating machine, which he failed to perfect; noted for his table of logarithms and over 80 other writings.

BAILEY, LIBERTY HYDE (1858-). Professor of horticulture, Cornell (1888-1903); director of College of Agriculture, Cornell, since 1903; has given particular attention to botanical and horticultural subjects and to the economics of agriculture and agricultural education; author of many standard books, including the *Cyclopedia of American Horticulture*; editor of *Cyclopedia of American Agriculture*.

BAIRD, SPENCER FULLERTON (1823-1887). A distinguished American naturalist; born at Reading, Pa. His writings embrace almost every branch of American natural history. For many years he edited the Smithsonian Reports, adding many valuable papers; wrote a *Catalogue of North American Reptiles*, *The Birds of North America*, *Mammals of North America*, and *History of American Birds*.

BALFOUR, FRANCIS MAITLAND (1851-1882). A British naturalist and author. He took a leading part in upbuilding the study of natural science at Cambridge, England, where in 1876 he was appointed lecturer of animal morphology. He received a gold medal from the Royal Society for his discoveries, which are embodied in his *Comparative Embryology*, remarkable for profound learning and clear statement. He was a brother of the Rt. Hon. A. J. Balfour.

BALL, SIR ROBERT STAWELL (1840-1909). English astronomer. He has embodied his observations in many popular works on astronomy. In recognition of his ability he has been appointed to many posts of honor, chief among them being astronomer royal of Ireland.

BARNARD, EDWARD EMERSON (1857-). An American astronomer; was astronomer in Lick Observatory, California, in 1887-1895, and then became professor of astronomy in Chicago University and director of the Yerkes Observatory. His principal discoveries are the fifth satellite of Jupiter in 1892, and 16 comets.

BECQUEREL (*bay-ke-rel'*), **ANTOINE CESAR** (1788-1878). A French physicist, noted for his discoveries in electricity and in electro-chemistry. He invented a method of electrotyping. His son, **ALEXANDRE EDMOND** (1820-1891), made important researches on the nature of light and its chemical effects, on phosphorescence, and on the conductivity and magnetic properties of many substances.

BENDIRE, CHARLES EMIL (1836-1897). A German-American military officer and ornithologist; came to the United States in 1852, and served through the Civil War. After the war he applied himself to the study of ornithology, and collected a vast amount of material in various branches of natural history.

BERTHELOT (*bert-lo'*), **PIERRE EUGENE MARCELLIN** (1827-1907). A French chemist. In 1878 he became president of the committee on explosives which introduced smokeless powder. His labors also led to the discovery of dyes extracted from coal tar.

BERTHOLLET (*ber-to-lay'*), **COUNT CLAUDE LOUIS** (1748-1822). A famous French chemist, native of Savoy, to whom we owe the discovery of the bleaching properties of chlorin, the remarkable salt called chlorate of potash, and many improvements in the manufactures. He demonstrated that ammonia is a compound of hydrogen and nitrogen.

BERZE'LIUS, JOHAN JAKOB, BARON (1779-1848). A celebrated Swedish chemist, one of the creators of modern chemistry; instituted the chemical notation by symbols based on the notion of equivalents; discovered selenium, thorium, and cerium; and shared with Davy the honor of propounding the electro-chemical theory.

BESSEY, CHARLES E. (1845-). An American botanist; educated at Harvard University; professor of botany in the Iowa Agricultural College (1870-1884); professor of botany in the University of Nebraska since 1884; acting chancellor of the University of Nebraska (1888-1891).

BIOT (*be-o'*), **JEAN BAPTISTE** (1774-1862). French mathematician, astronomer, and physicist; took part in measuring an arc of the meridian along with Arago (1806); made observations on the polarization of light.

BLUMENBACH, JOHANN FRIEDRICH (1752-1840). A German naturalist and founder of anthropology. He advocated the theory of the unity

of the human species, which he divided into the five types—Caucasian, Mongolian, Negro, American, and Malay.

BOYLE, ROBERT (1627-1691). A British natural philosopher; devoted his life and contributed greatly to science, especially chemistry and physics, formulating a law of physics known as Boyle's Law.

BRAHE (*brah*), **TYCHO** (1546-1601). A Danish astronomer; discovered a new star in Cassiopeia and the variations of the moon.

BREWSTER, SIR DAVID (1781-1868). An eminent Scottish natural philosopher; specially distinguished for his discoveries in light, his studies in optics, and for his optical inventions, such as the kaleidoscope and the stereoscope.

BRITTON, NATHANIEL LORD (1859-). American botanist; professor botany, Columbia, since 1891. Director N. Y. Botanical Gardens; author of *Flora of the Northern United States and Canada*, and numerous botanical papers.

BROOKS, WILLIAM KEITH (1848-1908). American zoölogist; born at Cleveland, Ohio; professor of zoölogy, Johns Hopkins University (1876-1908).

BROWN, ROBERT (1773-1858). A Scotch botanist, in 1801 appointed naturalist to Flinders's surveying expedition to Australia; returned with nearly 4,000 species of plants.

BROWN-SEQUARD, EDOUARD (1817-1894). A Franco-American physiologist and neurologist; contributed notable results from his experiments on the blood, muscular irritability, animal heat, the spinal cord, and the nervous system.

BUCKLAND, FRANCIS TREVELYAN (1826-1880). An English naturalist; an authority on fish culture and an uncompromising opponent of Darwinism.

BUFFON, GEORGE LOUIS LECLERC, COMTE DE (1707-1788). A French naturalist and philosopher. His great work is his *Natural History*, which was the first attempt to gather known facts in that department of knowledge and to present them in a readable, interesting, and intelligible form.

BUNSEN, ROBERT WILHELM (1811-1899). A German chemist. Among his many discoveries and inventions are the commercial production of magnesium, magnesium light, spectrum analysis, the electric pile, and the burner which bears his name.

BURBANK, LUTHER (1849-). An American horticulturist; born at Lancaster, Mass. Established an experimental farm at Santa Rosa, Cal. (1875); originated many varieties of fruits, vegetables, and flowers. In the long list are the Burbank potato, several varieties of plums, prunes, roses, callas, and an edible thornless cactus.

CAGLIOSTRO (*kal-yos'tro*), **ALESSANDRO, COUNT OF,** or **GIUSEPPE BALSAMO** (1743-1795). A celebrated scientific pretender, born in Italy. The discovery of the philosopher's stone and the preparation of an elixir of life were the pretenses by means of which he extracted money from credulous people.

CANDOLLE, AUGUSTIN PYRAME DE (1778-1841). An eminent Swiss botanist; assisted Cuvier and Lamarck; classification of plants was his contribution to botanical science.

CAVENDISH, HENRY (1731-1810). An English natural philosopher and chemist; the first to analyze the air of the atmosphere, determine the mean density of the earth, discover the composition of water, and ascertain the properties of hydrogen; the founder of pneumatic chemistry.

CHAMBERLIN, THOMAS CHROWDER (1843-). American geologist; president of the University of Wisconsin (1887-1892); since 1892 head of department of geology, University of Chicago; has developed theories of glaciers and glacial formations, and the planetesimal hypothesis.

CHAMPOLLION (*shon-pol-yon'*), **JEAN FRANCOIS** (1790-1832). A celebrated French Egyptologist; was the first to decipher the hieroglyphics of ancient Egypt; conducted a scientific expedition to Egypt in 1828. A chair of Egyptology was in consequence instituted in the College of France, and he was installed as the first professor.

COPE, EDWARD DRINKER (1840-1897). American naturalist; born in Philadelphia. His investigations of the ichthyology and herpetology of North America and his contributions to the history of extinct vertebrates laid the foundation for the modern classification of North American fishes, amphibians, and reptiles.

COPERNICUS (KOPPERNIGK), NICHOLAS (1473-1543). German astronomer; father of modern astronomy; disproved the Ptolemaic theory. In his great work, *The Revolution of the Celestial Orbs*, the first copy of which was handed to him on the day of his death, he demonstrated that the sun is the center of the system.

COUES, ELLIOTT (1842-1899). An American ornithologist. He was connected with the Smithsonian Institution; author of the well-known *Key to North American Birds*.

COULTER, JOHN MERLE (1851-). American botanist and educator; born at Ningpo, China; head of the department of botany, University of Chicago; author of numerous botanical works.

CROOKES, SIR WILLIAM (1832-). An English physicist and chemist. He invented the radiometer and the otheoscope, and announced his discovery of a method of separating gold and silver from their ores; recognized as an expert on sanitary matters. He discovered thallium in 1861 and the radiometer in 1874. His improvements on vacuum tubes had an important bearing on X-rays.

CURIE, PIERRE (1859-1906). French chemist and physicist; famous as the discoverer of radium. His wife, *nee* Slodovska, was associated with him in all his works.

CUVIER, LEOPOLD CHRETIEN FREDERIC DAGOBERT BARON (1769-1832). A French naturalist; the creator of comparative anatomy and paleontology. Towards the end of his life he combated the views of Geoffroy Saint-Hilaire regarding the unity of organic structure. His great work is the *Animal Kingdom*. He adopted the literary title of George Cuvier.

D'ALEMBERT (*da-lahn-bar'*) (1717-1783). The assumed name of **JEAN LE ROND**, a French philosopher, mathematician, and encyclopedist. He wrote a *Mémoire sur le calcul intégral*, *Sur la réfraction des corps solides*, and *Traité de dynamique*.

DALTON, JOHN (1766-1844). An English chemist and natural philosopher; wrote *New System of Chemical Philosophy* (1808-1810). He distinguished himself in the development of the atomic theory, which revolutionized chemistry and contributed more valuable results than any other idea introduced into the study of physics.

DANA, JAMES DWIGHT (1813-1895). An American scientist; born in Utica, N. Y. His researches in geology made him famous; wrote *The System of Mineralogy*, which gained an international reputation; *Manual of Mineralogy*, *Manual of Geology*, *Corals and Coral Islands*, *Text-Book of Geology*, and *The Geological Story Briefly Told*.

DARWIN, CHARLES ROBERT (1809-1882). English naturalist; developed the theory of evolution in his *Origin of Species by Means of Natural Selection* (1859), and extended it to the human race in his *Descent of Man* (1871); proposed the now generally accepted theory of the origin of coral reefs, and made many other contributions to natural science.

DARWIN, ERASMUS (1731-1802). English physician and naturalist; grandfather of Charles Darwin. His *Zoönomia*, a prose medical work, received wide notice. It contained many novel and startling ideas, and Samuel Butler says that Paley's *Natural Theology* was written to refute these ideas. Erasmus Darwin was a strong believer in evolution and anticipated much that was afterwards advocated by Lamarck and Charles Darwin.

DAVY, SIR HUMPHRY (1778-1829). English chemist and natural philosopher; born at Penzance, in Cornwall. The publication of his experiments in science brought him fame. He discovered the effect of nitrous oxid (laughing gas), and the metals sodium, barium, calcium, and magnesium. His work *On Some Chemical Agencies of Electricity* were sufficient to establish his reputation as a chemist. He is also remembered as the inventor of the safety-lamp known by his name.

DAWSON, GEORGE MERCER (1840-1901). A Canadian geologist; born at Truro, N. S.; the son of Sir John William Dawson; member of the Bering Sea Commission (1891); director of the Geological Survey of Canada (1895-1901); author of *Physical Geography and Geology of Canada* and *The Physical and Geological Features of a Part of the Rocky Mountains*.

DAWSON, SIR JOHN WILLIAM (1820-1899). A Canadian geologist; born in Pictou, N. S.; assisted Sir Charles Lyell in geological explorations of Nova Scotia (1841); superintendent of education in Nova Scotia

(1850-1855); professor of natural history at McGill University (1850). He was an eminent authority on Canadian geology; prominent in the controversy over the supposed fossil "Eozoön" found among the earlier rocks; and one of the foremost opponents of the Darwinian theory of the origin of life forms: wrote Acadian *Geology, Acadia, The Story of the Earth and Man, The Dawn of Life, The Origin of the World,* etc.

DE MORGAN, AUGUSTUS (1806-1871). An eminent English mathematician; wrote treatises on arithmetic, algebra, trigonometry, and differential and integral calculus.

DE VRIES, HUGO (1840-). Dutch botanist; has made notable researches in variation of species, and developed the theory of mutations in species forming.

DEWAR, SIR JAMES (1842-). English chemist and physicist. With Sir Frederick Abel he invented cordite. In 1898 he succeeded in liquefying hydrogen and helium.

DIOPHANTUS (flourished 260). A celebrated Greek mathematician of Alexandria. He is called the "*Father of Algebra.*" His works were on *Arithmetic, Polygonal Numbers,* and the *Porisms.* He was the originator of Diophantine Analysis.

DIOSCORIDES (about 100). A Greek physician, whose great work on materia medica remained in use for 1,500 years.

DOUGLASS, EARL (1862-). Geologist and paleontologist; has been engaged in research work at Carnegie Museum, Pittsburg, since 1902; conducted expeditions in the West, discovering new forms of fossil plants and animals, especially mammals; published valuable monographs on the results.

DRAPER, JOHN WILLIAM (1811-1882). A chemist, physiologist, and man of letters; born at Liverpool; settled in the United States; wrote on chemistry, physiology, and physics generally. His *History of the Conflict between Science and Religion* is an able book.

DUMAS, JEAN BAPTISTE (1800-1884). Distinguished French chemist. His writings, setting forth the result of his researches on atomic weights, sulphuric ether, and the phenomena of organic substitution, are famous.

EASTMAN, JOHN ROBIE (1836-). American astronomer; born at Andover, N. H.; professor of mathematics in the U. S. Naval Observatory.

ELLIOT, DANIEL GIRAUD (1835-). An American ornithologist. He became curator of zoölogy for the Field Columbian Museum at Chicago. His extensive scientific writings include *Birds of North America, Wild Fowls of the United States and British Possessions, North American Shore Birds,* and *Synopsis of the Mammals of North America and the Adjacent Seas.*

ENCKE (*en'ke*), **JOHANN FRANZ** (1791-1865). A German astronomer; calculated the orbit of the comet observed by Mechain, Miss Herschel, and Pons, predicted its return, and detected a gradual acceleration of movement ascribed by him to the presence of a resisting medium. The comet is now known as Encke's comet.

ENDLICHER, STEPHAN LADISLAUS (1804-1849). An Austrian botanist. His works form a valuable contribution to systematic botany, including an elaboration of the natural system of classification of plants.

ERASISTRATUS (about 300-about 260 B. C.). One of the most celebrated physicians and anatomists of ancient times; born in Ceos. He was the first to distinguish the sensory from the motor nerves and to trace both sets of nerves to the brain.

ESPY, JAMES POLLARD (1785-1860). A meteorologist; born in Pennsylvania; did notable work in investigating the causes of storms, and in 1841 published *The Philosophy of Storms*; was appointed to the Washington Observatory, where he carried on experiments in the cooling of gases and atmospheric expansion. It was through Espy that the present United States Weather Bureau became a possibility.

EUCLID (flourished 300 B. C.). The most famous of the Greek geometricians. He lived at Alexandria in the time of Ptolemy I. (306-283 B. C.). The Greeks called him the "Author of the Elements." His name is even now synonymous with elementary geometry. His *Elements* was known to the Arabs, having been translated in the time of Harun-al-Raschid. It was translated from the Arabic into Latin by Adelard of Bath about 1120, and this translation was printed in Venice in 1482. This was translated into English by Billingsley in 1570. Euclid's other works are *Data, Phenomena, Optics, Reflections,* and *Division of the Scale.*

EUSTACHIO (*ay-oos-tah'ke-o*), **BARTOLOMMEO** (about 1500-about 1574). An Italian physician and anatomist. He devoted himself to medical science and in particular to anatomy, which he much enriched by his researches. Among his discoveries were the Eustachian tube of the ear and the Eustachian valve of the heart.

FAHRENHEIT (*far'en-hite*), **GABRIEL DANIEL** (1686-1736). A distinguished German physicist and instrument-maker; improved the accuracy of thermometers by substituting mercury for alcohol; devised the graduated scale for thermometers; discovered the fixed boiling point of other liquids than water, and that the boiling point varied with change in atmospheric pressure.

FALLOPIUS or **FALLOPIO, GABRIELLO** (1523-1562). An Italian anatomist. The Fallopian tubes which connect the ovaries with the uterus, first accurately described by him, are called after his name, as also the duct which transmits the facial nerve after it leaves the auditory nerve.

FARADAY, MICHAEL (1791-1867). English chemist and natural philosopher; founder of the science of magneto-electricity; one of the most brilliant experimentalists known to science; wrote *Experimental Researches in Electricity* and *Researches in Chemistry and Physics.*

FRANKLAND, SIR EDWARD (1825-1899). English chemist. He contributed to science the theory of valency, i. e., the conclusion that each atom of an elementary substance possesses a clearly limited power of saturation, so that only a correspondingly limited number of atoms of other elements can be attached to it. With Sir William Lockyer he discovered helium in the sun.

FRANKLIN, SIR JOHN (1786-1847). English Arctic explorer; made extensive explorations of Arctic America; with all the other members of his party perished in an expedition which left England in 1845.

FRAUNHOFER (*frown'ho-fer,*) **JOSEPH VON** (1787-1826). A German optician; born in Bavaria; associated with many discoveries in optics as well as in inventions of and improvements in optical instruments; celebrated for his discovery of the dark lines in the solar spectrum called "Fraunhofer lines."

FREMY, EDMOND (1814-1894). French chemist. In 1888 he and Verneuil produced rubies similar in color and chemical composition to the natural stones.

GALEN (130-about 201). Greek physician, medical writer, and philosopher. His works covered anatomy, physiology, dietetics, hygiene, pathology, diagnosis, pharmacy, materia medica, therapeutics, surgery, and philosophy. These were written originally in Greek; some were translated into Latin and Arabic.

GALILEI (*gah-le-lai'e*), **GALILEO (GALILEO)** (1564-1642). Italian astronomer; discovered about 1582 the isochronism of the vibrations of a pendulum, and in 1590 the law by which the velocity of falling bodies is accelerated; adopted in astronomy the system of Copernicus; constructed his wonderful telescope (1609). Through it he discovered the satellites of Jupiter, and was enabled to explore the surface of the moon and view the phases of Venus. He also ascertained that the "Milky Way" is composed of myriads of stars.

GALLE (*gawl'eh*), **JOHANN GOTTFRIED** (1812-1910). A German astronomer; wrote extensively on the natural sciences and mathematics. He was the first to observe the planet Neptune (September 23, 1846); discovered three comets (1839-1840).

GALTON, SIR FRANCIS (1822-). An English scientist. Having traveled in North Africa, he explored in 1850 lands hitherto unknown in South Africa, publishing his experiences in his *Narrative of an Explorer in Tropical South Africa.* Later he specially devoted himself to the problem of heredity.

GALVA'NI, LUIGI (1737-1798). An Italian anatomist. He studied theology and, later, medicine at the University of Bologna, and was elected professor of anatomy. Galvani owes the wide celebrity attached to his name to his discoveries in animal electricity.

GAUSS (*gowss*), **KARL FRIEDRICH** (1777-1855). A distinguished German mathematician; wrote *Disquisitiones Arithmeticae* and many other important works on the theory of surfaces, least squares, astronomy, and physics.

GAY-LUSSAC (*gay-lu-sak'*), **JOSEPH LOUIS** (1778-1850). French chemist and physicist; employed himself in chemical and physical research, in connection with which he made two balloon ascents. His name

is associated with many notable discoveries in chemistry and physics, e. g., the law of volumes, isolation of cyanogen, etc.

GEGENBAUR (*gay'gen-bower*), **KARL** (1826-1903). A leading comparative anatomist in Germany; the first to place the study of anatomy on an evolutionary basis.

GEIKIE (*gee'ke*), **SIR ARCHIBALD** (1835-). A British geologist. His researches in all branches of geology have made him an authority on these subjects. While serving on the Geological Survey (1855) he wrote *Scenery of Scotland*, which first brought him to public notice.

GEOFFROY SAINT-HILAIRE, ETIENNE (1772-1844). French naturalist; professor of vertebrate zoölogy at Paris; accompanied Bonaparte to Egypt and founded the Institute of Cairo; made teratology, or the study of monstrosities, a science; created the science of embryology. His son, Isidore (1805-1861), continued the works and teachings of his father.

GERHARDT, KARL FRIEDRICH (1816-1856). An eminent French chemist; in collaboration with Cahours, published a memoir on essential oils, embodying new theories; his treatises upon his views of series, theories of types, and researches upon acids and oxids mark an epoch in the history of chemistry.

GESNER, KONRAD VON (1516-1565). A Swiss naturalist; performed the useful work of bringing together all the known information about animals and plants then discovered.

GRAY, ASA (1810-1888). An American botanist; born in Paris, Oneida County, N. Y. In 1874 he succeeded Agassiz as a regent of the Smithsonian Institution. He ranked among the leading botanists of his age, and became an influential supporter of the Darwinian theories of evolution. He wrote a *Manual of Botany of the Northern United States*, *Synoptical Flora of North America*, and other works.

GREELY, ADOLPHUS WASHINGTON (1844-). American Arctic explorer and meteorologist; chief U. S. Signal Service since 1887; given command Arctic expedition in 1881, reaching latitude 83 degrees 24 minutes, the farthest north attained to that date.

HAECKEL (*hay'kel*), **ERNST HEINRICH** (1834-). A distinguished German naturalist. He became professor of zoölogy at the University of Jena in 1865. His purely scientific works have been translated into many languages and include *History of Creation*, *Riddle of the Universe*, *A Visit to Ceylon*, and many others inspired by Darwin's *Origin of Species*.

HAHNEMANN, SAMUEL CHRISTIAN FRIEDRICH (1755-1843). A distinguished German physician and chemist, originator of the homeopathic system of medical practice.

HALL, MARSHALL (1790-1857). An English physician and physiologist; specialist in nervous diseases. His name is also associated with a well-known method of restoring suspended respiration.

HALLER, ALBRECHT VON (1708-1777). A celebrated anatomist, physiologist, botanist, physician, and poet; born at Bern; was a voluminous author.

HAMILTON, SIR WILLIAM ROWAN (1805-1865). Scotch-Irish mathematician and astronomer; born in Dublin, Ireland. His fame is chiefly founded on his discovery of quaternions, a new method in the higher mathematics.

HARTLEY, DAVID (1705-1757). An English philosopher and physician; wrote *Observations on Man, his Frame, his Duty, and his Expectations*; ascribed sensation to vibration in the nerves, and applied the doctrine of the association of ideas to mental phenomena.

HARVEY, WILLIAM (1578-1657). English physician and anatomist, and the greatest of physiologists; discovered the circulation of the blood, which he announced to his pupils in 1619.

HEDIN, SVEN (1865-). Swedish explorer; has made extensive explorations and discoveries in Asia, particularly in Turkestan, Bokhara, Pamir, and Tibet.

HELM'HOLTZ, HERMANN LUDWIG FERDINAND VON (1821-1894). A German physicist. His work has been chiefly in acoustics and optics; wrote *Conservation of Force*, *Sensations of Tone*; proposed the generally accepted theory of color; invented the ophthalmoscope and other useful physical apparatus.

HEL'MONT, JAN BAPTISTA VAN (1577-1644). A celebrated Belgian chemist who made a special study of gases. He applied the term gas to water vapor and other elastic fluids to distinguish them from air; first used the melting-point of ice and the boiling-point of water as limits of a thermometric scale.

HERSCHEL, CAROLINE LUCRETIA (1750-1848). A German-English astronomer; sister of Sir William Herschel; made important observations of her own, which were published, including a *Catalogue of Stars* containing 561 omitted in the British list.

HERSCHEL, SIR JOHN FREDERICK WILLIAM (1792-1871). English astronomer and chemist; only son of the eminent Sir William Herschel. He conducted his astronomical observations as had his father, discovering 525 nebulae and double stars, thereby making in all between three and four thousand.

HERSCHEL, SIR WILLIAM (1738-1822). A distinguished astronomer; born at Hanover, Germany; went to England in 1757, and held several appointments as an organist; gave his leisure time to the study of astronomy; discovered the planet Uranus in 1781 (which he called *Georgium sidus* in honor of George III.); discovered also the six satellites of Uranus, and drew up a catalogue of 5,000 heavenly bodies or clusters of them.

HERTZ, HEINRICH RUDOLF (1857-1894). German physicist; professor of physics at Karlsruhe, where he made his remarkable experiments with electromagnetic waves, showing their reflection, refraction, diffraction, and polarization, which facts have since been developed into wireless telegraphy.

HIPPARCHUS (flourished 161-126 B. C.). A Greek astronomer and mathematician. He was the founder of scientific astronomy and trigonometry; computed a table of chords; discovered the precession of the equinoxes; invented the astrolabe; and made a catalogue of 1,000 stars, which Ptolemy incorporated in the *Almagest*.

HIPPOC'RATES (460?-377? B. C.). The greatest physician of ancient times, usually designated the "Father of Medicine"; born in the island of Cos. Among his authentic writings are *Prognosis*; *On Epidemics*; *On Diet in Acute Diseases*; *On Air, Water, and Place*; *On Wounds of the Head*. He was distinguished for his remarkable skill in diagnosis, and his accurate and vivid description of morbid symptoms. His works were early translated into Arabic.

HITCHCOCK, EDWARD (1793-1864). An American geologist. Was instrumental in popularizing the science of geology in the United States. While acting as state geologist of Massachusetts he conducted the first geological survey of importance, the results being published by the state.

HOOKER, SIR JOSEPH DALTON (1817-). Noted British botanist and traveler. He made trips to the Antarctic regions, the Himalayas, Great Atlas Mountains in Morocco, Palestine, Syria, and California, returning each time with thousands of plants which he later classified. *Genera Plantarum* is his greatest work.

HOWARD, LELAND OSSIAN (1857-). An American entomologist; born at Rockford, Ill.; chief of the entomology service in the Department of Agriculture (1894); wrote *Mosquitoes* and *The Insect Book*.

HUMBOLDT, ALEXANDER, BARON VON (1769-1859). German naturalist and traveler; contributed to almost every branch of science. His *Kosmos* (1845-1859), a work explaining the physical universe, is his greatest achievement, while his *Voyage aux Regions équinoxiales du Nouveau Continent* embodies his researches in the New World.

HUXLEY, THOMAS HENRY (1825-1895). English scientist and comparative anatomist. As a result of four years of research in natural science he published a work *On the Anatomy and the Affinity of the Medusae*. When Darwin's *Origin of Species* was published (1859), Huxley became a zealous advocate of evolution. His masterly work, *Man's Place in Nature*, was based upon the new doctrine.

HUYGENS, CHRISTIAN (1629-1695). A famous Dutch physicist, astronomer, and mathematician; the author of notable researches on the polarization, reflection, and refraction of light. He invented an apparatus for the application of the pendulum to clocks and by its use to determine the acceleration of gravity. He made powerful telescopes which enabled him to discover the ring of Saturn and its fourth satellite.

HYATT, ALPHEUS (1838-1902). An American naturalist; born at Washington, D. C.; professor of zoölogy and paleontology at the Massachusetts Institute of Technology and at Boston University (1881). In the field of invertebrate paleontology his work was masterly and his writings voluminous.

INGERSOLL, ERNEST (1852-). An American naturalist; a pupil of Louis Agassiz; naturalist on the Hayden Survey (1874 and 1877); worked on the United States Fish Commission; lecturer on zoölogy at the University of Chicago (1901); wrote *Nests and Eggs of North American Birds*, etc.

JENNER, EDWARD (1749-1823). English physician. After much experimental study of vaccine lymph as a preventive of smallpox, he succeeded in convincing medical men of the value of the lymph for that purpose so that vaccination has become universal.

JORDAN, DAVID STARR (1851-). An American educator and naturalist; born at Gainesville, N. Y.; studied fishes under Agassiz and became one of the foremost ichthyologists; wrote *A Manual of Vertebrate Animals of the Northern United States, North and Middle America, Food and Game Fishes of North America*. President Leland Stanford Jr. University.

JOULE, JAMES PRESCOTT (1818-1889). English physicist; discovered (1843) the mechanical equivalent of heat. The practical electric unit of energy or work was named after him.

KELVIN, WILLIAM THOMSON, LORD (1824-1907). English scientist and inventor, professor of natural philosophy in the University of Glasgow (1846-1899); electrical engineer for the Atlantic cables of 1857-1858, 1865-1866, making many improvements in signaling apparatus, and also exceedingly valuable theoretical observations. In addition, his many inventions include the mirror galvanometer, siphon recorder, many pieces of electrical apparatus and methods for measurement, an improved form of mariners' compass, a deep-sea sounding apparatus, and a method of arriving at an absolute scale of temperature. Lord Kelvin has also made notable discoveries in the mathematical theories of electricity, heat, elasticity, vortex-motion, magnetism, and has written much on scientific subjects.

KEPLER, JOHN (1571-1630). Illustrious German astronomer; by his long study of the motions of Mars he was led to the discovery of the planetary laws known as Kepler's laws, and by their means we are enabled to tell the place of any planet in its orbit at any time, past or present.

LACEPEDE (*lah-say-pad'*), **BERNARD DE LA VILLE, COUNT DE** (1756-1825). A French naturalist. Besides continuing Buffon's *Natural History* at Buffon's own request, he wrote *Natural History of Reptiles*, which was for years the standard work upon the subject.

LAENNEC, RENE THEOPHILE HYACINTHE (1781-1826). French physician, inventor of the stethoscope. His important *Traité de l'auscultation médiate* has greatly influenced the art of diagnosis.

LAGRANGE, JOSEPH LOUIS (1736-1812). A great French mathematician. By his completion of the calculus of variations he established for himself a firm European reputation. His investigations in astronomy are also of value. Of his works the *Mécanique Analytique* (1788) is his masterpiece.

LAMARCK, JEAN BAPTISTE PIERRE ANTOINE DE MONET DE (1744-1829). A French zoölogist who ranked as the greatest between Linnaeus and Cuvier. He was the founder of organic evolution and of invertebrate paleontology.

LAPLACE (*lah-plahs'*), **PIERRE SIMON, MARQUIS DE** (1749-1827). A celebrated French mathematician who attained a position among mathematicians and astronomers almost equal to Newton's. His *Three Laws* demonstrated the stability of the solar system. He published many treatises on lunar and planetary problems, and a nebular hypothesis.

LAVOISIER (*lah-vwaw-zeay'*), **ANTOINE LAURENT** (1743-1794). French chemist; founder of modern chemistry; guillotined by French revolutionary tribunal. Lavoisier established the law of the conservation of mass; made important discoveries in chemical union; and devised a system of rational nomenclature.

LEIBNITZ (*libe'nits*), **GOTTFRIED WILHELM FREIHERR VON** (1646-1716). One of the most celebrated scholars and philosophers that Germany has ever produced. Authorities seem generally agreed that he discovered the differential calculus independent of any knowledge of Newton's method of fluxions. He was eminent in history, divinity, philosophy, political science, experimental science, mathematics, mining, engineering, and literature.

LEIDY, JOSEPH (1823-1891). American naturalist; born at Philadelphia. Contributed much to natural science, particularly in paleontology. In 1864 he discovered that the parasite *Trichina spiralis* is introduced into the human system in raw or imperfectly cooked pork.

LEVERRIER (*lay-vair-re-ai'*), **URBAIN JEAN JOSEPH** (1811-1877). A French astronomer; distinguished in chemistry before he devoted himself to astronomy: rose to eminence in the latter science by a paper on the variations in the orbits of the planets and *Tables de Mercure*; discovered Neptune.

LIEBIG (*lee'big*), **JUSTUS, BARON VON** (1803-1873). A German chemist; one of the first to apply chemical analysis to the phenomena of organic life. His *Chemistry in its Application to Agriculture and Physiology* and *Researches on the Chemistry of Food* show how he has applied the teachings of science to practical utilities.

LINNE (*lin'neh*), **KARL VON,** or **LINNAEUS** (1707-1778). The greatest botanist of his time; born in Rashult, Sweden. He was the originator of the modern system of naming plants and animals; wrote *Flora Lapponica, Systema Naturae, Fundamenta Botanica, Bibliotheca Botanica, Critica Botanica, Genera Plantarum, Classes Plantarum, Philosophia Botanica*, and *Species Plantarum*.

LISTER, SIR JOSEPH, BARON (1827-). An English surgeon. In addition to important observations on the coagulation of the blood, the early stages of inflammation, and other matters, his great work is known as the antiseptic system of surgery. He was made baronet in 1883 and a peer, as Lord Kinnear, in 1897; wrote largely on antiseptic treatment and the germ theory of putrefaction.

LIVINGSTONE, DAVID (1813-1873). An African explorer; discovered Lake Ngami in 1849; explored Zambesi river and discovered Victoria Falls in 1856; wrote *Missionary Travels and Researches in South Africa*, and *The Zambesi and its Tributaries*.

LOCKYER, SIR JOSEPH NORMAN (1836-). An English astronomer and physicist; carried on valuable experiments with the spectroscope on the chemistry of the sun and observations on solar protuberances, and advanced the theory of the relation between sunspots and rainfall.

LODGE, SIR OLIVER JOSEPH (1851-). English physicist. Made valuable investigations and experiments in the field of electricity, and substantially advanced wireless telegraphy. His *Lightning Conductors and Lightning Guards* is an important work on those subjects.

LUBBOCK, SIR JOHN, LORD AVEBURY (1834-). An English naturalist, anthropologist, and publicist; active in public life, but best remembered by his work in science, in anthropology and entomology.

LYELL, SIR CHARLES (1797-1875). A British geologist. In his *Antiquity of Man* he summarized the evidence in favor of the theory that the race of man was much older than was currently believed. Lyell has been called the founder of modern geology. His *Principles of Geology* taught the continuity of the earth, and ranks with the *Origin of Species* as an epoch-making work.

MALPIGHI (*mal-pe'gee*), **MARCELLO** (1628-1694). An Italian anatomist; noted for his important discoveries of the structure of the kidneys, lungs, skin, and spleen, giving his name to various parts of such.

MARGGRAF, ANDRE (1709-1782). German chemist. He added alumina and magnesia to the then known earths—lime and silica—and was the first to extract sugar from beet root.

MARSH, OTHNIEL CHARLES (1831-1899). American zoölogist and paleontologist; born at Lockport, N. Y. Made many important discoveries of fossil vertebrates, and traced the phylogeny of the horse. Left to Yale University his valuable collection of fossil vertebrates.

MAXWELL, JAMES CLERK (1831-1879). Scottish physicist. His chief researches were into the kinetic theory of gases, the composition and vision of color, and electricity. In the last "he connected the theory of electricity and magnetism, and proved the oneness of the disturbances of the ether caused electrically and by light." Invented the Maxwell discs and color-box.

MENDELEEF, DIMITRI IVANOVITCH (1834-1907). A great Russian chemist. He promulgated the theory of the Periodic Law of the elements, known as Mendeleef's Law, by which he was able to foretell the existence, atomic weights, and other properties of elements not then known, but which have since been discovered.

MESMER, FRIEDRICH ANTON (1733-1815). A German physician; the founder of animal magnetism, called mesmerism after him.

MICHELSON, ALBERT ABRAHAM (1852-). American physicist. His measurements of the velocity of light are considered the most accurate. By the invention of an interferential refractometer, he was able to determine linear distances in terms of the wave length of light. At Sèvres, France (1892-1893), with Professor Benoit, he determined the length of the international prototype meter in terms of the wave length of cadmium light. One of his recent inventions is the échelon spectroscope. Awarded Nobel Prize (1907).

MILLER, HUGH (1802-1856). A Scotch journalist and geologist; self-taught; began life as a stone mason; editor of the *Witness* newspaper from 1840, with the exception of one year, till his death; wrote *The Old Red Sandstone, Footprints of the Creator,* and the *Testimony of the Rocks,* besides being the author of an account of his life, *My Schools and Schoolmasters.*

MITCHELL, MARIA (1818-1899). American astronomer; studied particularly comets and nebulae; discovered a new comet (1847); professor of astronomy at Vassar (1865-1888).

MITSCHERLICH, EILHARD (1794-1863). German chemist. He discovered the laws of isomorphism and diomorphism in accordance with which the crystalline forms of certain substances are governed.

MIVART, ST. GEORGE JACKSON (1827-1900). An English naturalist and zoölogist; a Roman Catholic professor at Louvain, Belgium; noteworthy for his opposition to Darwinism.

MOISSAN, HENRI (1852-). French chemist. By means of the electric furnace he was enabled in 1897 to isolate fluorine, which had hitherto resisted isolation; he also manufactured microscopic diamond crystals.

NANSEN, FRIDTJOF (1861-). Norwegian naturalist and Arctic explorer, the first to cross the ice cap of Greenland (1888); by going north of Asia, he reached latitude 86 degrees and 4 minutes north (1895); wrote: *The First Crossing of Greenland, Eskimo Life,* and *Farthest North.*

NAPIER, JOHN (1550-1617). A Scotch mathematician, the inventor of logarithms.

NEWCOMB, SIMON (1835-1909). A Canadian astronomer and mathematician; professor mathematics U. S. Naval Observatory, 1861; observed transit of Venus at Cape of Good Hope (1882); director of Nautical Almanac (1877-1897); professor mathematics Johns Hopkins (1894-1901); editor *American Journal of Mathematics*; officer of the Legion of Honor in France.

NEWTON, SIR ISAAC (1642-1727). English mathematician and natural philosopher; invented the direct "method of fluxions," and a reflecting telescope; rendered immortal by his discovery of the laws of universal gravitation and the decomposition of light.

OERSTED, HANS CHRISTIAN (1777-1851). A Danish natural philosopher; founder of the science of electro-magnetism. He announced his important discovery in *Experimenta circa Effectum Conflictus Electrici in Acum Magneticam.*

OHM, GEORG SIMON (1787-1854). German physicist; discovered the law in electricity bearing his name while studying the relative conductivity of metals. The name "ohm" was established for the unit of electrical resistance in 1881, by the Paris Congress of Physicists.

OSBORN, HENRY FAIRFIELD (1857-). American paleontologist and geologist, professor zoölogy at Columbia since 1890; president American Museum Natural History, New York, to which he has made valuable contributions; author *Evolution and Heredity, From the Greeks to Darwin,* and many scientific papers.

OWEN, SIR RICHARD (1804-1892). English zoölogist; the first to make clear the distinction between homology and analogy, from the first of which he deducted a doctrine of "archetypes."

PACKARD, ALPHEUS SPRING (1839-1905). An American naturalist; best known as an entomologist. His classification of insects has been widely accepted. He studied under Agassiz at the Lawrence Scientific School; curator and, later, director of the Peabody Academy of Sciences, Salem (1867-1878); entomologist of Massachusetts (1871-1873); professor of zoölogy and geology at Brown University (1878), wrote *Guide to the Study of Insects, etc.*

PALLAS, PETER SIMON (1741-1811). German-Russian naturalist. Specimens gathered by him during six years of travel in Siberia formed the nucleus of the museum of the Academy of St. Petersburg. His important works include *Elenchus zoophytorum* and *Flora Russica.*

PASTEUR, LOUIS (1822-1895). A celebrated French scientist. He contributed results of investigations of the highest importance to nearly every branch of science; but it is with processes of fermentation and putrefaction that his name is inseparably connected. In the germ theory and the treatment of hydrophobia his results are best known.

PEARY, ROBERT EDWIN (1856-). American Arctic explorer and naval engineer; has made many trips to the Arctic regions; established the insularity of Greenland; discovered the noted Eskimo meteorites; reached latitude 87 degrees 6 minutes, only 200 miles from the pole (1906); a new expedition in 1908; reached the pole April 6, 1909.

PINCHOT, GIFFORD (1865-). American forester, member National Forestry Commission, and chief of U. S. Forestry Service (1898-1910); has made valuable contributions on the preservation of forests.

PRIESTLEY, JOSEPH (1733-1804). English clergyman and scientist; born in Yorkshire. Chemistry was unborn but he became interested in the production of carbonic acid, and succeeded in forcing it into water; discovered oxygen (1774) and other gases which gave him his scientific reputation.

PRZEVALSKI, NIKOLAI MIKHAILOVITCH (1839-1888). Russian explorer and naturalist; made extensive explorations in eastern Siberia and Mongolia, where he discovered a true species of wild horse.

PTOLEMY (*tol'e-mee*) **(CLAUDIUS PTOLEMAEUS)** (flourished about 150). Ancient astronomer and geographer; born in Egypt; was the author of the system of astronomy called after him. His works on astronomy (*Almagest*) and geography were the text-books of the world on these subjects until the time of Copernicus and the maritime discoveries of the fifteenth century.

PUPIN, MICHAEL IDVORSKY (1858-). Hungarian physicist; professor of electro-mechanics at Columbia since 1889; has made numerous researches and discoveries in electricity.

PURKYNIE (or **PURKYNE**), **JOHANNES** (1787-1869). Bohemian physiologist. He was the first to make use of the term "protoplasm."

RAMSAY, SIR WILLIAM (1852-). English chemist; the leading exponent of physical chemistry in Great Britain. In 1894, jointly with Rayleigh, he discovered the element argon. He has since isolated xenon, krypton, and neon—three more gaseous elements—and more recently discovered that radium in its apparent disintegration evolves helium.

RAY or **WRAY, JOHN** (1627-1705). An English naturalist; zoölogical works and attempts at classification of animals and plants are considered by Cuvier as the foundation of modern zoölogy.

RAYLEIGH, JOHN WILLIAM STRUTT, THIRD BARON (1842-). English physicist. His most important contributions to science have been his evaluation of the fundamental electrical units; and more especially his determination of the densities of gases that led to the discovery of argon (see RAMSAY above). In 1904 he was awarded the Nobel Prize for physics.

REAUMUR (*ray-ow'mur*), **RENE ANTOINE FERCHAULT DE** (1683-1757). A French scientist; is best known as the inventor of the thermometer that bears his name.

REDWAY, JACQUES WARDLAW (1849-). Noted geographer; instructor in chemistry, University of California, and professor of physical geography and chemistry, California State Normal School; author of valuable works in geography, including text-books.

RETZIUS, ANDERS (1796-1860). Swedish anatomist; invented the cephalic index for comparing crania.

RITTENHOUSE, DAVID (1732-1796). An American astronomer, clock and mathematical instrument maker; the first to use spider lines in the focus of a transit instrument.

ROBINSON, BENJAMIN LINCOLN (1864-). American botanist; born at Bloomington, Ill.; Asa Gray professor of systematic botany and curator of Gray herbarium, Harvard; editor *Gray's New Manual of Botany,* 7th Edition.

ROENTGEN, WILLIAM CONRAD (1845-). German physicist; discovered the "X" or Roentgen rays by means of which photographs may be taken through opaque substances.

ROSCOE, SIR HENRY ENFIELD (1833-). English chemist; professor of chemistry in Owens College, Manchester (1858-1887); with Schorlemmer wrote the exhaustive *Treatise of Chemistry* in 8 volumes. He was among the first to make exact measurements of the chemical action of light.

RUMFORD, BENJAMIN THOMPSON, COUNT (1753-1814). An American scientist; discovered the principle upon which chimneys and fireplaces are now constructed; established the fact that heat is a form of motion; wrote largely on economics, physics, meteorology, and chemistry.

SCHEELE, CARL WILHELM (1742-1786). A Swedish chemist; made numerous important discoveries and published many chemical papers; discovered tartaric acid (1770), chlorin (1774), baryta (1774), oxygen (1774), and glycerin (1784); formed the arsenite of copper known as Scheele's green; and separated hydrocyanic acid (1782).

SCHLEIDEN, MATTHIAS JAKOB (1804-1881). German botanist. Made valuable contributions to the cell theory in botany.

SCHWANN, THEODOR (1810-1882). German histologist; born at Neuss; discovered pepsin; founded the modern cellular theory (1839).

SHACKLETON, ERNEST H. (1873-). English naval officer and explorer; discovered the south magnetic pole, lat. 72 degrees 25 minutes S., long. 154 degrees E.; ascended Mt. Erebus 13,100 feet; on January 9, 1909, by sledges over ice at an elevation of above 10,000 feet, reached lat. 88 degrees 23 minutes, only 97 geographical miles or 111 common miles from the South Pole—the nearest approach yet made to that pole.

SHALER, NATHANIEL SOUTHGATE (1841-1906). An American geologist; author of *Nature and Man in America*, *The Interpretation of Nature*, and many other notable works.

SILLIMAN, BENJAMIN (1816-1885). An American chemist. He was graduated at Yale in 1837, and became professor of chemistry in the School of Applied Chemistry (now Sheffield Scientific School); delivered the first series of lectures on agricultural chemistry given in the United States.

SMITH, WILLIAM (1769-1839). English geologist. His reputation rests upon his theory of the stratification of rocks. The first published geological maps of England were prepared by him.

SMITHSON, JAMES (1765-1829). An English philanthropist; was graduated at Oxford. In 1835 his property, amounting to $515,169, came into the possession of the United States government, having been bequeathed by him "for the purpose of founding an institution at Washington, D. C., to be called the Smithsonian Institution, for the increase and diffusion of knowledge among men."

SPEKE, JOHN HANNING (1827-1864). An English explorer of Africa; discovered Lake Nyanza in 1858, and in 1862 discovered that it is the source of the Nile.

STANLEY, SIR HENRY MORTON (1841-1904). African explorer; sent out in 1869 by the New York *Herald* to search for David Livingstone, whom he found at Lake Tanganyika in 1871; continued the exploration of Africa; crossed the continent from east to west, followed the Congo river to its mouth; founded the Congo Free State; wrote *How I Found Livingstone*, and *In Darkest Africa*.

TESLA, NIKOLA (1857-). An electrician. Born and educated in Hungary, son of a Greek clergyman and Georgina Mandic, an inventor; resident of New York since 1884; has made many electrical discoveries and inventions, among which is the Tesla induction coil.

THENARD, LOUIS JACQUES, BARON (1777-1857). French chemist; made the discovery of the peroxid and the persulphid of hydrogen, of boron, hydrofluoric acid, and fluorid of boron.

THOMSON, JOSEPH JOHN (1856-). English physicist, to whom is largely due the development of the modern ionic theory of electricity, the electrical theory of inertia of matter, and the theoretical and experimental discussion of radio-activity.

TORRICELLI (*tor-ri-chel'li*), **EVANGELISTA** (1608-1647). An Italian physicist, pupil of Galileo; invented the barometer; improved the telescope; and was the first to construct a simple microscope.

TYNDALL, JOHN (1820-1893). English physicist, who by his lectures did much to popularize science. His treatises on light and sound, and on radiant heat and its action on gases, are the result of his original researches; his work on the motion of glaciers was published in conjunction with Huxley.

VOLTA, ALESSANDRO, COMTE (1745-1827). An eminent Italian physicist; inventor of the voltaic pile, the first electric cell or battery, the electrophorus, the condensing electroscope, the electrometer, the hydrogen lamp, and the electric pistol.

WALLACE, ALFRED RUSSELL (1822-). English naturalist; his observations of animal life led him to publish *Speculations on the Origin of Species* in 1855; influenced like Darwin by reading Malthus's *Essay on Population*, he wrote, in 1859, *On the Tendencies of Varieties to Depart Indefinitely from the Original Type*, which was published simultaneously with Darwin's *Origin of Species*.

WEBER, WILHELM (1804-1891). German physicist; introduced the absolute system of electrical units; proposed and defined the terms, volt, ampère, coulomb, and farad.

WEISMANN (*vyse'mahn*), **AUGUST** (1834-). A German biologist; leader of the Neo-Darwinian school of evolutionists. The "all sufficiency of natural selection" is the keynote of his teaching in regard to the problems of heredity; he expanded the idea of the continuity of the germ-plasm, and propounded a theory of germinal selection.

WELLMAN, WALTER (1858-). Journalist and explorer; located Columbus's first landing place; led two polar expeditions, to 81 and 82 degrees north; (1906, 1908) attempted polar expeditions by airship.

WELSBACH, CARL AUER VON (1859-). Viennese chemist. In 1885 he discovered neodymium and praseodymium, and invented the mantle of metallic oxids for use with the ordinary Bunsen gas-burner.

WHITE, GILBERT (1720-1793). An English clergyman and naturalist. His principal work, *The Natural History of Selborne*, a model of its kind, is of enduring interest. It deals with a great variety of phenomena that came under the author's notice, and is in the form of letters.

WHITMAN, CHARLES OTIS (1842-). American zoölogist; professor of zoölogy in University of Chicago since 1902; editor of the *Journal of Morphology*; director of the Marine Biological Laboratory at Woods Hole, Mass.; has made important researches in embryology and morphology.

WILEY, HARVEY WASHINGTON (1847-). American chemist; chief of bureau of chemistry, U. S. Department of Agriculture, since 1883; professor agricultural chemistry, Columbia, since 1895; author of works on agricultural chemistry.

WILLISTON, SAMUEL WENDELL (1852-). American paleontologist and zoölogist; professor anatomy Yale (1886-1890); professor geology and anatomy University of Kansas (1890-1902); professor of paleontology at University of Chicago since 1902; author of *North American Diptera*, and many scientific papers, particularly upon mesozoic reptiles.

WILSON, ALEXANDER (1766-1813). A Scottish-American ornithologist. By association with William Bartram he became interested in ornithology; published his *American Ornithology*, himself drawing the faithful pictures. In 1814 it was completed in nine volumes. It was issued in two volumes after his death and, with a continuation by C. L. Bonaparte, in four volumes in 1833.

WINCHELL, ALEXANDER (1824-1891). An American geologist. After 1879 he was professor of geology and paleontology at Michigan University. Besides scientific papers and official reports, he wrote *Sketches of Creation*, *Geology of the Stars*, *Doctrine of Evolution*, *Reconciliation of Science and Religion*, *Preadamites*, etc.

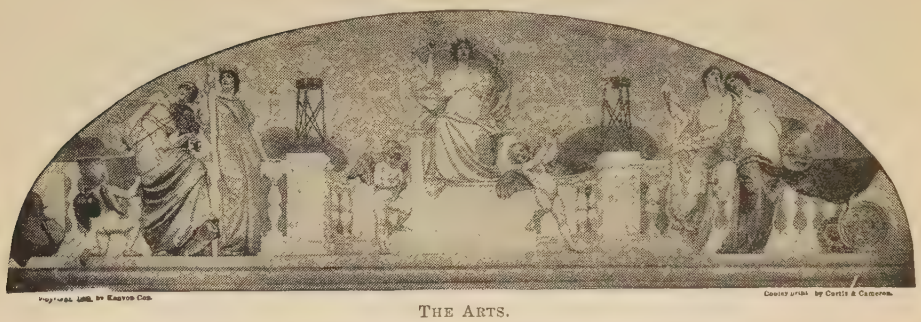
WOHLER, FRIEDRICH (1800-1882). German chemist. His far-reaching researches include those on cyanic acid, glucosids, and enzymes.

WOLLASTON, WILLIAM HYDE (1766-1828). An English chemist and physicist; invented the "camera lucida," the reflecting goniometer, an apparatus for measuring refractive power of solids; discovered palladium, rhodium, and a method of making platinum malleable.

YOUNG, CHARLES AUGUSTUS (1834-1908). American astronomer; professor of astronomy Dartmouth (1866); Princeton (1877); discovered the reversing layer in the solar atmosphere and made valuable studies in solar phenomena.

BOOK IX.

FINE ARTS.



THE ARTS.
Mural Decoration in the Congressional Library, Washington.
BY KENYON COX.

HISTORY OF DEVELOPMENT: ANCIENT, MODERN. ARCHITECTURE: ANCIENT, MODERN (ILLUSTRATED BY DESCRIPTIONS OF FAMOUS BUILDINGS). SCHOOLS OF PAINTING. BIOGRAPHICAL DICTIONARY OF FAMOUS PAINTERS, SCULPTORS, MUSICIANS, ACTORS, AND ACTRESSES. MASTERPIECES OF THE WORLD IN ART. MUSIC: SCHOOLS OF MUSIC, FAMOUS HYMNS, STORIES OF THE OPERAS. DICTIONARY OF ART AND MUSICAL TERMS.

BABYLONIAN ART AND ARCHITECTURE.

Investigations by archæologists during the last ten years have done much to make it almost certain that the earliest forms of architecture were the Babylonian. Previous to this recent information it was thought that the Egyptian was the oldest. The characteristics of Babylonian architecture are a construction almost wholly of bricks, sun-dried and kiln-baked, owing to the absence of stone and forests of wood; very thick walls and narrow vaulted interiors, owing to the small size of the bricks used; the consequent invention of the arch and vault; a massive and lofty stage or foundation upon which the building was to rest, because of the low, level nature of the land, and the lack of elevations to make the buildings loom large on the horizon; the entire absence of pillars, columns, piers or carving; the prevalence of decorations of faïence, fresco, and hangings; and artistic decoration of buildings by reliefs, glyptics, or cuttings of precious stones.

There are four well-defined periods, viz.:—

1. The pre-Sargonic era, from the earliest times to 3800 B. C.
2. The golden age of Sargon, from 3800 to 2800 B. C.
3. The age of Hammurabbi, from 2300 to 1700 B. C., the silver age.
4. The Kassite age, from 1700 to 1000 B. C.
5. The Renaissance under Nebuchadnezzar, from 600 to 500 B. C.

The royal palace unearthed by the French at Tel-lo or Shirpurla dates back to 5000 B. C., though it was restored by King Gudea. Its platform was 12 meters high, 200 meters long, and 50 meters wide. This is by no means the largest or finest of the royal palaces of Babylonia. The excavations by the Peters expedition or the University of Pennsylvania expedition, in which Professor Hilprecht has figured so prominently, has done much to increase our knowledge of Babylonian architecture. The Hanging Gardens of Babylon, which remained for so many years one of the seven wonders of the world, may well be included among the architectural wonders of Babylon. They were built by Nebuchadnezzar to please his queen Amytis; and consisted of great terraces one above the other upon which earth deep enough to support the growth of the largest trees was placed. Grass, trees, flowers, and walks made it appear as a mountain of vegetation within the city. The walls of the city, in the form of a square, are said to have been 56 miles around, and broad enough on the top for a four-horse chariot to be safely driven between the buildings and towers which occupied its inner edge. The hundred brazen gates, the wide and deep surrounding moat filled with water, and the beauty and adornment of the palaces, temples, and gardens within the gates, made the city one of the most famous of ancient times.

Tower of Babel.—The Tower of Babel is inseparably connected with Babylonian architecture. According to the account in Genesis xi. it was the result of the knowledge that the people gained who went down into the valley of Shinar and there learned the art of making buildings of clay cemented with bitumen. Much surmise is indulged in as to its exact location. Among the buildings which seem to have the greatest claim to this distinction is the great temple to Marduk in the city of Babylon, which was seven stages high and was known to the people as the house of the foundation-

stone of heaven and earth. This was the building which Nebuchadnezzar restored. Another seven stage tower opposite Babylon in Borsippa, sacred to Nebo, has claims to this distinction. Many believe that the tower of Zikkurat in the city of Babylon may have been the building the writers had in mind.

EGYPTIAN ART AND ARCHITECTURE.

The history of Egyptian art may be broadly divided into three main periods—the Ancient or Pagan, the Christian or Coptic, and the Mohammedan.

The Ancient or Pagan Period extends from the First Dynasty (about 4500 B. C.) to the time of the Roman Empire. The monuments of the first six dynasties were marvelous feats of engineering, but with a simplicity and grandeur of their own. This was an era of gigantic pyramids and mastabas. Over 100 of these ponderous tombs were erected, establishing the existence of the use of metals and a knowledge of mathematics and mechanics of no mean order, 40 centuries before Christ. The pyramids were the royal tombs of the earlier dynasties; the mastabas, built in rectangular form, were designed for persons not of royal birth. No decoration had as yet been attempted, but during the Middle Empire (from 3000 to 2100 B. C.) a great change spread over Egyptian architecture; non-sepulchral temples of a grand and imposing type first appear, and the mastabas give place to rock-cut tombs rich in design and ornamentation. Of these rock-cut sepulchers the most celebrated group is at Beni-Hassan on the Nile. The creation of a distinct order of temple architecture is most noteworthy, as not only was a model set for succeeding generations in Egypt, but likewise for the Greeks. The lintel, and not the vault, became the basis of design; quarried blocks were carefully dressed and laid; columns supporting architraves were lavishly used; while color and relief sculpture embellished the whole. The period that followed, known as the New Empire (1700 to 1100 B. C.), was the golden age of Egyptian art and architecture. The land was covered with temples and palaces of a size and grandeur never before attempted. Some of the most impressive monuments of the New Empire were the Amenopheum; the temple of Rameses III. at Medinet Abu; the mausoleum of Queen Hatsu at Deir-el-Bahari and the Ramesseum close by; the temples of Abydos, Medinet Abu, and Gurneh; the little temple of Khonsu at Karnak; and the gigantic temples of Karnak and Luxor. The colossal temple of Karnak was begun during the Middle Empire, succeeding dynasties carrying on the work till its completion in the time of Euergetes, the third of the Ptolemies. Except in matters of scale and ornament, all these monuments conformed to the same general type. The splendid achievements of the reigns of Thothmes, Amenophis, Seti, and Rameses were followed by an era of decline; and not till the time of the Macedonian conquest did architecture revive. The temples of the Ptolemaic and Roman period maintained the best traditions of Egyptian art. The majestic group of temples on the island of Philæ near the second cataract rival the splendor of the new Empire. The temples of Denderah and Edfu are still well preserved, while others of less importance may be seen at Esneh, Dakkeh, Kalabshé, and Kardassy. Of secular and military architecture there are few remains of importance. The fortresses of Semneh, Thebes, and Memphis; the fortified walls of Sān, Saïs, and Thebes; besides scattered remains of forts, granaries, and domestic buildings, bear witness to the activity of this period.

The Coptic Period.—From the third to the seventh century Egyptian art fell into decay, and did not revive till the Moslem conquest in 638. The Coptic Christians covered the land with their churches and monasteries, built in a cosmopolitan style which ignored both Egyptian tradition and Byzantine practice. Few traces of Coptic architecture remain, being swept away by the Arab invaders.

The Copts were the first to introduce into architecture the systematic employment of the pointed arch. The later Coptic churches were basilican in design, and lacking in architectural beauty.

The Mohammedan Period. — For several centuries the Moslems in Egypt followed the Coptic type. The pointed arch was used; the ceilings were of wood and richly decorated. Some of these mosques were very large. About the middle of the tenth century the vault and dome first appeared in Moslem structures in Egypt, designed by Coptic architects from Byzantine or Persian models. The dome was long confined to sepulchral edifices. The minaret also came into use about the same time, and became a feature of great elegance in Moslem architecture. The most important monuments of the Mohammedan period are in Cairo, the tomb-mosque of Kaid Bey in the Karafah (1470-1480) being one of the finest examples of this era. The mosque of Ghouri, the last of the Mamelukes, is one of the last of the strictly Arab structures. When Egypt in 1517 became a Turkish province, a Turkish style, based on Byzantine models, was adopted. The spacious mosque of Mohammed Ali in the citadel (1815-1821) is a typical example of this later style.

Sculpture.—Unlike architecture, sculptural works of importance were produced in Egypt at an earlier date than in Babylonia. The aim of the early sculptor was to make a figure as life-like as possible, so that its *ba* (spirit) and *ka* (soul) might easily recognize it after death. These sculptures were mostly deposited in tombs, and in the inner chamber of each tomb were placed several statues illustrating different periods of the individual's life, as well as several scenes in low relief vividly colored. Under the New Empire sculpture became even more pictorial, and two new forms came into use—the outline relief (*stiacciato*) and the sunken relief (*cavo-rilievo*). Wooden statues, usually of acacia and sycamore, were very popular during the earlier dynasties. Color was an essential feature of Egyptian sculpture. Colored stones, such as basalt, red granite, and diorite, were invariably used, or, when softer stones were employed, the colored effect was produced by stucco and paint. Sculpture conformed to a rigid conventionality, without regard to perspective or realism. In reliefs, the head was in profile, with the eye in front view; the shoulders full front; the trunk three quarters; the arms and hands, also the legs and feet, in profile. It seems to have been the idea of the artist to present as much as possible to the view, hence these flattened-out representations. As a makeshift for perspective

design, the Egyptians placed one row of figures above another to represent different planes. But, though lacking in this essential of art, they were lavish in details and decoration. Conventional Egyptian ornament was mainly based on flower-forms such as the lotus, as well as on the papyrus.

Side by side with the traditional sculpture peculiar to tombs and temples there grew up a secular kind, freer and bolder in design and of more varied types. Such is the famous statue of King Khafra, sitting in the conventional attitude with hands on knees. A familiar type is the seated figures of husband and wife. The celebrated Sphinx of Gizeh stands apart from any class. The Egyptian deities were usually represented in a composite form, it being customary to set an animal's head on a human body, or else the god in human form was accompanied by his particular emblem, such for instance as a cat, jackal, ibis, ram, hawk, lion, or crocodile. In its political representation Egyptian art is still more interesting. One of the commonest scenes is that of a gigantic king with cowering captives at his feet; another is that of a triumphant monarch in his chariot overwhelming his foes. These scenes throw great light on the customs and industrial arts of those early periods. Under the Ptolemies, sculpture came under the influence of Greek art.

Egyptian painting cannot be considered as a distinct art; it was chiefly an auxiliary to sculpture and architecture. The minor arts developed very early. Gold and enamel jewelry of delicate workmanship can be traced back even to the Ancient Empire. The traditional designs were applied also to furniture, ornaments, and utensils—wood, ivory, and metals being fashioned with equal skill. The distribution of these articles by Phœnician and Greek traders considerably affected the growth of European design.

Pyramids.—Colossal pyramidal tombs or cairns are a striking feature of Egyptian architecture. They are built of solid masses of stone, or of brick; and each pyramid has one or more chambers with concealed passages leading to them, while in the larger pyramids false passages were made to render desecration more difficult. The sarcophagus, or mummy case, was placed in the chamber before the superstructure was erected. The pyramids of Gizeh are nine in number, but the six small ones sink into insignificance by the side of the three great pyramids of Khufu (or Cheops), Schefren (or Khafra), and Menkaura (or Mycerinus), which were constructed from 3969 to 3784 B. C. They are accurately oriented, and that of Khufu and of Schefren are "so proportioned that the perimeter of the base closely approximates the circumference of a circle having the altitude of the pyramid for its radius." The Great Pyramid had a base of 764 feet and was 482 feet high (it is now 450). It has an unfinished subterranean chamber, from which an upward sloping passage leads to two other rooms, the larger one (the "King's") being ventilated by two air flues about nine inches square which lead off to the north and south sides of the pyramid. The King's Chamber is 19 feet 1 inch high, and 34 feet 3 inches by 17 feet 1 inch in area; the Queen's Chamber is 20 feet 3 inches high, and its area is 17 feet by 18 feet 9 inches. The pyramid of Schefren was 454 feet high on a base of 717 feet; that of Menkaura is steeper, and was 213 feet in height and 253 feet square. Each of these pyramids was originally faced with polished granite. Pyramidal sepulchers are not confined to Egypt; the tomb of Caius Cestius in Rome is in this form.

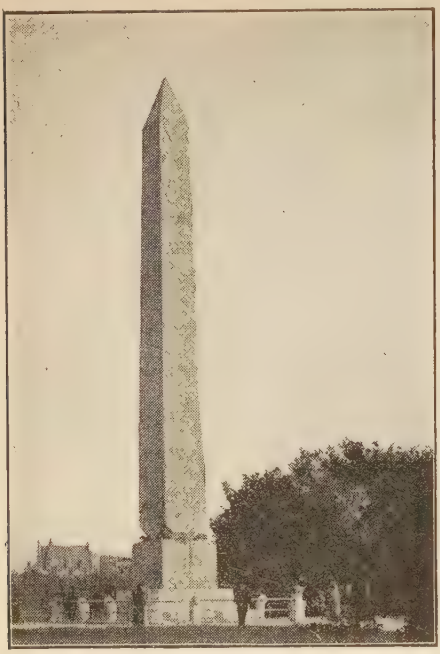
Sphinx (from the Greek *σφίγξ*, the "strangler").—In Egypt the Sphinx is generally represented as a wingless lion with a human (male) head; the Greek Sphinx on the other hand was a winged lion with a woman's head and breast. One of the earliest and most famous of these monuments is the Great Sphinx at Gizeh. It is partly cut from the solid rock and partly constructed of masonry, with a shrine built at its base. It is 172½ feet long and 66 feet in height. The name by which it is known is Horemkhu (or Hu), a word derived from Horus. The face of the Great Sphinx was orignally colored red, though few traces of the coloring now remain.

Karnak and Luxor.—Of the group of temples at Karnak, near the site of ancient Thebes, the most important was the temple of Ammon founded during the Twelfth Dynasty. It stood in an inclosure about 1,500 feet square, and an avenue of ram-headed sphinxes led from the river to the main gateway—a colossal pylon, 370 feet in breadth by 142 feet in height. Within the great court and in a line with the gateway were twelve enormous columns, six on either side; six of these are well preserved. A second pylon gate leads into a magnificent hypostyle hall, 171 feet long by 338 feet broad, its roof supported by 134 columns in 16 rows. This hall is one of the finest works of Egyptian architecture. At the upper end of the great hall is another pylon gate, now in ruins, leading to an open court, in the center of which is an obelisk 76 feet high. Beyond this again is another court in which stands the tallest obelisk in existence. There are a succession of smaller courts, corridors, pylon gates and halls. To the southwest of Karnak and on the site of Thebes stands Luxor with its famous ruins of palaces and of the temple dedicated to Ammon, Mut, and Chons, the Theban triad. Near the main gateway of the great temple stood two obelisks erected by Rameses II.; one is still there, and the other is now in the Place de la Concorde, Paris. In the great court stood six huge statues of Rameses II., three of which are still in position.

Colossus of Memnon.—On the Theban plain stand two colossal portal statues of King Amenhotep III. of the Eighteenth Dynasty. One of them, the famous "Vocal Memnon," was said to emit a sound when struck by the rays of the rising sun. This phenomenon, first mentioned by Strabo (about 20 B. C.), was probably due to the sudden expansion of the sandstone conglomerate. Greek and Roman visitors innumerable have carved their names on the sides of the statue. Hadrian and his wife, Sabina, visited it in 130 A. D. The sounds ceased in the time of the emperor Severus.

Obelisk (from the Greek *ὀβελίσκος*, diminutive of *ὀβελός*, a spit; pointed pillar).—An obelisk is a tall and tapering four-sided pillar terminating in a pyramidion, and is generally a monolith. The pyramidion was invariably capped with metal, usually gilded bronze. These monuments originated in Egypt, and were placed at the entrance of the temples and palaces, both for decorative effect and as a record of royal deeds and victories. Their sides were generally covered with hieroglyphic inscriptions deeply cut into the granite. One of the tallest obelisks is that of Queen Hat-shepsut at Karnak, which rises to 97½ feet, its diameter at the base being 8½ feet; its mass is estimated at 4,873 cubic feet and its weight at 367 tons. An obelisk of red granite, 66 feet high, still stands on the Nile, the solitary monument of the fallen city of Heliopolis. This is the oldest obelisk existing, and is said to have been erected by Usertesen I., the second king of the Twelfth Dynasty. The famous

"needles of Cleopatra" were erected originally at Heliopolis by Thothmes III. During the rule



EGYPTIAN OBELISK IN CENTRAL PARK, NEW YORK.

of the Ptolemies they were transferred to Alexandria. In 1879 one was taken to London and placed on the Thames Embankment; the other was brought to New York, in 1880, at the expense of William H. Vanderbilt, and erected in Central Park, February 22, 1881.

GREEK ART AND ARCHITECTURE.

The Greeks carried architectural art to a high degree of excellence. They made no use of the principles of the arch in their important buildings, but confined themselves to the columnar form; yet their architecture combined Egyptian massiveness with a chasteness and symmetry of design unrivaled by any other nation. As native architecture is generally influenced by available building materials, Grecian temples were originally made of wood, which largely accounts for the variety of forms found in their more permanent architecture. Stone was gradually introduced, but the traditional forms remained; the architrave represented the girder resting on the columns, and which supported the principal rafters; the triglyphs were the beam ends; the small circular ornaments in low relief, called guttæ, were the nail heads; the metope slabs filled the former intervals between the beams; the pediment was occasioned by the gable formed by the sloping roof.

The three distinct orders of architecture developed by the Greeks were the Doric, Ionic, and Corinthian. The distinctive character of the orders is chiefly shown in the column and the entablature. The Romans adopted the Grecian styles, modifying them and adding two others, viz., the Tuscan and the Composite.

The Doric Order.—This is the earliest of the Greek orders, and the one generally used in their temples. The Doric column tapered toward the top and had a strong entasis or curved profile. It had no base, but rested directly upon the *stylobate* or upper step. It had generally 20 flutings, and in height ranged from four to six times its lower diameter. The capital was plain, and consisted of (1) the annuleted necking, (2) the echinus or ovolo, whose peculiar curve is supposed to have been taken from the sea egg, and (3) the abacus, which was a square flat stone without moldings of any kind. The entablature was divided into (1) the architrave, which was either quite plain or composed of three projecting horizontal fillets; (2) the frieze, which was divided horizontally into triglyphs—vertical blocks reminiscent of the outer ends of the ceiling beams; (3) metopes, or the spaces between the triglyphs, decorated with painted ornament or relief sculptures; and (4) the cornice, which projected its own height. The Doric style was used in the greater number of Greek temples known to us, of which the Parthenon at Athens is the finest example.

The Ionic Order.—The more graceful Ionic shaft tapered less, and was longer than the Doric, being from eight and a half to ten diameters in height. It had a slighter entasis, and was ornamented by 24 elliptical flutings. The column had a base consisting of a series of hollow moldings divided by narrow fillets, below which was a larger cove between two fillets, and below this again a convex molding called a torus. The so-called Attic base was composed of an upper and lower torus between which was a scotia and two narrow fillets, and was in height one third of the thickness of the column. The capital consisted of (*a*) an ornamented neck, (*b*) two parallel scrolls or volutes occupying opposite sides and supporting (*c*) an abacus. The volutes form the distinctive feature of the Ionic capital, and a side view gives the appearance of a scroll of parchment with the rolls hanging downward on each side. The Ionic entablature consisted of (*a*) an architrave, divided vertically into three parallel and horizontal bands; (*b*) a frieze, which was continuous or unbroken (having neither triglyphs nor metopes) and ornamented by a band of painted or relief ornament; and (*c*) a molded cornice. Unlike the Dorians, who preferred moldings of simple lines decorated with severe ornament, the Ionians introduced a more refined profile and more delicate decoration. The best examples of the Ionic style were the famous Erechtheum at Athens, and the temples of Ilissus and Minerva Polias, all three of which are in ruins.

The Corinthian Order.—This order was developed later, and there are only two remaining specimens in Greece dating from pre-Roman times, viz., the choragic monument of Lysicrates at Athens, and the Tholos, or circular building, of Epidaurus in the Morea. No traces of the order are to be found in the remains of Corinth. The Corinthian was the lightest and most ornamented of the Greek orders, its most important change from the Ionic being in the different capital. The base, an elaborated copy of the Ionic, was two fifths diameters in height. The column was 10 diameters high, with flutings like the Ionic. The capital resembled an inverted bell with two rows of acanthus leaves clustered round it, above which were eight pairs of small

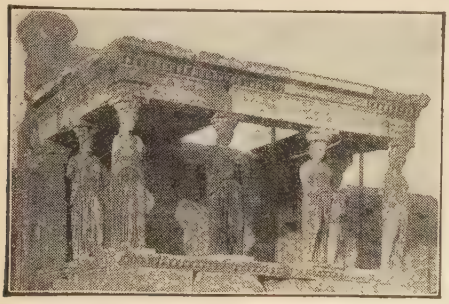
volutes, surrounded by a molded abacus with concave sides. The entablature was more elaborate than the Ionic, the architrave being divided into three horizontal fillets separated by a narrow molding from the frieze, which latter was decorated with bas-reliefs; while the cornice was both richer and more varied with the addition of volute-like mutules and modillions.

It is interesting to note that the Greeks usually blocked out their columns before erecting them, and only after the construction of the building were the channels, moldings, and the like cut. Until the adoption of marble in the fifth century, the surface of the column was thinly stuccoed.

The Romans were very partial to the Corinthian order, employing it in many of the monuments throughout their vast empire; in the palace at Spalato, in Palmyra and Baalbek, the Maison Carrée at Nîmes, and the temple of Olympian Zeus at Athens.

The three columns in the Campo Vaccina at Rome, supposed to be the remains of the temple of Jupiter Stator, are the best Roman example of the Corinthian style.

Caryatides.—A caryatid was a sculptured female figure used as a support in the place of a column or the like. Corresponding male figures were called *atlantes* or *telamones*. Instances of caryatids in Greek architecture are



Caryatid Porch of the Temple of Erechtheus at Athens.

rare, the most important remains being the portico called Pandrosium, forming part of the Erechtheum at Athens. In this example the figures take the place of columns, and support the entablature.

What we know of Greek architecture is derived from the remains of ancient temples. Unlike the Egyptians, the Greeks sacrificed the interior in order to secure a fine exterior, relying for beauty and stateliness on the columns surrounding their structures. Their temples were generally of moderate size, being shrines rather than places of worship. The sunlight streaming through the main doorway was enough for the purpose, and windows were unnecessary. Flat roofed buildings, such as the Telesterion at Eleusis, may have been lighted from the roof, but the ordinary gable-roofed temple had no such device. The Greeks, after having fixed upon the types of their architecture, never departed from them, but generation after generation went on refining and perfecting their lines; and no matter whether the temple was great or small, the change of scale did not affect the harmony or simplicity of the composition. The life and requirements of the Greeks did not call for large buildings. Even in their largest temples the chamber or cella barely exceeded 40 feet in width. Buildings for the shelter of the public were called *stoas*, long galleries or colonnades facing the street or public square, and in these also the column was the chief architectural feature.

Sculpture.—As a concrete art, sculpture attained supreme perfection at the hands of the Greeks, who developed it from the stereotyped archaism of the Egyptians to the fullest expression of human beauty. Greek art culminated during the Attic period from about 480 B. C. to 323 B. C. The influence of the palæstra and the Olympic games were considerable. An appreciation of living beauty, combined with the ease of obtaining the finest models, gave an unbounded stimulus to sculpture. Added to this was a great demand for statues of the victorious athletes. Calamis, Pythagoras of Rhegium, and Myron adorned this period of transition; but with Phidias we enter at once into the full glory of Greek art. It was an age of giant minds and giant builders. The artist sought to embody some high ideal, and uniting consummate skill with nobleness of conception, he created masterpieces for all time. Sharing with Phidias the splendor of this golden era were Polyclitus of Argos; Agoracritus of Paros; Alcamenes, the creator of the celebrated *Aphrodite in the Gardens;* Cresilas of Cydonia; and Pæonios of Mende, the sculptor of the famous flying *Niké* (Victory) at Olympia. During the succeeding age of Praxiteles and Scopas, the sculptor gave emphasis to individual traits; and portraiture, which the two great schools of Athens and Argos had idealized, became more and more realistic. Even the conception of the gods followed the general tendency, and, instead of embodying the loftiest aspirations of popular religion, the statues of the gods expressed but the varying moods of men. Scopas was the foremost among the depictors of realism, while the *Hermes* of his great contemporary, Praxiteles, shows the mastery over technique possessed by the great artists of this era.

The conquests of Alexander had let in a flood of Eastern thought and tradition, and Athens no longer maintained its old supremacy. During the Hellenistic period from 323-146 B. C., the chief centers of art were Alexandria, Pergamus, and Rhodes. The increase of wealth stimulated the patronage of art, and the taste of the purchaser determined the subject of the artist. Genre groups, and the so-called "Hellenistic reliefs," reveal a new tendency in which the human figure is no longer of first importance in the composition. In spite of this, portraiture reached a high level of excellence in technical mastery combined with elegance in conception. No artist of this period can compare with Lysippus of Sicyon, who exercised a remarkable influence over Hellenistic art. A copy of his famous bronze *Apoxyomenos* is in the Vatican.

In Alexandria, art was mainly decorative, but at Pergamus the victories of Attalus I. (241-197 B. C.) were immortalized in a series of statues of which the *Dying Gaul* is one of the best examples. The celebrated frieze, *The Battle of the Gods and Giants*, which adorns the altar at Pergamus, shows the vigor and boldness of Pergamese art. The proclivities of this school

found new expression at Rhodes and culminated in the famous Laocoön group.

The Roman period of Greek art, from 136 B. C. to 330 A. D., was one of imitation rather than of striking originality. The works of the great sculptors were freely imitated, and it is to this age we owe so many of our copies of earlier masterpieces. The school of Pasiteles was particularly noted for these reproductions.

Painting.—This art did not reach the same development in Greece as did the sister arts of sculpture and architecture. This was partly owing to a limited knowledge of pigments. Few specimens of ancient painting exist, though from the Greek vases we can follow the progress of drawing. The earliest efforts were in monochrome; then, as in Egypt, came the employment of a varied palette, but with no pretensions to perspective or to light and shade. The first creative genius who advanced the art was Polygnotus of Thasos, whose works adorned the walls of public buildings, such as the *Painted Portico* at Athens. His contemporaries, Micon and Panænus, brother of Phidias, were also famous, and lent their art to architectural decoration. Polygnotus is reputed to have produced a variety of shades from a simple palette containing only black, white, red, and yellow. He won great fame by his composition and correctness of line. The scene painter, Agatharchus of Samos (about 480 B. C.), rendered the greatest service to painting when he discovered the methods of shading and perspective; and soon afterwards there arose what is known as the Asiatic or Ionic school, whose leading exponents were the rivals Zeuxis of Heraclea and Parrhasius of Ephesus, whom tradition credits with most realistic skill. With such meager remains it is difficult to appraise the work of the ancient artists. The Etruscans were undoubtedly inspired by Greek models, and examples of their work, such as the tempera painting on the Corneto sarcophagus now in Florence, give us some indication of the beauty and power of the original. Many specimens have come down to us from the later period of Hellenistic art; the greatest number of these are from the buried cities of Pompeii and Herculaneum.

Delphi, Temple at.—The original building, said to have been designed by the architects Trophonius and Agamedes, having been destroyed, a new one dedicated to Apollo was undertaken about 548 B. C. This is supposed to have been of the Doric order without and the Ionic within. The front was of Parian marble, and the walls were richly sculptured with mythological scenes. Bronze and marble statues adorned the interior, while golden shields and kindred trophies gleamed from the architraves. In 88 B. C. the temple was plundered by the Roman general Sulla; and Nero is said to have carried away about 500 of its statues. Worship was finally abolished by the emperor Theodosius (379-395).

Parthenon.—The famous Doric temple of the goddess Athene Parthenos on the Acropolis at Athens. Its architects were Ictinus and Callicrates, and the entire work was done under the supervision of the celebrated sculptor Phidias, during the reign of Pericles (465-439 B. C.). It is 227 feet in length, 101 in breadth, and 65 in height, and was built wholly of Pentelic marble except the roof, which was of Parian marble. In the eastern end of the temple stood the colossal ivory and gold statue of Athene by Phidias. It was 39 feet high, and the value of the gold alone is estimated at about $465,000. The edifice was surrounded by columns 34 feet 3 inches in height. The sculpture on the pediments represented the birth of Athene, and the dispute between her and Poseidon for the possession of Attica; the metopes depicted the battles of the Centaurs and the Lapithae; while the great frieze showed the procession of the Panathenaea. A number of the slabs of this frieze, with 15 metopes and other sculptures, were removed by Lord Elgin in 1801 and are now in the British Museum. The artistic effect of the sculptures and architecture was heightened by the use of color and metal to throw up the details. The Parthenon was transformed into a Christian church about the beginning of the sixth century, and was dedicated first to St. Sophia and later to the Virgin. After the conquest by the Turks (1458) it became a mosque, and a minaret was constructed in the southwest corner. During the siege of Athens (1687) by the Venetians it was used as a powder magazine, and on September 26, a shell crashed through the roof and destroyed the inner portion of the temple.

Mausoleum at Halicarnassus.—This tomb—one of the seven wonders of the ancient world—was erected in 353 B. C. by Queen Artemisia in honor of her husband, Mausolus. It was the work of the sculptors Scopas, Bryaxis, Leochares, and Timotheus. It was built of white marble with Ionic columns. Its total height was 140 feet. The Knights of St. John pillaged it in 1622 to build the citadel of Budrum, and specimens of these "Budrum Marbles" were sent to the British Museum by Sir Stratford Canning (1846) and by Newton (1857).

Colossus of Rhodes.—The famous statue of Apollo at Rhodes was one of the seven wonders of the old world. It stood at the entrance of the harbor, though not bestriding it, as is often said. It is said to have been made of bronze, cast in sections, and occupied the artist 12 years. It was over 100 feet in height and was erected about 280 B. C., but was overthrown by an earthquake in 224 B. C. It remained lying till 672, when Moawyia, general of the caliph Othman IV., sold it to a Jew, who loaded its material on 900 camels.

ROMAN ART AND ARCHITECTURE.

The practical and warlike Romans adopted the art of the vanquished Etruscans and afterwards that of the conquered Greeks. From the Etruscans they acquired the principles of the arch and the vault. At first the Romans preserved the inviolability of the classic orders, retaining the ancient form of the temple with its purity and simplicity of style. But with the growth of Roman power came the necessity for more varied monuments, and architectural traditions were no longer found adequate to growing secular needs. The temple, which in Greece had been the glory of a nation's art, sank into comparative insignificance, and gave place to civic buildings in national importance and splendor of design. At the beginning of the Christian era the introduction of circular-formed structures with majestic domes enabled the Romans to erect buildings of imposing grandeur throughout their vast empire. The arch, lending itself to any scale and supporting any burden, was made the constructive basis of civic architecture. Disdaining convention, the Romans combined the arch and the order, and subordinated chasteness of design to grandeur of conception and effect. They have been blamed for this innovation, as well as for not designing an architecture of their own to harmonize with the arch. But their genius lay in successfully combining these various styles, evolving harmony out of complexity, and giving a dignity to interiors such as had never been known before. The spaciousness of their edifices was made possible by the use of concrete, which became general in the time of Augustus. The Tabularium on the Capitoline is one of the earliest examples of this combination; the Colosseum, the Basilica, and the theater of Marcellus are on a similar plan, and in all of these the Greek

orders serve as an ornamental addition to the Roman arch and vault. The Romans also employed the segments of circles in place of the Greek moldings, and carried decoration to a point of unrivaled magnificence. Such were their temples at Baalbek and Palmyra, and those of Castor and of Faustina in Rome. The richer Corinthian and Composite orders were used instead of the Doric and Ionic.

The Pantheon is the noblest work in Roman architecture, but where the Romans excelled was in their theaters and amphitheaters, their fora and basilicas, their colossal baths and sumptuous palaces. Their triumphal arches set the model for all later generations. Monuments of the Golden Age bear eloquent testimony to the splendor and might of Rome. The ruined Roman cities of Asia Minor and Africa; impressive remains in France and Rhenish Germany; world-famed ruins in Italy, such as those of Pompeii and Herculaneum, the amphitheaters at Casinum, Capua, Puteoli, and Verona, Hadrian's villa at Tivoli, the arch of Trajan at Benevento, the triumphal arches of Titus, Septimius Severus, and Constantine, the Colosseum, the Roman and Trajan Fora, the imperial baths of Titus, Trajan, Caracalla, and Diocletian, the sculptured columns of Trajan and Marcus Aurelius, the imperial palaces on the Palatine, the Tabularium, the Senate House, and the Admiralty (Neptunium), these are the chief among countless remains of a great historic past.

Tuscan Order.—This order resembles the Doric, but has fewer and bolder moldings, no triglyphs, and no ornamental details. The shaft has a simple base decorated with one torus, and is seven diameters in height. The order was derived from the Etruscans, but owing to its primitive nature it was never much favored by the Romans except for domestic buildings. In a superimposition of orders the Tuscan was used for the basement.

Composite Order.—This is mostly an ornate and elaborated copy of the Corinthian. The column is not so high; and the capital, consisting of volutes and ovolo between them, is a combination of Corinthian and Ionic styles. The entablature has a small architrave, divided into three projecting fillets; the frieze is plain, but the cornice is adorned with a number of carved moldings.

Sculpture.—In sculpture as in architecture the Romans were the inheritors of Etruscan art and Greek tradition. But the Greek incentive—the decoration of temples—was lacking, and sculpture was for a long time represented by portrait statues of Roman citizens. These statues adorned the bridges, basilicas, baths, theaters, and other edifices of Imperial Rome; while the worship of ancestors called for many statues to set up in the houses and to carry around in funeral processions. The only development which the Romans gave to the art was in the sculptured reliefs that adorned their architecture. Rome was filled with the art treasures of conquered Greece. Pasiteles, Stephanus, Menelaus, Arcesilaus, and other Greek artists flocked to the Imperial city, and found ready patronage among a luxurious people. The ideal in art rapidly disappeared from Græco-Roman sculpture, and popular taste demanded the bold, the sensual, and realistic instead. In reliefs this tendency is likewise apparent, as in the arch of Titus and the columns of Trajan and Marcus Aurelius. With the wane of Paganism Græco-Roman art declined; technique suffered too in the general dearth of creative talent. With the barbarian conquest of Italy, classical art came to an end.

Painting.—Roman painting developed on similar lines to sculpture; it was chiefly decorative and characterized by little originality. Greek models were slavishly copied both in method and technique. Mural decorations are the only extant examples of Roman painting; but we know from literature that frescoes adorned the temples, and that pictures of Roman victories were carried in triumphal processions. The general tendency toward realism is shown in the surviving mural paintings; in such, for instance, as the celebrated *Aldobrandini Marriage* and the garden scenes in Livia's *Villa ad Gallinas*.

Pantheon.—The first Pantheon ("temple to all the gods") was erected by Valerius of Ostia for M. Vipsanius Agrippa in 27 B. C. Becoming damaged or destroyed, Hadrian replaced it in 123 by the present circular edifice, which is still well preserved. The walls are of immense thickness. The rotunda is 142½ feet in internal diameter and supports a cupola which rises to a height of 142 feet. The only window is an oculus 27 feet in diameter. Since 608 the Pantheon has been a Christian church, and is known as the Church of Santa Maria Rotonda. The term Pantheon has been applied to a number of domical structures, chief of which is the Church of Sainte Geneviève at Paris, erected from 1764-1781.

Arch of Titus.—A triumphal arch on the Sacred Way in Rome, erected by Domitian (81) in commemoration of the conquest of Jerusalem. Its reliefs, representing the victory of Titus, show the Roman soldiers carrying the spoils of the temple, including the seven-branched candlestick, the table for the shewbread, and the golden trumpets. The arch was taken down and rebuilt in 1822 to insure its safety.

Pompeii and Herculaneum.—The two ruined cities of Italy which were overwhelmed by the eruptions of Vesuvius in 63 and 79. The ruins of Herculaneum were accidentally discovered about 1710, and excavations have been carried on, more or less intermittently, since 1737. As modern villages are built on the site of the ancient city, excavations can be made only by tunneling. The work of excavation at Pompeii was begun by King Charles III. of Naples in 1748, but not until 1860 was the work carried on systematically. The discoveries have thrown a flood of light on Roman art and customs. Temples, monuments, various civic buildings, statues, paintings (over 3,500 have been found in Pompeii), vases, bronze and marble tables, domestic utensils, articles of furniture and adornment, all have been discovered and mostly in a perfect state of preservation, affording a realistic picture of provincial life in the first century of the Christian era.

THE COLOSSEUM AT ROME.

Colosseum, The.—The amphitheater was designed by the Romans for exhibiting gladiatorial combats, wild beast fights, and other spectacles. The Colosseum is the largest Roman amphitheater known, and stands on the site of Nero's palace in Rome. It was begun by Vespasian in 72 and finished by

Domitian in 86. A fourth story was added by Severus Alexander (died 235) and Gordianus (died 238). It covers five acres of ground and its seating capacity is variously estimated at from 50,000 to 87,000, besides standing room for about 20,000 more. Externally the Colosseum has four stories, the three lower with arcades,—the lowest, Etruscan; the second, Ionic; the third and fourth, Corinthian—according to the general Roman usage. Its height is 157 feet. The seats were of marble, the exterior walls and the chief corridors of travertine stone, the inner walls of tufa and concrete. There were four tiers of seats, corresponding to the four stories. The arena measured 280 by 176 feet, and underneath were dens for wild beasts with appliances for hoisting them to the arena. Early Christians were frequently thrown to the wild beasts in this same amphitheater; one of the first of such martyrs being St. Ignatius, who was torn to pieces by lions. The Colosseum was chiefly destroyed in the fifteenth century, when it was being used as a quarry for marble and other building material. An end was put to the spoliation by Pope Benedict XIV. (1740-1758), who consecrated it as a monument to the Christian martyrs who had been persecuted within its walls.

Palace of the Caesars.—The term is given to the buildings on the Palatine Hill at Rome, where Augustus first erected his palace on the site of the houses of Cicero and Catiline, succeeding emperors making alterations and additions. The ruins cover an area of 1,500 feet in length and 1,300 feet in breadth. The "Golden House," added by Nero, was of imposing grandeur. It was surrounded by a triple portico a mile in extent, and supported by a thousand columns; and within this was a picturesque lake bordered with stately buildings, each representing a miniature city. A statue of Nero, 120 feet high, stood in the main vestibule.

Trajan's Column.—A famous column at Rome erected in 114 in honor of the emperor Trajan. This noble masterpiece was constructed by the architect, Apollodorus. The pedestal is covered with warlike designs in bas-relief, while a similar decoration representing the victories of Trajan form a spiral around the shaft. These are all well preserved and form a valuable record of ancient costumes. In the interior of the column a spiral staircase leads to the summit, which was originally crowned by a statue of Trajan, but this has been incongruously replaced by one of St. Peter. The height of the column is 132 feet.

Mausoleum of Hadrian.—This great structure, on the right bank of the Tiber, in Rome, was erected in 136 in memory of the emperor Hadrian. Upon a base 247 feet square was built a circular mass of masonry 230 feet in diameter. The tomb was adorned with marble statues and surrounded by a bronze railing ornamented with gilded peacocks, two of which are now in the Vatican. The reconstructed remains of the mausoleum are now known as the Castel Sant' Angelo.

Arch of Septimius Severus.—A triumphal arch in Rome at the northwest end of the Forum, erected in 203 to commemorate the conquest of the East by Septimius Severus and his sons, Caracalla and Geta. It has three direct arches and one transverse arch.

The Arch of Constantine.—A triumphal arch near the Colosseum in Rome, erected in 312 by Constantine the Great to commemorate the victory over Maxentius. There are three arches and an attic, all supported on each face by four Corinthian columns, and partly adorned by sculptures taken from earlier monuments. It was restored in 1731.

Maison Carrée.—A Roman Corinthian temple at Nîmes in southern France, and the most important Roman temple now remaining. It probably dates from the time of the Antonines. The building measures 45 by 85 feet, and stands on a platform approached by 15 steps, and is surrounded by 30 columns. It is now used as a museum.

Column of Marcus Aurelius.—A Roman-Doric marble column on a square pedestal. It is now surmounted by a statue of St. Paul which Pope Sixtus V. placed there. The original column, 123 feet high, was erected to commemorate the victories of Marcus Aurelius over the Marcomanni.

EARLY CHRISTIAN AND BYZANTINE ART AND ARCHITECTURE.

The earliest churches of which we have any record were built in the time of Constantine, who, in 313, was the first to sanction Christian buildings, and so give an impulse to Christian architecture. Unlike the pagan worship, which was chiefly in the open air, the new religion necessitated large interiors to accommodate large assemblies; hence was evolved the style known as basilican, adapted from the architecture of the Romans. This was the distinctive style of the earlier Western or Latin church, and passed from Italy northward with the spread of Christianity. After the eighth century it was gradually superseded by the Romanesque, and then by the Gothic. The basilican church consisted of three, and occasionally five, aisles, divided by columns. The middle aisle, or nave, and the side aisles were for the clergy. In large churches there was generally a transept between the nave and the apse. The upper part of the nave, called the clerestory, rose high above the side aisles. The roofs were usually flat. The interior was lighted by arched windows in the clerestory and in the walls of the aisles. Three enormous churches of this type were erected in Rome by Constantine or shortly after his death, namely, those of St. John Lateran, St. Peter, and St. Paul Without the Walls. The last named is a surviving monument, while in the desert cities of Syria and North Africa are preserved some interesting remains of this style of architecture.

In the East, Christian architecture developed into the Byzantine style, which differed from all earlier forms in its exclusive adoption of vaulted roofs, its rejection of timber, and its substitution of brick for the concrete of the Romans. The erection of the dome on pendentives was a revolution in architectural design, the rest of the structure being subordinated to this one dominant feature. The Oriental love of color was a characteristic of this style, and the interiors were resplendent with rich mosaics and ornate decorations. The most magnificent example of Byzantine architecture is the church of San Marco at Venice, which combines an Eastern grandeur with an idealism suggestive of Greek art at its noblest. The first church in which this order was perfected was St. Sophia's at Byzantium, the old name of Constantinople. It still is the distinctive style of the Eastern church, and is prevalent in Russia, the Balkan States, and Asia Minor; from there it spread to Italy dominating Venice, Ravenna, and the South. Though a number of ecclesiastical monuments still remain, few secular examples are in existence; of these the oldest Venetian palaces are thoroughly representative of Byzantine art. The iconoclasm that characterized the sixth, seventh, and eighth centuries of the Christian era had a calamitous effect on Byzantine art, especially sculpture and painting; hence few remains have come down to us.

The most notable examples of Byzantine figured sculpture are the colossal bronze statue (now in Naples) of the Eastern emperor, from Barletta, the Madonna in the cathedral at Ravenna, the reliefs of Christ at the Eski-Diuma mosque in Constantinople, and certain reliefs at the Mount Athos monasteries.

Byzantine fresco paintings were famous and exercised an influence over Christian art till the time of the Renaissance. The finest examples of these paintings in the East were swept away as a result of Christian iconoclasm or Mohammedan vandalism. The West, however, furnished numerous specimens, especially of the iconographic era. When fresco painting was revived in the thirteenth century it was the Byzantines who taught the artists of Italy. But the fourteenth century saw the emancipation of Western art as well as the decline of Eastern painting.

Mosaic, particularly glass mosaic, was a Byzantine art, and was much used for the ornamentation of churches. Other arts successfully cultivated were enameling, ivory carving, and miniature painting.

Alhambra.—The great fortress and palace of the Moorish kings of Granada, Spain. It is built upon a hill overlooking Granada, Spain. Within massive walls, surmounted by square towers, are the citadel and palace surrounded by beautiful gardens. It is the finest existing example of Moorish art; built of marble and alabaster, and ornamented with fretwork and delicate arabesques. The ceilings are of cedar, inlaid with mother-of-pearl, silver, and ivory. The Hall of the Lions is so named from the 12 marble lions which support the fountain. The Hall of the Abencerrages is also noted.

Catacombs.—The group of subterranean vaults and labyrinths on the Via Appia near Rome are practically the only Christian remains of the first three centuries. It is believed these underground chambers were the meeting places of the early Christians in times of persecution, as well as their burial place. The Roman catacombs consist of long, narrow galleries and chambers cut out of the soft tufa. Some are near the surface, but beneath these are other stories to a depth of seventy feet. Though the superficial area of these catacombs is little over 600 acres, it is estimated that if the galleries could be arranged in a continuous line they would stretch a distance of 545 miles. Niches or ledges were cut out of the rocky sides to form a resting place for a corpse, each niche being closed with a marble or terra-cotta slab on which was inscribed the name of the deceased. The catacombs at Naples are similar to those at Rome, and are covered with Christian symbols as well as relics of pagan art. Many of the frescoes at Naples are distinctly classical in design, while, in the catacomb of St. Praetextatus, Hermes is represented as the conductor of the dead. The frescoes are for the most part devoted to Scriptural subjects. Similar catacombs have been discovered at Palermo, Syracuse, and Chiusi, as well as in Greece, Asia Minor, Syria, Egypt, Peru, and elsewhere.

Church of St. Sophia.—The original church of St. Sophia was built at Constantinople in the days of Constantine, and dedicated to *Sancta Sophia* or "Divine Wisdom." It was twice destroyed and the present edifice, which marks the zenith of Byzantine architecture, was begun by the emperor Justinian in 532, and dedicated 537. The interior of the church forms a Greek cross, and in the center rises a spacious dome to a height of 175 feet. The dome on pendentives, that is, supported on four arches bounding a squared space, was the masterly conception of the architect Anthemius, who wished to combine in one edifice the Roman basilica with its nave and side aisles, and the rotunda as illustrated in the church of St. Sergius in Constantinople. The world was ransacked for materials, and pagan temples were robbed of their marble and porphyry that the new church might lack nothing in intrinsic costliness. Rich mosaics and columns gave an appearance of unprecedented magnificence. The building is approached by a double porch, about 100 feet in depth. On the capture of the city by the Turks in 1453, the church was transformed into a mosque. It was renovated in 1847-1849.

Cordova Cathedral.—One of the finest existing specimens of Moorish architecture; begun in 785 by Abd-er-Rahman I. After the capture of Cordova (1236) it became a Christian church. The roof is supported by 1,000 columns of porphyry, jasper, and vari-colored marbles. The interior is enriched with arabesques and bas-reliefs, and was once lighted by 800 silver lamps.

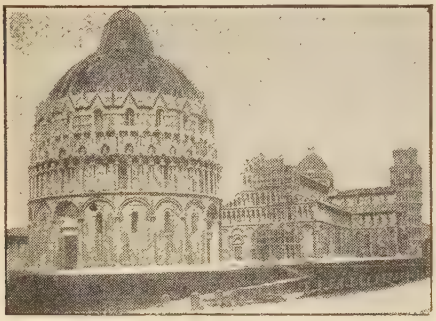
St. Mark's at Venice.—The church of San Marco, modeled on its prototype, St. Sophia, is the most magnificent example of polychromatic architecture in the world. It was built in 830 to receive the relics of the apostle Mark, the patron saint of Venice, and rebuilt in 976 after a conflagration. From the eleventh to the fifteenth centuries a number of alterations were made till it assumed its present form. The church is cruciform with five massive domes on pendentives and several smaller domes in subordinate positions. The four famous bronze horses set above the central porch originally came from Constantinople. The interior of the church, with its soft dim light, its richness and harmony of detail, its idealistic designs and the consummate blending of various styles, is one of the most impressive in Europe. The description of St. Mark's in *The Stones of Venice* by Ruskin will be remembered by all lovers of art.

Saint Mark's at Venice.

ROMANESQUE ART AND ARCHITECTURE.

A term generally applied to art and architecture in Europe from about 800 to 1200, before the division into nations was completed. Several schools are distinguished, such as the Lombard in northern Italy, the Rhenish in Germany, the Saxon and Norman in England, and the Provençal and Norman in France. In architecture these schools may all be divided into two groups: the unvaulted and the vaulted. The vaulted style came into use about 1000 and prepared the way for the Gothic. The more noticeable features of the Romanesque are the use of heavy walls to support the vaults, which took the place of the wooden ceiling and roof; decoration of doors and windows with moldings, carving, and sculptures; a higher and narrower nave; and the use of heavy piers in place of columns. The ground plan was in the form of a Latin cross. The substitution of vaulted roofs gave architects a problem which was not solved until the introduction of the Gothic. The bell tower was one of the most marked innovations of the Romanesque. The chief examples of Romanesque architecture are to be seen in the cathedrals of Treves and Worms in Germany; in parts of Winchester cathedral, and in the vaulted roof of Durham cathedral in England; in the cathedrals of Angoulême, Angers, and Poitiers, and of St. Front at Périgueux in France; but the most noted example of all is the cathedral of Pisa (built between 1063 and 1118), with its baptistery and leaning tower.

Romanesque sculpture mostly followed the models of the early Christian and Byzantine period, and was extensively introduced into the scheme of architectural decoration. At St. Mark's in Venice the sculptures of the main doorway and the angels under the dome are Romanesque in style. Mural painting received its chief encouragement from the churches, more especially in Germany; while contemporary pictorial art in Italy found its expression chiefly in mosaics.



Baptistery, Cathedral, and Leaning Tower of Pisa.

Leaning Tower of Pisa.—A campanile, or bell-tower, begun in 1174. It is a round tower, 180 feet high, and 50 feet in diameter. It leans 13 feet from the perpendicular, owing to the sinking of the foundation on one side. It consists of eight stories and is ascended by 330 steps. There are seven bells in the tower.

GOTHIC ART AND ARCHITECTURE.

It is said that the term Gothic was first applied to this style of architecture by Raphael in a report to Leo X. concerning some projected building in Rome. It was meant to convey the idea of barbarous as opposed to Roman. The name is misleading, for the style did not originate in Germany, as the name Gothic implies, but in France. Some have tried to substitute "Pointed Architecture," but that is insufficient, for the use of the pointed window is only an incident and not a fundamental characteristic. Others have used the term "French Art," but to convey the exact idea one must add "of the last third of the Middle Ages," which makes an unwieldy name. It seems therefore that the error must be perpetuated. The strongest impressions which a Gothic building conveys are those of height and lightness. Such a building seems to be made up of windows, rose-windows, pinnacles, and lace-like traceries of stone. Vertical lines and pointed arches abound. The flying buttress is peculiar to Gothic architecture. The added height of the walls, and the additional weakening of them by the use of many and large windows, required that they be reinforced from the outside by means of stone arches supported by buttresses designed to carry the lateral thrust of the lofty interior vaults.

In England Gothic architecture developed on distinct lines, while retaining some of the features of the traditional Norman style. The early English or Lancet style, so named from the shape of the windows, was marked by simplicity and sparing use of buttresses. The choir of Canterbury cathedral, and the cathedrals of Salisbury, Lincoln, Lichfield, and Wells are notable examples of this style. This period was followed by the Decorative (1280-1400), which is distinguished by profuse ornamentation and lighter construction, as illustrated by the cathedrals of Winchester, Exeter, York, and Carlisle. The Perpendicular style extended to the middle of the sixteenth century, when it became known as the Tudor. Its main features were the vertical character of the buildings, and an elaborate system of vaulting, particularly fan-shaped vaulting. Many of the college buildings at Oxford and Cambridge are representative of this style; so also are St. George's chapel, Windsor, and the chapel of Henry VII. in Westminster Abbey. Towers and spires were always characteristic of English architecture, and attained their greatest perfection in the fifteenth century.

Sculpture was more and more introduced into the decorations of Gothic structures, the use of statuary reaching its climax in the thirteenth century. In France exteriors were lavishly ornamented, and to still further accommodate such ornamentation portals were developed into porches. The English Gothic did not lend itself so well to this exterior decoration. Mural painting was in less demand on account of the smaller wall spaces of Gothic buildings, and glass painting began to be developed instead. In France and Italy during the pre-Renaissance period considerable attention was given to miniature painting.

Amiens Cathedral.—The largest ecclesiastical edifice in France, and one of the finest specimens of Gothic architecture in Europe. It was begun in 1220 and finished in 1288. While many additions have since been made, the two side towers of the western façade are still unfinished. It is 470 feet long, the transept is 213 feet long, and the nave is 144 feet wide. The very slender central spire over the transept is 360 feet high.

Cathedral and Campanile, Florence, Italy.

Beauvais, Cathedral of.—It is a fragment, consisting of only the choir and the transepts. It was begun in 1225 with the aspiration of

making it the finest of churches, but too strict economy in the building of the foundations made them too weak to support the projected superstructure. The vaulting and tracery of the choir are of the finest of the thirteenth century, and the glass, of the same time, is exquisite. The choir is 104 feet long and 157 feet high from pavement to vaulting.

Campanile.—A famous bell-tower in Florence, erected by Giotto, who began it in 1334. It is a square tower 292 feet high, divided into five stories. The Campanile of St. Mark's at Venice was begun in the ninth century and finished in the sixteenth. It fell suddenly in 1902, but is now being restored.

Canterbury Cathedral.—Founded in the eleventh century. The choir was built in 1174, and is the first example of the Gothic style in England. This is raised several feet above the nave and separated from it by a fifteenth century screen. The building is long and narrow; the interior is light and impressive; it is 514 feet long and 71 feet wide. The vaulting of the nave is 80 feet high, and the great central tower, dating from the fifteenth century, is 235 feet high. Some of the glass in the choir dates from the thirteenth century.

Chartres, Cathedral of.—One of the great churches of the world, built in the twelfth and thirteenth centuries. Noted for its great beauty and solidity. The great triple sculptured portals are matchless. The thirteenth century glass in over 160 of the windows cannot be surpassed.

Cologne Cathedral.—One of the great buildings of the world; begun in 1248, completed in 1880, after being neglected from the fifteenth century until 1823. It was suggested by the cathedral at Amiens. The building has double aisles, with two

COLOGNE CATHEDRAL.

enormous towers and spires at the west end. The vast cathedral loses a great deal of its immensity by the dominating size of the towers. It is 468 feet long and covers 91,464 square feet. The spires are 512 feet high and are surpassed only by those of Ulm.

Dryburgh Abbey.—A famous Scottish ruin, about four miles from Melrose. It dates from the twelfth and fourteenth centuries. The chapter house, the refectory, cloisters, domestic buildings, and parts of the church are standing. Sir Walter Scott and his son-in-law, John Gibson Lockhart, are buried in the church.

Jedburgh Abbey.—Situated 41 miles from Edinburgh, Scotland; founded in 1118 by David I. The nave and central part of the church are nearly perfect except for the loss of some of the vaulting and parts of the side walls. The choir is Norman; the nave, Early English; and the doorway, Romanesque.

LICHFIELD CATHEDRAL, ENGLAND.

Lichfield Cathedral.—A large and impressive church dating from the thirteenth century, and one of the most beautiful ecclesiastical buildings in England. Its proportions are exquisite and its ornamentation is of great beauty. It has three lofty spires, the central one 260 feet in height.

Lincoln Cathedral.—This grand building was founded in the eleventh century and rebuilt in the end of the twelfth and the beginning of the thirteenth centuries. It is an example of the thoroughly English Gothic style, showing no trace of the French influence so noticeable in Westminster Abbey. It has three square towers, that in the center being 262

LINCOLN CATHEDRAL, ENGLAND.

feet high, and each of the two on the west front, 200 feet high. The choir, with its decorated screen, is Early English, except the five bays, known as the Angel Choir from its decorations. The building is 480 feet by 80 feet, and the height of the vaulting is 82 feet.

Melrose Abbey.—This famous ruin on the Tweed, 29 miles from Edinburgh, dates from the fifteenth century. It is regarded as the finest

ruin of Scotland. The choir is noted for its rich capitals. The large traceried windows are notable. A few of the bays retain their vaulting.

Milan, Cathedral of.—This famous building is of Gothic architecture, but the façade is marred by classic doors and windows, and the

THE CATHEDRAL OF MILAN.

altars within are in the same style. The edifice is nearly 500 feet long, and 250 feet wide through the transepts, and the height of the nave is about 150 feet. The central spire is more than 350 feet high. The throng of statues (some 4,500 in all) and the many pinnacles are marked features of the exterior.

Notre Dame Cathedral.—The famous cathedral church of Paris, situated on the site of a Roman temple on the Ile de la Cité. Though begun in 1163 it dates from the early thirteenth century. It is one of two or three of the finest examples of early Gothic architecture. It measures 156 by

NOTRE DAME AT PARIS, WEST FRONT.

420 feet and 110 feet high. The two western towers are 224 feet high. The spire, erected in 1845 by Viollet-le-Duc, is 385 feet high. This cathedral became the "Temple of Reason" during the Revolution, and not till Hugo's *Notre Dame de Paris* had drawn attention to the venerable edifice was it restored (1844-1845).

Rheims, Cathedral of.—Begun in 1212, is noted for its vast interior (466 feet long and 124 feet high) of perfect symmetry and imposing majesty. Its gorgeous rose-window is filled with exquisite amber-colored glass of the thirteenth century. Six hundred statues adorn the triple portal of the western front. Rheims was the coronation place of the kings of France from earliest times down to 1830. The façade of the church is the finest produced in the Middle Ages. There were originally seven lofty spires, but these were destroyed in the fire of 1480.

Rouen, Cathedral of.—One of the most impressive in existence. It is 447 feet long, the nave is 92 feet high, and a tower, built to replace an old one struck by lightning, is of iron, 500 feet high. The front varies in date from Romanesque to the Flamboyant. The fine rose-windows and the sculpture about their rich gabled portals are remarkable. The whole building is noted for its lightness.

Salisbury Cathedral.—Probably the most beautiful of English ecclesiastical structures, begun in 1220 and finished in 1260. The superb central tower with its spire is 406 feet high. The building is 473 by 99 feet, and the height of the vaulting is 81 feet. It is a consistent example of early Gothic.

Strassburg Cathedral.—An interesting monument begun in the eleventh century, and finished in the fifteenth. It is famous for the spire,—468 feet high,—the west front, very delicately and richly decorated with traceried windows and arcading, fine sculptured portals, and magnificent rose-window. The openwork tower is also remarkable. The nave is thirteenth century and 100 feet high. The east end is massive Romanesque. The glass is extremely gorgeous in color. The huge astronomical clock, conceived in the early part of the sixteenth century and rebuilt in 1842, is one of the great curiosities. A perpetual calendar, forming a ring around a dial 30 feet in circumference, occupies the central part of the lower division of the clock. At midnight, December 31st, the clock regulates itself (for the new year) for 365 or 366 days, as the case may be—even the omission of the bissextile day every 400 years being provided for. The disc within the calendar shows the eclipses of the sun and moon, calculated for all time to come. On one side Apollo points with an arrow to the date and name of the saint for the day. On the opposite side stands Diana, the goddess of night. Above the calendar is a niche in which, on each day, the mythological deity of the day appears—Apollo on Sunday, Diana on Monday, Mars on Tuesday, Mercury on Wednesday, Jupiter on Thursday, Venus on Friday, and Saturn on Saturday. Above this is a dial marking the mean time in hours and quarters, with two genii, one on each side, the one striking the first stroke of every quarter, the other turning over the hourglass at the last stroke of the last quarter. Then follows an orrery, showing the revolution of the seven visible planets around the sun, and, above, a globe giving the phases of the moon. Still above this, in a niche, four figures revolve around the skeleton image of Death, in the center. Childhood strikes the first quarter, Youth the second, Manhood the third, and Old Age the last—Death strikes the hour. In a higher niche stands the image of our Saviour. At 12 o'clock the Twelve Apostles pass before Him in line, and He raises His hands to bless them. St. Peter closes the procession, and, as he passes, the mechanical cock on top of the case flaps his wings and crows three times. The left turret of this wonderful clock contains the weights and machinery, and has in its lower part the portrait of Schwilgue, above this the figure of Copernicus, and yet above, the muse Urania. At the foot of the case is a celestial globe, calculated for observation at the latitude of Strassburg. The clock is wound every eight days.

Ulm, Cathedral of.—A fine example of late Gothic in Germany; is the largest church edifice in Germany excepting the cathedral at Cologne. It was begun in 1377 and finished in the sixteenth century. The splendid triple portal at the west end, the tower terminating in an octagonal form, and the spire, which is 529 feet high and the tallest church spire in the world, are the chief points of interest. The building is 420 by 165 feet and the height of the nave to the vaulting is 141 feet.

Westminster Abbey.—Founded on the site of an earlier church by Edward the Confessor, and rebuilt in the thirteenth century by Henry III. and Edward I. Early in the sixteenth century the chapel of Henry VII. was added. Including the chapel the building is 513 feet long and 75 feet wide; the transepts are 200 feet long; the height to the vaulting is 102 feet. The three portals, graceful arcade, and

large wheel on the north transept façade are very fine. The square west towers are rather incongruous and were designed by Sir Christopher Wren. The Abbey is world-famous as the burial place of Great Britain's distinguished dead. The famous Poets' Corner is in the south transept. Here are found memorials to most of the great names honored in English literature, including a bust of Longfellow. The famous metal tomb of Henry VII. by Torrigiano is the most notable of the many which the building contains.

RENAISSANCE ART AND ARCHITECTURE.

The division known as the Renaissance in architecture is subdivided into three periods: the Early or Free Renaissance (1420-1500), the High or Classical Renaissance (1500-1575), and the Declining Renaissance or Baroque (1575-1780). The style was a result of the study of classical models of antiquity and the effort to adapt the old styles to meet the new conditions. It was personal rather than national, decorative rather than constructive, and depended more than any other style of architecture upon the individuality of the architect. It began in Florence, and its founder may be said to be Brunellesco, or Brunelleschi, and among its great names are those of Bramante and Michelangelo. The churches of San Spirito and San Lorenzo at Florence were the first of Brunelleschi's works, and the revival of the Roman art is to be seen in the moldings and other details of classic architecture.

The Renaissance made its appearance in England in the time of Elizabeth, and left its impress on English architecture, chiefly in the form of classic detail. Some fine country seats were built in what became known as the Elizabethan style; of these the houses of Longleat in Wiltshire and Bramshill in Surrey are typical examples.

Renaissance sculpture found its purest expression in the works of Donatello and of that titanic figure which was at once the embodiment of mediæval Christianity and the herald of modern sculpture—Michelangelo.

Pictorial art was preëminently stimulated by the great intellectual revival, and, unlike the sister arts which drew their models from the past, Renaissance painting was characterized by great originality. Conventionalism gave way to a closer following of nature and a higher poetic truth. Florence was the chief center of the arts, and gave birth to numerous schools of painting in Italy. Oil painting began to rapidly take the place of tempera, and the art was no longer considered the exclusive handmaid of religion. This was the age that gave birth to the great masters, Raphael, Leonardo da Vinci, Titian, Giorgione, Tintoretto, Veronese, Bellini, and Correggio in Italy; the Van Eycks, Teniers, Vandyck, and Rubens in Flanders; Hals and Rembrandt in Holland; Holbein and Dürer in Germany; Velásquez and Murillo in Spain; and Claude Lorrain, Boucher, Watteau, Lancret, and Chardin in France. With the greater wall spaces afforded by Renaissance architecture, mural paintings received new impetus, and truthfully reflect the ideals of the period.

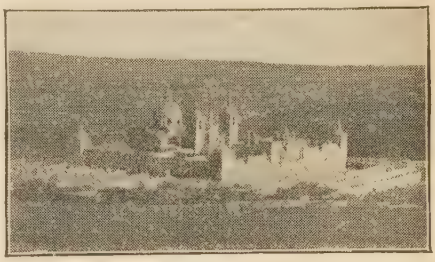
Campo Santo.—The cemetery of Pisa, Italy; a beautiful oblong court, 490 by 170 feet, surrounded by a cloister of white marble 60 feet high and beautifully adorned with reliefs and sculptures. The earth within it is said to have been brought from Palestine by Crusaders. The art treasures of the cloister are famous.

Certosa of Pavia.—A former Carthusian monastery, one of the largest and most splendid in existence. The church was founded in 1396 and contains the tomb of Visconti.

Chihuahua, the Parish Church of.—This the most important building in the city, was erected between the years 1717 and 1789 by revenues derived from a tax on the silver output of the mine of Santa Eulalia, amounting, it is believed, to $800,000. The most noticeable characteristics of the building are the sense of lightness and grace not usually found in Spanish architectural designs. This effect is secured largely by the unusual height in proportion to the width, not only of the main building but of the towers. The façade is richly adorned by statues of San Francisco and the twelve Apostles.

Doge's Palace.—Though begun in 1354 only the south and west façades are of the Venetian Pointed or Gothic style. The grand entrance, the Porta della Carta, the court, and the Giants' Staircase are splendid examples of the Renaissance. The walls of the interior are covered with masterpieces of the great masters.

Escorial.—A celebrated monastery and palace, about 27 miles from Madrid. It was built in fulfillment of a vow made by Philip II. of



THE ESCORIAL NEAR MADRID, SPAIN.

Spain to Saint Laurence, upon whose day (August 10, 1557) the victory of St. Quentin was won. It was erected in the fanciful form of a huge gridiron to commemorate the martyrdom of Saint Laurence. The great interior courts form the intervals between the bars, and a group of buildings on the east forms the handle. The mass of buildings is 786 by 623 feet, and tall towers on the angles represent the legs of the gridiron.

Farnese Palace at Rome.—One of the finest pieces of architecture in the city. Built of stones from the Colosseum and the Theater of Marcellus; finished by Michelangelo and adorned with frescoes by Carracci and his pupils. On the extinction of the Farnese family in 1731 the palace went to the Infante of Spain and, later, to the King of Naples. The latter removed some of its famous art treasures to the museum at Naples.

Heidelberg, Castle of.—The most noteworthy example of German Renaissance; was founded in the thirteenth century by the elector palatine, Rudolph I., and enlarged by his successors. It has suffered much from war and lightning, and its ruins are the most imposing in Germany. Its walls and towers are broken and clad with ivy, but the glories of the inner court remain.

Hotel des Invalides.—An establishment in Paris founded by Louis XIV. in 1670 for the accommodation of the wounded soldiers of the French army. Its dome was built by Mansart and is regarded as one of the most imposing structures in Paris. In its crypt is the tomb of Napoleon, a large monolithic sarcophagus of red granite. The crypt is 20 feet deep and 36 feet in diameter.

Louvre.—The chief royal palace of the kings of France in Paris down to the time of Louis XIV., when Versailles was built. The Louvre was begun in 1541 by Francis I., and large additions

and alterations have been made at various times. The imposing east front with its colonnade, 570 feet long, with 28 pairs of Corinthian columns, is celebrated. The oldest parts of the existing palace are the western side

General View of the Louvre at Paris.

south of the Tour d'Orloge, the Pavilion du Roi (now remodeled), and the western half of the south side (now remodeled). These were built by Pierre Lescot (1510-1578), a famous architect of the Renaissance in France and architect to the Louvre from 1546 till his death. The west side of the court ranks as the finest existing example of early French Renaissance. A large part of the interior has been used since 1793 as a museum of art, which is world-famous.

Cathedral of the City of Mexico.—Built of a gray stone, ornamented by basso-rilievos, statues, friezes, bases, and capitals of white marble. There are two towers, each 203 feet 6 inches high, Doric in the lower divisions and Ionic in the upper; and the crown of each is a bell-shaped dome capped by spheres and crosses of stone. The walls are very thick; but the inside measurements of the edifice are 387 feet from north to south, 177 feet from east to west, and 179 feet interior height. The cornices on the façade are adorned by vases, statues of the doctors of the Church, of the patriarchs of the monastic orders, and of the theological virtues and their attributes. The corner stone was laid in 1573 near the site of an ancient Aztec temple; the foundations and part of the walls were completed in 1615, and the roof of the sacristy erected in 1623; the first service was held in 1626, the first dedication occurred on February 2, 1656, and the final dedication on December 22, 1667. The towers were completed in 1791. The total cost was over $2,000,000, of which $190,000 was for bells. The great bell cost $10,000 and is 19 feet high.

Palazzo Pitti.—A palace in Florence designed by Brunelleschi, begun in 1435. It is both a royal palace and the repository of a world-famous collection of paintings. It is built of quarry-faced ashlars and has a series of columns composed of blocks of stone alternately large and small.

Ponte di Rialto, Venice.

St. Paul's, in London.—Though architecturally inferior to many church buildings, it is yet of great historical interest. It is built in the form of a cross, 514 feet long and 287 feet wide. The cost of the whole building, which is of Portland stone, was nearly $4,000,000, being the proceeds of a tax on the coal brought into the port of London during its erection. The edifice was built under the direction of Sir Christopher Wren, was 35 years in course of erection, and was commenced and finished under the same bishop, the same architect, and the same mason. The great bell of this cathedral is tolled only on the occasion of a death in the royal family.

St. Peter's, at Rome.—Commenced about the year 1503 by Julius II. under the direction of Bramante, but the present form of the basilica is due almost entirely to Michelangelo. The interior is 613 feet in length, the height of the nave 152½ feet; the length of the transepts is 446½ feet; the interior diameter of the dome is 139 feet, the exterior 195½ feet. The colonnades around the piazza inclose a space 787 feet in diameter, and are connected with the façade by two galleries 296 feet in length. The façade is 379 feet long and 148½ feet high, and contains five doors, that admit to the grand entrance, which occupies the whole width of the church, 468 feet long, 66 feet high, and 50 feet wide. The height from the pavement to the top of the cross is 476 feet.

San Lorenzo at Florence, Church of.—Begun in 1425 by Brunelleschi and decorated in part by Michelangelo. It is one of the earliest Renaissance churches.

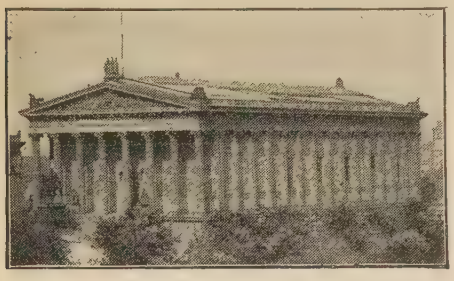
Church of Santa Maria della Salute at Venice.

Santa Maria del Fiore, Cathedral of.—Begun in 1298. When in 1420 the building was ready for the dome, it was believed that the aperture of 138½ feet was too great to be covered by a dome; but Brunelleschi undertook the task, and in 1446 completed the work, which was the first great triumph of the Renaissance. The dome is octagonal, slightly pointed, and surmounted by a lantern which is 387 feet from the ground. The building is 500 feet long and 128 feet across the nave and aisles. At the side of the cathedral is Giotto's famous campanile. The dome is second in magnitude only to that of St. Peter's.

Whitehall Palace.—Originally built by Hubert de Burgh in the reign of Henry III. James I. undertook to rebuild it after its destruction by fire in 1615. Inigo Jones designed the banqueting hall, which is the only part of the old palace remaining. This is 111 feet long, 55½ feet wide by 55½ feet high. Its ceiling is covered with paintings by Rubens representing the apotheosis of James I., events in the life of Charles I., and numerous allegories. Whitehall was the scene of Wolsey's disgrace, and the deaths of Henry VIII., Cromwell, and Charles II., while on a scaffold erected in the shadow of its walls Charles I. met his doom. The banqueting hall was transformed into a chapel by George I. and is known now as the "Chapel Royal of Whitehall."

MODERN ART AND ARCHITECTURE.

The first period of Modern Architecture was a protest against the excesses and extravagances of the Baroque period of the Renaissance. It was marked by a more rigid return than ever to the classic forms and a stricter adherence to



National Gallery at Berlin.

the principles of Roman architecture. The contrast was so great that many have termed the results lifeless and cold. As most of the monuments of this style and period date from the time of Napoleon it is often styled the Empire. This is seen in such models as the Arc de Triomphe and the church of the Madeleine. Even in the time of Louis XV. the work was begun on these lines, as may be seen in the Pantheon by Soufflot. The products of this period in Great Britain are the works of Inigo Jones and Sir Christopher Wren (St. Paul's Cathedral, London), many mansions by the brothers Adam, whose severe classical style preceded the change from that of Louis XVI. to the Empire later on, the British Museum, the Edinburgh High School, and St. George's Hall in Liverpool. In Germany the best examples of this style are seen in the Old Museum in Berlin, the Walhalla near Ratisbon, the Glyptothek at Munich, and, in Austria, in the Parliament House at Vienna. It was found, however, that this too strict adherence to classic models was not well suited to the demands of modern life. Then followed the reaction in the Gothic revival. Pugin and others in England initiated the movement, and between 1850 and 1870 the style was known as the Victorian Gothic. Its most important monuments are the Houses of Parliament and the Natural History Museum in London. In our own times the tendency in England has been to revert to Renaissance forms, as in the Imperial Institute and the Albert Hall, London, and the imposing Catholic Cathedral at Westminster.

Sculpture.—The seventeenth century was a period of decadence, and Bernini was the only sculptor of eminence it produced. In the north a rigid Puritanism saw in statuary something to condemn, and the Church was no longer the universal mother of the arts. The pseudo-classical revival in the eighteenth and early part of the nineteenth centuries produced Flaxman and Chantrey in England, and Rauch, Rietschel, Tieck, and Schwanthaler in Germany. In France the conventions of the age of Louis Quatorze were broken away from by Puget and Houdon, and a freer and a nobler style was introduced. Sculpture was but little affected by the far-spreading wave of Romanticism, but sought its inspiration from ancient models, until the genius of such men as Rude, Carpeaux, and Barye (the great sculptor of animals) supplied newer models for their contemporaries. Barye has been called "the Michelangelo of wild beasts." Upon the old models of the Greeks, French sculptors, for the most part, have grafted a newer realism; while such masters as Rodin and Meunier, the Belgian, have added an intense naturalism, and their works have brought about a new awakening of sculpture in France. One of the finest sculptors of modern times was the Englishman, Alfred Stevens (1818-1875), whose Wellington memorial in St. Paul's is a fine conception. Other eminent sculptors produced by England in recent years are Ford, Thornycroft, Foley, Drury, Brock, Frampton, Colton, Leighton, and Gilbert. At the present day there is a tendency to revive the colored statuary of classic and mediæval days, though polychromy has never really been abandoned in devotional imagery. The leader of this movement was the French artist Gérôme. Barras in France and Klinger in Germany are his most successful imitators.

Painting.—After the French Revolution there was a return to classical models; but no sooner had Romanticism swept through Europe than tradition was cast to the winds, and painting entered upon a new stage of development—naturalistic, emotional, and revolutionary. French art gained the supremacy and its influence spread throughout Europe and America. Each broad phase of the Romantic movement in France found its own group of interpreters. For example, there were the Barbizon painters—Corot, Millet, Rousseau, Diaz, Daubigny, and Troyon,—who gave expression to the emotional side; the Realists, led by Courbet; the Semi-Classicists, among whom were Bouguereau, Cabanel, and Lefebre, who tried to combine the meritorious features of the past and the present; and, finally, the school of Impressionists aiming at a better representation of life and motion. Among other eminent painters produced by modern France were Manet, Degas, Monet, Bonnat, Carolus Duran, Meissonier, Laurens, the idealist Moreau, and Brascassat and Rosa Bonheur, the gifted animal painters.

Modern English painting may be said to have begun with Hogarth (1697-1764), the close of the eighteenth century producing the celebrated group consisting of Reynolds, Gainsborough, Romney, Wilson, and Morland. Genre painting was successfully developed by such men as Wilkie; but the school of English landscape achieved the greatest originality, and was rendered famous by the works of Constable and Turner. The latter was largely instrumental in bringing the art of water-color painting to perfection. Other noted water-colorists were Cox, Prout, Müller, De Wint, and Varley. The pre-Raphaelite movement led by Rossetti, Hunt, and Millais was largely brought about by the teachings of Ruskin. British art came under the influence of France and Holland, and various schools of painting began to flourish. Among distinguished modern painters are the portraitists, Ramsay, Holl, Herkomer, Reid, Shannon, and Peacock; the landscapists, Forbes, Parsons, Fildes, and Lawson; the subject painters, Chalmers, Phillips, Pettie, Stone, and Orchardson;

the decorative painters, Watts, Leighton, and Burne-Jones.

In other European countries French influence has been dominant, though here and there a painter of originality has arisen who has developed some national trait. Such were Fortuny of Spain, Segantini of Italy, Menzel and Liebermann of Germany, Verestchagin and Repin of Russia, Boulanger and De Groux of Belgium, Matejko and Siemiradzki of Poland, Johansen of Denmark, and Israëls of Holland.

THE GLYPTOTHEK AT MUNICH.

Albert Memorial.—A monument on the south side of Kensington Gardens in London, erected (1862-1863) to the memory of Albert, Prince Consort of Queen Victoria. A colossal bronze-gilt statue of Prince Albert, seated, is supported under a Gothic canopy upon a basement raised on a spacious platform ascended by granite steps. There are 169 marble reliefs adorning the basement; projecting pedestals support the angles and are adorned by marble groups representing Agriculture, Manufacturing, Commerce, and Engineering; and at the lower angles are groups representing Europe, Asia, Africa, and America. Sir George Gilbert Scott was the designer.

Alexander Column.—A column to honor Emperor Alexander I. erected in 1832 in St. Petersburg. It is of polished red granite, 84 feet high and 14 feet in diameter at the base. The shaft supports a Roman-Doric capital of bronze, which bears the figure of an angel with the cross. It is the largest monolith of modern times. The total height is 155 feet.

Arc de Triomphe de l'Etoile.—The largest existing triumphal arch, at the head of the Champs Elysées in Paris, erected by Napoleon in commemoration of his victories, but not completed until 1836. It is 146 feet wide, 160 feet high, and 72 feet deep. One of the many noteworthy sculptures upon it is the vigorous group. "The Marseillaise," by Rude, which has in it a touch of the sublime. The name means "the triumphal arch of the star." It is so named because it is located at the point whence 12 avenues radiate in the form of a star.

BRANDENBURG GATE, BERLIN.

British Museum.—While the interest in this building centers in the magnificent collections which it contains, it must not be forgotten that in its present aspect it is one of the best examples to be found in England of the Classic Revival and protest against the Baroque. It reached its present stage in 1847 and is the result of many additions made to the original Montague House, which was acquired early in 1700. It is now a hollow square of Ionic architectural design, with an imposing façade of 370 feet fronting on Great Russell Street and flanked by the residences of the highest officials. The reading room is circular and surmounted by a dome 106 feet high and 140 feet in diameter. Several acres of land have been recently acquired to provide for the unceasing extension necessary to keep pace with the frequent additions and steady growth of the collections.

Column of July.—A monument in Paris, erected upon the site of the Bastille in 1840. It is a Corinthian column of bronze on a marble base and surmounted by a gilded statue of Liberty. The total height is 154 feet.

Madeleine, Church of the.—Begun in Paris under Louis XV. but not completed until 1842. Work upon it was delayed by the Revolution but was resumed with increased vigor under the Empire. It is a huge Roman-Corinthian temple, 141 by 354 feet and 100 feet high. The building is without windows and is lighted wholly from above. Reinach says: "Parisians and visitors to Paris, having seen the Madeleine, have some general idea of the form of a Greek temple."

Houses of Parliament in London or The New Palace of Westminster.—The rebuilding of this edifice, which began in 1836 according to plans by Sir Charles Barry, was a result of the efforts of Scott and Ruskin to influence the popular mind in the revival of the Gothic. The buildings cover eight acres and contain upward of 500 apartments clustered around 11 open quadrangles or courts. They are of gray limestone, of a rich but not ornate Gothic style, with square towers of support at certain points. This is one of the noblest structures of the last century and a most successful attempt to apply the truly northern style of architecture to secular buildings. The architect, who was a classical student, was compelled to work out his design in the Gothic style, which he did most loyally, helped by W. Pugin, to whom he intrusted the whole of the decorative features. Neither would have produced such a perfect work single handed.

Cathedral of St. Isaac's at St. Petersburg.—Finished about 1850. It is built in the form of a Greek cross, surmounted by a dome 336 feet high, upon which is a lantern. Each of its four grand entrances has a Corinthian portico supported by monolithic columns of polished granite, 60 feet high, surmounted by bronze capitals. The dome, supported by 30 granite columns, is of gilded copper. The interior is rich in fine marbles and columns of lapis lazuli and malachite.

Column of Vendome.—A Roman-Doric column of stone, covered with bronze plates in relief to commemorate Napoleon's victories over the Austrians and Russians in 1805. It is in the Place Vendôme, Paris. During the Commune (1871) Courbet, in an effort to distract the raging mob from the Louvre, directed them against this column. Courbet restored it at his own expense in 1875.

Winter Palace.—The imperial palace at St. Petersburg, Russia. One of the largest palaces in the world; 455 feet long, 350 feet wide, and provides accommodations for the complete household of over 6,000 persons. It is of the Renaissance style, with three stories. Magnificent tables, vases, and doors of malachite; the richest statuary, pictures, and gems; a magnificent series of Russian historical paintings and portraits are among its wonders. It is connected with the Hermitage, the famous art gallery which contains many of the world's masterpieces. It was burned in 1837 and rebuilt in 1839.

ART AND ARCHITECTURE IN THE UNITED STATES.

Down to about 1876 the architecture in the United States was, as a general thing, English in its origin. We must exclude from this general statement the architecture of those regions which were essentially Spanish in their settlement and development. This includes the cathedral of St. Augustine and the fort now called Marion in Florida, and the buildings of the

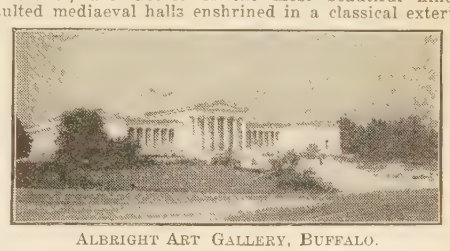
Catholic Missions, to each of which, in California and the Southwest, a church is attached. In New Orleans there are to be seen some traces of French influence, especially in the Ursuline Convent, now known as the Archbishop's Palace. The cathedral there is unmistakably Spanish in its influence. The Dutch and the Swedes on the Hudson and the Delaware respectively followed their own national characteristics as far as possible. Among these are the Van Cortlandt manor on the Hudson, built in 1681, the Slip house on Bergen Heights, New Jersey, built in 1666, a part of the Philipse manor, now the City Hall of Yonkers, built in 1682 by Frederic Philipse, the wealthiest merchant of his day, and the church at Sleepy Hollow, built in 1699 by Philipse. There are also the "Old Swedes Church" at Wilmington, built in 1699, and that in Philadelphia, in 1700.

During the early republican period many monumental buildings were erected, such, for example, as the Capitol at Washington, the State House at Boston, and the University of Virginia; but towards the middle of the century architecture declined, and most of the buildings constructed from 1850 to 1876 reflect the deterioration of public taste. Church architecture alone showed signs of vigor. In the last quarter of the nineteenth century, architecture revived, and, as the result of foreign study, architects like Hunt and H. H. Richardson produced some excellent work, and greatly stimulated the art in the United States. The present tendency is towards the style of the French Renaissance, especially for more pretentious residences and hotels. Gothic and Romanesque still remain popular for churches, though there are not wanting signs of a return to classical forms. Strictly speaking, there seems to be no aspiration towards a distinctly national architecture. Only in the colossal elevator buildings of the great cities, especially of New York and Chicago, has a new American type been evolved at once characteristic, serviceable, and imposing. The towering "skyscraper" would be more fittingly described under engineering, for it is but a steel skeleton incased in a shell of masonry. And yet these tall buildings are assuming more architectural pretensions. While the first efforts were void of all distinction and beauty, the more recent structures possess an elegance of line and a dignity of appearance eminently suitable to their surroundings. To relieve the plainness of such buildings as the "Flatiron" in New York, recourse was had to a triple division analogous to that of a classic column. The lower two or three stories constitute the base, and a similar number correspond to the capital, while the intermediate stories represent the simplicity of the shaft. But a more effective skyline is now aimed at, hence the tower is being adapted to the newer architecture. The Metropolitan building in Madison Square, New York, is an illustration of this later type.

Painting.—The first Americans to win distinction as painters were Copley (1737-1815) and Benjamin West (1738-1820). American art was under British influence till long after the Revolution, and United States artists of the early period spent the greater part of their lives in England. About 1825 American painting assumed a more national tone, under the influence of Thomas Cole, founder of the so-called Hudson River School, and of the painters of Rocky Mountain scenes—Bierstadt, Hill, Hubbard, and Moran. With the Centennial Exposition at Philadelphia in 1876 began a great revival in American art, and an awakening to the achievements of foreign artists. French influence in particular became dominant, and artists from the United States sped forthwith to Paris. But, in the main, American artists, while drawing vigor and inspiration from European art, have developed originality in subjects and motives. Two of the greatest American names are Whistler and Sargent, who hold high rank among their contemporaries. Other well-known figures of the older generation are Winslow Homer, Eastman Johnson, John La Farge, and Edwin A. Abbey. American landscape has been successfully developed, and has become the most distinctly national feature of United States art. The foremost exponent of this school is George Inness. Other well-known representatives are A. H. Wyant and Homer Martin. Of artists who have established their reputation in our own day may be mentioned Chase, Blum, Dewing, Thayer, Brush, Benson, Beckwith, Blashfield, Henry, Bunce, Tarbell, Alexander, Vedder, Pearce, Kenyon Cox, Walker, Melchers, and Low.

Sculpture.—Hiram Powers (1805-1873) was the first American sculptor worthy of the name. His contemporary, Thomas Crawford (1813-1857), produced the figure of Liberty on the dome of the Capitol at Washington. T. Ball, H. K. Brown, L. G. Mead, Launt Thompson, W. Rimmer, and Olin Warner are sculptors of the same period. With the brilliant creations of Augustus Saint-Gaudens (1848-1907) America entered the lists of European sculpture. Among the more distinguished United States sculptors are J. Q. A. Ward, D. C. French, F. MacMonnies, S. H. Borglum, Edward Kemeys, P. W. Bartlett, and a group of decorative sculptors including Isidore Konti, Philip Martiny, J. M. Rhind, Karl Bitter, Charles Grafly, and F. W. Ruckstuhl.

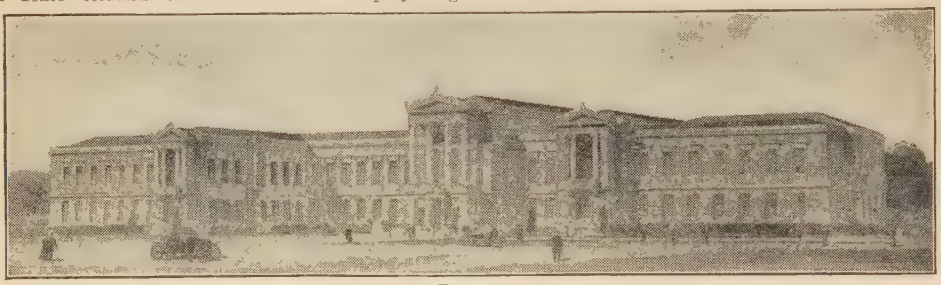
The State Capitol at Albany.—As originally designed, was an immense rectangular Renaissance block, in which an order was given to each story, much after the style practised at Venice by Sansovino and San Micheli, and was crowned by a domical tower of grand proportions. The design was improved by Richardson, and the upper portions of the edifice were completed according to it. There is great beauty in the newer portion, but it cannot be said that there is congruity. The towers are Romanesque, while the cornice of the order below is changed to Gothic. Parts of the interior, as the Hall of Assembly, the work of Eidlitz, are Gothic of the most beautiful kind—vaulted mediaeval halls enshrined in a classical exterior.



ALBRIGHT ART GALLERY, BUFFALO.

Albright Art Gallery at Buffalo.—This building stands in a park. It is a magnificent white marble structure, and was designed by Green and Wicks. Among its valuable collections are some notable etchings by Seymour Haden and others.

Museum of Fine Arts, Boston.—This building, located on Huntington Avenue and the Fenway, has a frontage of 501 feet and occupies an area of 12 acres. The main building, 320 by 120 feet, consists of two stories, and is pierced by two courts, 48 feet square, with advancing wings, inclosing a forecourt 232 by 110 feet. It is built of Maine granite of a warm gray tone. The style is simple, with Ionic columns on the ends of the projecting wings, and is in pleasing harmony with the surroundings. The design and arrangement embody three chief purposes: unity of the entire plan; each department is a complete museum; each collection is divided into an exhibition and a study series.



Museum of Fine Arts, Boston.

Public Library of Boston.—The style of this magnificent building is the Italian Renaissance. The walls are of Milford granite of a delicate pink tint and the roof is of brown Spanish tiles. A noticeable feature is the long, unbroken, heavy cornice of 225 feet. The walls of the vestibule are of Tennessee marble and from this three large portals admit to the entrance hall. The steps of the grand staircase are of Echaillon marble and the sides are of Siena marble. The mural decorations are by Puvis de Chavannes, Saint-Gaudens, Edwin A. Abbey, and John S. Sargent.

National Capitol at Washington.

The Capitol at Washington.—The inception of this belongs to the eighteenth century, and it is one of the most imposing and striking pieces of architecture in the United States. Notwithstanding its conventionally classic style, it is an edifice of which a great nation may be proud, majestic both within and without, and gaining in effect from its position on a commanding site. The corner stone of the Capitol was laid in 1793. The structure is of the Renaissance, and consists of two stories rising from an appropriate base. The ground plan is a central pavilion with north and south wings. The principal façade is on the east side, where a portico of Corinthian columns 30 feet in height fronts the pavilion, while pilasters of the same order are continued along the wings. The eight middle columns project so as to admit of another inner row, and these 16 columns support a noble pediment adorned with a bas-relief. The subject is allegorical, Liberty attended by Hope and Justice, and is said to have been designed by John Quincy Adams. The approach to this imposing portico is by a flight of broad marble steps. The central portion of the edifice is, for the most part, occupied by a circular apartment, measuring 96 feet in diameter and 180 feet in height, known as the Rotunda. It is ornamented with paintings and bas-reliefs illustrative of our national history. The paintings are separated from one another by gilded pilasters, which rise to the dome, forming the roof. The dome compares well with those that are famous in the world, and, taken as a whole, the Capitol is more stately than the Houses of Parliament, and is open to as little criticism as the buildings of its class in other lands.

The Art Museum at Cincinnati.—In the Romanesque style, has two ranges of rectangular twin windows, and the plain walls of the uppermost story are unrelieved save by blind arches. The central hall is the most striking feature of the interior.

Public Library, Boston.

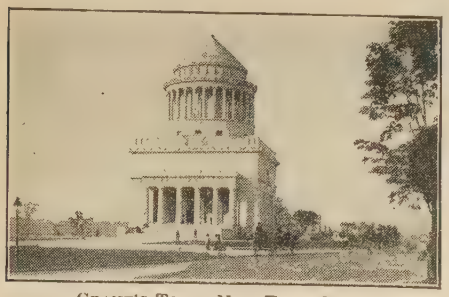
The walls are of local blue limestone, with cornices and arches of Missouri granite; the roof is of red Akron pantiles. The eastern wing has a fine polygonal apse with nine pairs of windows and a tall tower on the line of the entrance front.

Girard College at Philadelphia.—Of white marble, and modeled, as to the exterior, after the Parthenon,—that is, so far as possible, while employing a different order of architecture. It is considered the Greek building par excellence of America, as the Madeleine is of France, and is a Corinthian peristyle resting upon a Grecian stylobate.

Art Institute of Chicago.

Art Institute of Chicago.—On Michigan Avenue and north from the Auditorium stands this imposing building. It is in a semi-classical style, erected between 1892 and 1893 from designs by Charles A. Coolidge. In addition to its large and valuable collections of art objects, it supports one of the largest and most comprehensive art schools in America, numbering over 2,000 students annually.

The Capitol at Hartford, Connecticut.—This is far from being an ordinary structure, and may be reckoned one of the finest public buildings in the United States. The style is Gothic, and the regular façade is broken into a center, curtains, and wings. The center has two low towers in every way subordinate to the tall tambour and dome which rise behind them. This cupola crown tower is decidedly Gothic in the sentiment of its details.



GRANT'S TOMB, NEW YORK CITY.

Grant's Tomb, New York.—A huge and solid mausoleum of white granite erected near the north end of Riverside Drive, between the years 1891 and 1897 from designs by J. H. Duncan, and at a cost of $600,000. The lower story, 90 feet square, is in the Doric style; while the cupola, borne on Ionic columns, attains a total height of 150 feet. The interior is arranged similarly to the tomb of Napoleon at the Hotel des Invalides in Paris. In an open crypt below the center of the dome the bodies of General Grant and his wife rest side by side in sarcophagi of red porphyry. Bas-reliefs on the pendentives of the dome are emblematic of events in Grant's life and were made by J. Massey Rhind.

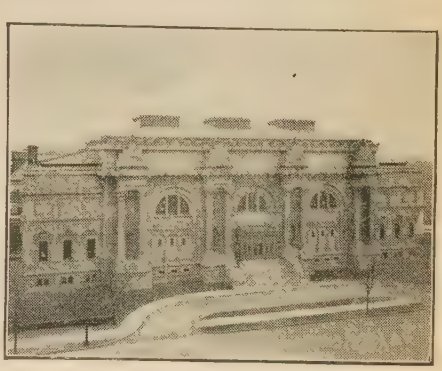
Liberty Enlightening the World.—A colossal statue in New York Harbor on Bedloe's Island, erected in 1886 and executed by Frederic August Bartholdi. It is the figure of a woman clad in a Greek tunic and mantle, bearing aloft a torch in her right hand. The statue, 151 feet high, stands upon a pedestal 155 feet high. It was a gift from the people of France to the people of the United States.

Memorial Hall of Harvard University.—Built of brick banded in the Lombard style with buff tiles bearing geometric designs in blue. The central tower rises above the Memorial Hall, while smaller towers, all of the English Gothic, flank its walls.

MORMON TEMPLE, SALT LAKE CITY.

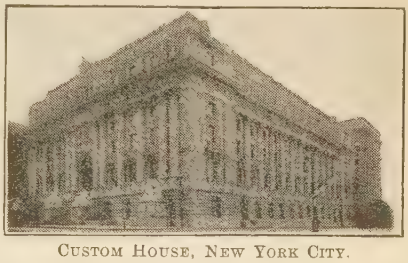
Mormon Temple at Salt Lake City.—This large and handsome granite building was erected between 1853 and 1893 at a cost of over $4,000,000. It is 186 feet long and 99 feet wide, surmounted at each end by three pointed towers. The tallest of these towers is on the east or principal façade and attains a height of 210 feet. Upon it is a colossal gilded figure of an angel by C. E. Dallin, which measures 12½ feet in height. The interior is elaborately designed and artistically adorned.

Metropolitan Museum of Art, New York.—On the east side of Central Park and opposite 82d street. This institution has been developing since 1879, the various wings being designed by different architects. The façade of gray Indiana limestone in Renaissance style was put up in 1902. This is from designs by the late Richard M. Hunt. The more recent extensions, two galleries on the north side and a library on the south, are after designs by Messrs. McKim, Meade & White. The original building was erected between the years 1879 and 1898. The value of the collection of art works which the building houses is over $20,000,000.



METROPOLITAN MUSEUM OF ART, NEW YORK CITY

Custom House, New York.—This magnificent building occupies an entire block adjoining Battery Park, with a maximum length of 288 feet, and depth of 191 feet. It consists of seven stories above and two below the sidewalk, and is built of Penobscot granite. The architecture is rich and imposing, in the style of the modern French Renaissance. Large granite columns crowned with composite capitals extend around the entire building, which is ornamented by sculptures of a high order, among them the seventh story cartouche representing the arms of the United States, by Karl Bitter, and four large marble groups on pedestals at the street level, representing America, Europe, Asia, and Africa, by D. C. French.



CUSTOM HOUSE, NEW YORK CITY.

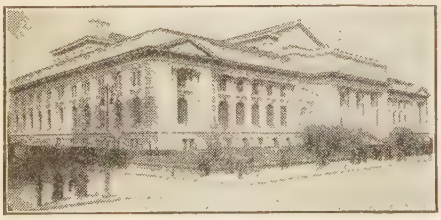
The City Hall, Philadelphia.—Is among the largest of modern buildings, slightly exceeding the Capitol at Washington in area. Seldom has a better opportunity been afforded for architectural display than is given by its position at the junction of two of the principal streets of the city. It occupies what was once Penn Square and thus stands free all around. This immense structure is conceived in the style of the Louvre at Paris, with central and angle pavilions, the whole surmounted by a mansard roof of great height. Each front is a symmetrical whole, and, with the exception of the slight difference in length, the fronts are alike. The central feature is a gigantic tower which rises upward of 537 feet above the pavement. This tower was designed to be the loftiest in the world, but in this respect has already been surpassed by the Washington Monument at the National Capital. The magnificence of this edifice consists in its imposing dimensions, the rich array of marble and polished granite, and the beautiful sculpture which adorns its facades and entrance halls.

Episcopal Cathedral of Saint John the Divine.—In process of erection at the corner of Morningside Avenue and 112th Street, New York City, from designs by Heins and La Farge. The corner stone was laid in 1892, but little progress has been made upon the work. An arch of the crossing and the granite columns of the choir (more than 50 feet high) have been erected; the crypt, with the Tiffany Chapel of mosaic glass, having an altar composed of 150,000 separate pieces of glass, and the Belmont or St. Saviour's Chapel are completed.

CATHEDRAL ST. JOHN THE DIVINE, NEW YORK CITY.

Old State House of Pennsylvania or **Independence Hall.**—Built in Philadelphia (1731-1735), from designs furnished by Andrew Hamilton. It is noted for its free use of cut stone. It was the seat of the Provincial Government. The second Continental Congress convened within its halls in 1776 and adopted the Declaration of Independence. Upon its walls are portraits of many of the signers, and the building contains many interesting relics.

New York Public Library.—This fine structure in the classic Greek style, built of white marble, was completed in 1908. It stands on the site of the old reservoir at Fifth Avenue and Forty-second Street. There are three stories with a frontage of 366 feet on Fifth Avenue, and a depth of 246 feet. The height from ground to top of cornice is 68 feet on the east front and 98 on the west front. The wings are built around two courts 80 feet square, open from the ground upward, insuring excellent interior light, and other courts have glass roofs. The bookstacks have a capacity of 1,700,000 volumes, the third largest in the world; the library opened with about 1,000,000 volumes.



NEW YORK PUBLIC LIBRARY.

Temple Emanu-El in New York City.—A most ornate and symmetrical exterior, with two towers and an arcade in the center, and although the effect is pretty and fanciful rather than grand, it ranks among the finest of the religious edifices of that city.

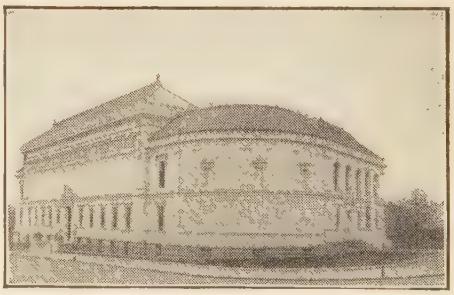
Trinity Church in New York.—A fine example of Perpendicular Gothic in brownstone, erected in 1846. Its tower and spire to the height of 284 feet are extremely effective, and the reredos and bronze doors are very noteworthy.

Saint Patrick's Cathedral in New York.—A most magnificent edifice of white marble in the decorated Gothic. It has two richly carved marble spires, 70 stained-glass windows from Chartres, and several costly altars of marble and gems. It was built between the years 1858 and 1879 at a cost of

SAINT PATRICK'S CATHEDRAL, NEW YORK CITY.

over $2,000,000. It is the best example of European fourteenth century Gothic. Some have applied to it the name of Geometric or Decorated Gothic.

Tabernacle at Salt Lake City.—This is one of the most extraordinary structures in America. It was built between 1864 and 1867, in the shape of an oval 250 feet long, 150 feet wide, and 70 feet high. Its roof is covered with iron shingles and closely resembles the hull of a ship inverted. It is supported by 44 sandstone pillars and by an interior arch which is said to be one of the largest unsupported arches in the world. The building seats 8,000 people and will hold over 12,000. It is imposing and striking in its immensity.



CORCORAN ART GALLERY, WASHINGTON. (See page 755.)

The University of Pennsylvania.—A group of Gothic structures built of green serpentine, with dressings of Ohio stone. There is little ornament, but the grouping is effective and the general effect satisfactory. Buildings of a very pleasing style, which admirably express their purpose, have recently been added.

Trinity Church at Boston.—Completed in 1877 from designs of Henry H. Richardson. The central tower is splendidly adapted from that of the cathedral at Salamanca. It is 211 feet high. The style is the simple, massive, rudimentary Romanesque of the south of France. Not only is this building in excellent architectural taste and congruity and noteworthy for its fine color effects, but it was at once a

TRINITY CHURCH, BOSTON.

great popular success. Its interior is enriched with masterly frescoes and stained-glass windows.

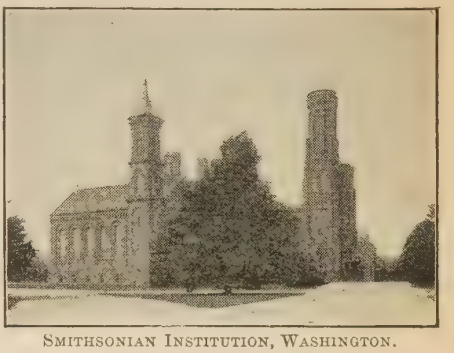
Tyler-Davidson Fountain.—This adorns Fountain Square, an expansion of Fifth Street, Cincinnati, and is one of the most successful works of art in the United States. The fountain was

TYLER-DAVIDSON FOUNTAIN, CINCINNATI.

erected in 1871 from designs made by August von Kreling. It was cast in bronze in the Royal Bronze Foundry at Munich.

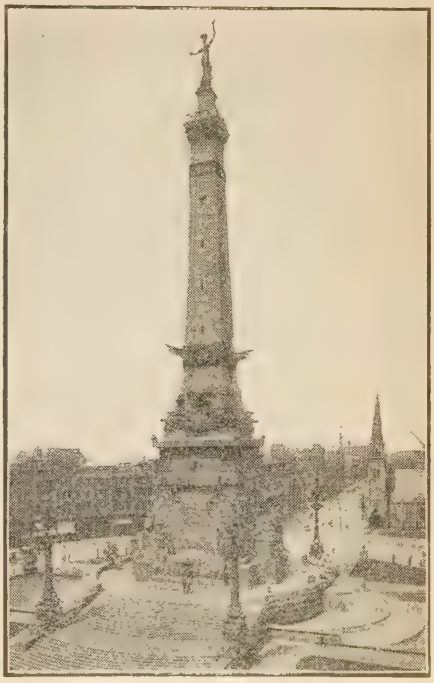
Smithsonian Institution.—A red sandstone building in the late Norman style, which was erected between 1847 and 1856 at a cost of over $450,000. It has nine towers, the loftiest of which is 145 feet high. The statue of Prof. Joseph Henry (1799-1878), the first secretary of the institution, stands in front of the building and was erected by Story.

Washington Monument.—A white marble obelisk erected on the Mall in Washington, D. C., in honor of Washington. The base is 55 feet square and the total height of the monument is 555 feet. Though the corner stone was laid in 1848, the work was not completed until 1884. The states of the Union and many foreign governments contributed blocks of stone, appropriately inscribed, which were placed conspicuously on the inner wall.



SMITHSONIAN INSTITUTION, WASHINGTON.

Washington Arch.—A triumphal arch in New York City at the Fifth Avenue entrance to Washington Square, designed by Stanford White. It was erected in 1889 to commemorate the centennial anniversary of Washington's inauguration as president of the United States. It is 77 feet high, 62 feet wide, and pierced by a single arch of 30 feet span and 47 feet height. The arch is of white marble.

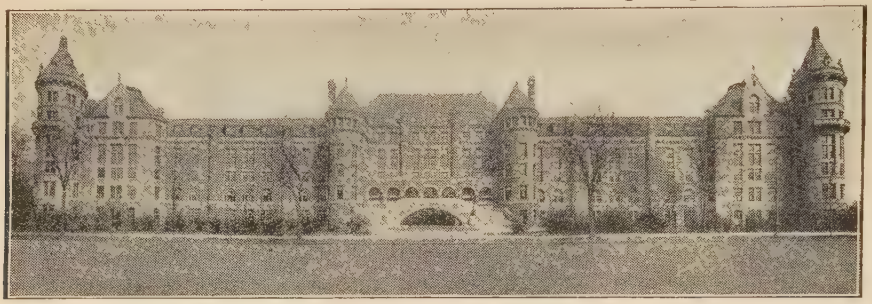


SOLDIERS' AND SAILORS' MONUMENT, INDIANAPOLIS.

Stone Hall, Wellesley College.—A fine structure and of what may be called Free Classic, but in its stepped gables and in the lines of its

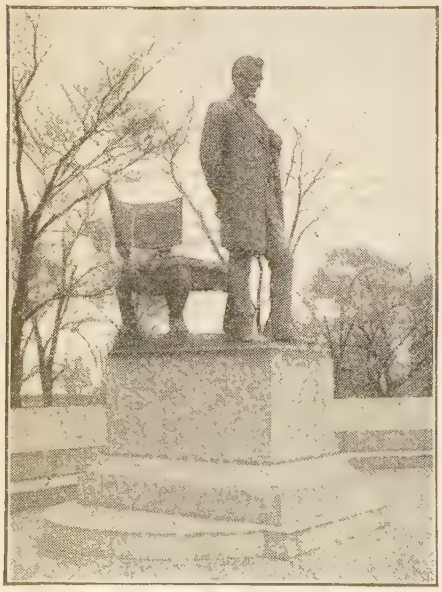
central pavilion approaches Flemish Renaissance. The entrance is well accentuated, contrasting admirably with the curtain-walls which intervene between it and the tower-like blocks which mark the intersection of the center with its wings.

American Museum of Natural History.—The museum is located in Manhattan Square on the west side of Central Park, between 77th and 81st streets, and was incorporated in 1869. It consists of two adjoining blocks, the one to the north being of red brick with granite trimmings (erected 1874-1877); and the one to the south having a façade of red granite (completed 1891). The entrance is on the south side of the structure. The ground and building belong to the City of New York, while the expenses of maintenance are defrayed by the city, the trustees, and by private subscriptions. The collections are valued at $3,000,000.



American Museum of Natural History, New York City.

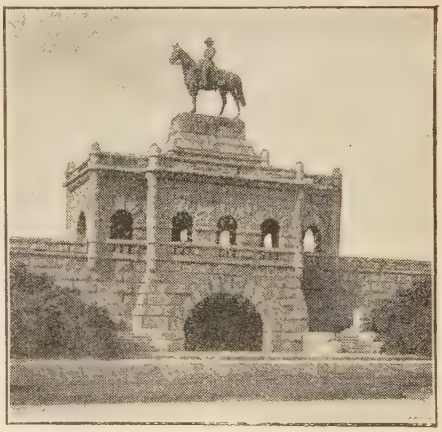
Soldiers' and Sailors' Monument, Indianapolis.—This is, perhaps, the most remarkable structure in the city, and was erected from the design of Bruno Schmitz of Berlin to commemorate the part borne by Indiana in the Civil War. About the base are to be seen allegorical figures representing peace and war, and near the monument are smaller bronze statues of Gen. George Rogers Clark, Gen. William Henry Harrison, Oliver Perry Morton, and Governor James Whitcomb. The corner stone was laid on August 22, 1889, in the presence of President Harrison. The monument is about 265 feet high and cost over $222,000.



Lincoln Monument, Chicago.

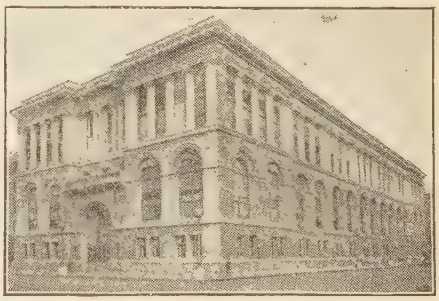
Lincoln Monument, Chicago.—This monument, one of the finest works of Augustus Saint-Gaudens, stands in Lincoln Park, facing the main entrance. The statue cost $50,000, was the gift of Eli Bates in 1887, and is considered a perfect likeness of the famous president. The cut of Lincoln, used on the two-cent stamps issued (1909) to commemorate his birth, was taken from this statue.

Grant Monument, Chicago.—This colossal memorial to the great general and president is situated at the entrance of Lincoln Park overlooking Lake Michigan, and is the work of Rebisso of Cincinnati. It has been the object of much criticism, especially the masonry foundation, which would be more appropriate for a viaduct than for a statue. The modeling on the whole is crude, the best part being that portion of General Grant's figure which is above the saddle. The statue was a gift to the park trustees by several citizens of Chicago. In clear weather it can be seen from the water for many miles.



Grant Monument, Chicago.

Chicago Public Library.—This magnificent structure was built in 1893-1897 at a cost of about $2,125,000. The architecture is of the classic type, and the interior is embellished with beautiful frescoes, mottoes, Siena and Carrara marble, and



Chicago Public Library.

about 10,000 square feet of glass mosaic. The library was made to accommodate 2,000,000 volumes; the present number, however, is considerably under this. Two notable features of the building are its large

LINCOLN MONUMENT, SPRINGFIELD, ILLINOIS.

G. A. R. Memorial Hall, and an immense delivery room, measuring 139 by 49 feet.

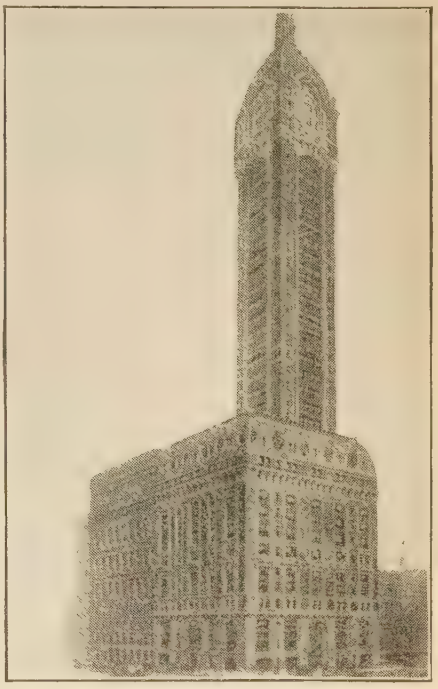
Metropolitan Building.—The tower is greater in all dimensions than that of the Singer Build-

METROPOLITAN BUILDING, NEW YORK CITY.

ing. On each of its marble-sheathed sides are the conspicuous faces of an enormous clock, each 25½ feet in diameter. At night the quarter hours are signaled by colored lights; in the day by "Cambridge" chimes rung on four colossal bells cast at Troy, N. Y. The tower is 50 stories high, 46 stories rising 700 feet above the sidewalk. The floor area of the whole building available for the company's business or for rental is about 25 acres. There is a lookout platform 660 feet above the sidewalk, which may be reached by elevator or by walking up 1,057 steps.

Lincoln Monument, Springfield, Illinois.—A granite structure of imposing dimensions in the Oak Ridge Cemetery, where it marks the resting place of Abraham Lincoln. It cost about $200,000, and was erected in 1874. One hundred and twenty feet from the ground is a bronze statue of the martyr president.

Singer Building, New York.—The main building is 14 stories high, with 40 offices on each floor. The tower, of modern French architecture and designed by Ernest Flagg, is 612 feet high, or 47 stories, its 42 office floors each having 16 offices. The entire building affords for rental about nine and one half acres of floor space. The walls are of brick and limestone, copper sheathing being used conspic-



SINGER BUILDING, NEW YORK CITY.

uously, especially in the tower. There are 16 electric elevators, 546¾ feet being the length of the highest shaft. The interior is illuminated by 14,500 electric lights, while for the exterior there are 1,800 incandescent lights, and 25 search lights each of 13,000,000 candle power, making the tower visible 40 miles away at night.

Corcoran Gallery of Art.—This building stands near the State, War, and Navy building in Washington, D. C. It was erected between 1894 and 1897 from endowment funds donated by W. W. Corcoran. It is a handsome white marble structure in a Neo-Grecian style from designs by Ernest Flagg. The semicircular part of the building is the School of Art, with over 300 pupils. The colossal bronze lions which flank the steps at the main entrance are modeled on those by Canova on the tomb of Pope Clement XIII. (See page 752.)

Custom House and Post Office at Chicago.—This is often called the new Federal Building. It occupies an entire block on Jackson Boulevard. The building is in the Corinthian style with a large dome in the center, 200 feet in height.

New Capitol of Pennsylvania.—Dedicated October 4, 1906, is 520 feet long, breadth at the center 254 feet, and through each of the wings 212 feet. It covers 86,178 square feet, or a little more than 2,000 square feet than does St. Paul's, London. The height from the ground to the top of the statue is 272 feet. The walls are of granite from Vermont, and the stone, despite a bluish-gray speckle, is of remarkable whiteness in general effect. The architect was Mr. Joseph M. Huston of Philadelphia. The dome is modeled upon that of St. Peter's at Rome. The general style of the structure is the Renaissance use of the Greek classic, with Corinthian columns on the façade. The walls are decorated with paintings by Messrs. E. A. Abbey, John W. Alexander, and W. B. Van Ingen.

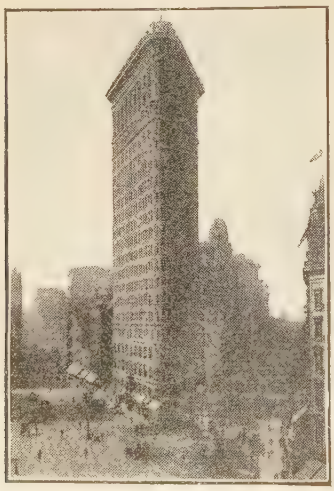
Auditorium, Chicago.—Erected 1887-1889 at a cost of about $3,500,000. The longest front, toward Congress street, is 360 feet. The main

AUDITORIUM BUILDING, CHICAGO.

building is 10 stories high, and includes a large hotel, and one of the handsomest theaters in the world. The tower, 270 feet high, is occupied as a United States signal service station.

White House.—The official residence of the President of the United States at Washington. A two-storied mansion of English Renaissance with a portico of eight Ionic columns in front and a colonnade of six Ionic columns in the rear. Begun in 1792, it was first occupied by John Adams in 1800; burned by the British in 1814; rebuilt and again occupied in 1818. The grounds include 75 acres.

Fuller Building, New York.—The Fuller Building, or, as it is popularly known, the "Flat-iron Building," occupies a prominent position at the intersection of Broadway, Fifth Avenue, and



FULLER OR "FLATIRON" BUILDING, NEW YORK CITY.

Twenty-third street. It was completed in 1903 from designs made by Frederick Burnham. Its odd triangular shape, great height, and small base solved many problems in "sky-scraper" architecture. It is 20 stories in height, making a total of 286 feet from the pavement.

Times Building.—This conspicuous office building at Broadway and Forty-second street, New York, has given the name of "Times

TIMES BUILDING, NEW YORK CITY.

Square" to the locality. It rises 375 feet above the pavement, while below are five underground stories, affording connection with the subway by a station.

The Art School at Yale.—A species of Gothic, but of heavy outline, and its tower is without sufficient prominence. Most of the newer Yale buildings are in this style, including the Peabody Museum, which is the best.

New Plaza Hotel, New York.—This great structure stands 18 stories high. Its architect was Mr. H. J. Hardenbergh. The building is of steel frame construction, with hollow tile floors, the stairways and the elevator shafts all inclosed with wire glass and all woodwork fire-proofed. About

PLAZA HOTEL, NEW YORK CITY.

17,000 incandescent lights illumine the building. There are 10 passenger cars, three sidewalk lifts, and 13 electric dumb waiters; also a very complete pneumatic equipment for distributing documentary matter. There were 400 tons of galvanized sheet metal used in the construction of the ventilating system, which includes 14 Sturtevant ventilating fans, electrically operated.

Soldiers' and Sailors' Monument at Riverside Drive, New York.—In 1902 this monument was dedicated to the memory of the soldiers and sailors who fought in defense of the Union. It is in the form of a small, circular Greek temple, 100

SOLDIERS' AND SAILORS' MONUMENT. New York.

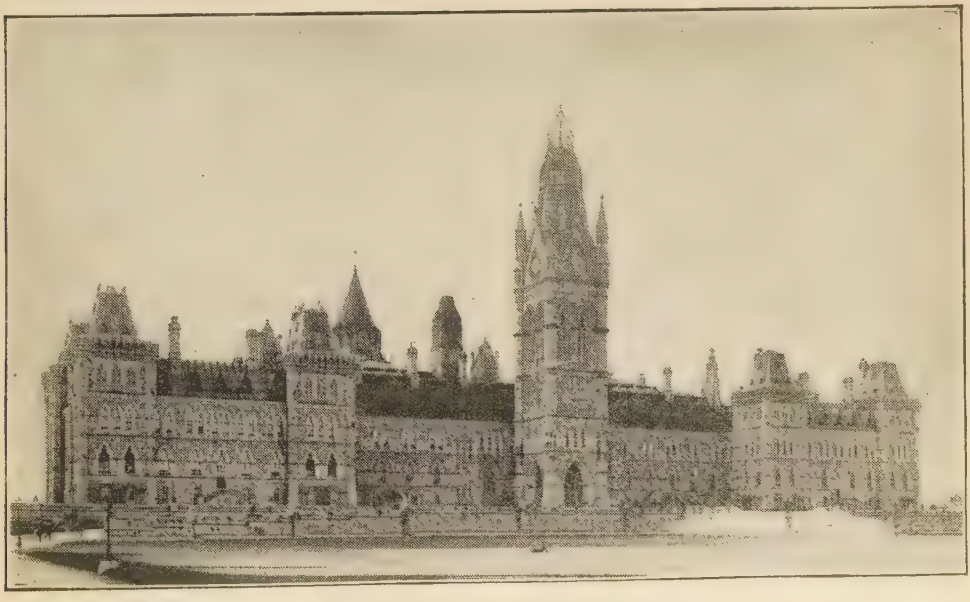
feet high, of white Dorset marble on a base of pink granite, resembling the Choragic Monument of Lysicrates. A peristyle of 12 Corinthian columns, 35 feet high, resting on a high circular base, supports an entablature, surmounted by a conical roof. There is a bronze door in the base, at the south, admitting to a high vaulted chamber containing niches for battle flags. The circular base on which the monument stands is 100 feet in diameter, paved with brick panels, surrounded by a marble balustrade.

Canadian Architecture.—This is a blend of early French and English styles; the French with solid stone houses, high steep roofs, gable ends, molded springer stones, and small dormers, and the English following the more stolid, but excellently designed utilitarianism of existing edifices in England prior to 1750. After 1840 is Greco-Roman; the City Hall of Toronto, the Library and Physics Buildings of McGill at Montreal, are prominent specimens of Romanesque; the Houses of Legislature at Victoria, Laval University, recent buildings of McGill, and the Houses of Legislature at Quebec are in Renaissance, and the Chateau Frontenac at Quebec is a clever adaptation of the famed chateau architecture of the Loire Valley, in France. Lately a phase of Scotch-Baronial has been

TORONTO UNIVERSITY. Canada. (Main Building.)

effectively introduced in the Royal Victoria Hospital at Montreal.

Houses of Parliament at Ottawa, Canada.—These imposing buildings are on Barrack Hill, 186 feet above the Ottawa river, and were built (1859-1865) for the use of the Parliament and Civil Service of Canada, which was then represented by the two provinces known as Ontario and Quebec. The material is cream colored Canadian and New York sandstone, with red sandstone facings; the entire



CANADIAN HOUSES OF PARLIAMENT. Ottawa.

these began to be agreeably merged into what may prove a composite Canadian type. After the confederation of Canada the distinct provincial features disappeared in favor of the accepted modernized forms of Gothic, Colonial, Romanesque, or Renaissance of the older world, and of the United States. The Montreal Court House edifice is ornamental and substantial, as should be all government buildings, combining the structural grace and simplicity of adapted Gothic. The foundations were commenced in 1859, the foundation stone being laid by King Edward VII. (when Prince of Wales) in 1860, the buildings being completed and occupied in 1865 at a cost of $4,000,000. The arrangement is a three-sided square, the three stories merging into the massive tower reaching 220 feet, the ground

area being four acres. The towers and pinnacles are adorned with iron trellis-work. The main or central building is 500 feet long, containing the House of Commons and the Senate; the interior decorations are very rich and effective, with columns and arches of marble. Detached wings extend on either side constituting the various departmental offices of the government service. Directly opposite the front tower on the north side of the quadrangle is the beautiful

McGILL UNIVERSITY. Montreal, Canada.

octagonal Library of Parliament; the dome supported by the flying buttresses peculiar to the true Gothic structure, adding strength to the height and lightness consequent upon the windows, pinnacles, and traceries; the buttresses being designed to carry the lateral thrust of the lofty walls. The interior paneling of the Library is of Canadian pine, carrying some excel-

LAVAL UNIVERSITY (Montreal Branch). Canada.

lent carvings; the cases contain over 250,000 books under constant addition.

Toronto University, Canada.—The architecture is the grandly impressive Norman Gothic; the tower is 120 feet high, and the main building has a frontage of 300 feet. It was erected in 1857-1858, and is justly regarded as the flower of Toronto's structural types. A few years ago fire injured the buildings but fortunately spared the wonderful sculptured doorway. It was once said by an enthusiastic admirer that "Toronto University is one of the few pieces of collegiate architecture on the continent of America worthy of standing in the streets of Oxford." Included in Toronto University is the historic Trinity College, which is a Church of England institution, founded by Bishop Strachan when old King's College of Upper Canada was secularized and became the University of Toronto; it was founded in 1852, has a frontage of 250 feet, with deep projecting wings, standing in a park of about 20 acres. Prior to 1892 Trinity was empowered by Royal Charter to confer degrees in divinity, art, law, medicine, etc.; it was then affiliated with Toronto University.

McGill University at Montreal, Canada.—This is essentially a modern, up-to-date institution, founded by the Hon. Alexander James McGill, who was a Canadian fur trader prior to the American War of Independence (1770-1783). Later he became a leading merchant of Montreal, and did a grand and lasting work in planning, organizing, and carrying to fruition the great and varied schools of learning that now comprise McGill University. The buildings are of differing types, Gothic, Renaissance, etc., but all are imposing, clear in outline, of white stone, with well-shaped, lofty rooms, having good windows, open on all sides, and an abundance of the very necessary "north light" where it is desired, as in the decorative arts, painting, sculpture, etc. McGill is a university of high utilitarian trend, as well as of the older classic ideals.

Laval University at Quebec, Canada.—Was named after the French bishop, François Xavier de Laval-Montmorency, who established the famed Seminary of Quebec (1663). It is one of

CHATEAU FRONTENAC. Quebec, Canada.

the most conspicuous buildings in Quebec, towering to a height of five stories. From the roof is seen one of the most imposing panoramas of the New World. The university consists of three well-balanced buildings of cut stone, the main edifice being 286 feet long, costing $240,000. It is in Renaissance, pure in outline, with harmonious utility, light, and space breathing from every line. A fit monument to one of the greatest men of his times. In 1878 a branch of Laval University was founded in Montreal to accommodate the French speaking citizens.

SCHOOLS OF PAINTING.

Painters who are controlled by the same ideals, methods, or principles in their work are classed together into a school or group, without regard to the times in which they live. There is one use of the word wherein it signifies all the painters of one country, distinguished from all painters of other countries. Also one master may influence several painters, and his followers are grouped into a school. Sometimes a narrower sense is implied by the application of the term to the painters of a city. So we may speak of the "Italian School," the "School of Raphael," or the "Florentine School."

BOLOGNESE SCHOOL. At Bologna, in Italy, in the fifteenth, sixteenth, and seventeenth centuries. Leaders were Francesco Francia, Lorenzo Costa; the three Carracci—Lodovico, Agostino, and Annibale, Guido, Domenichino, and Guercino.

FLORENTINE SCHOOL. At Florence, in Italy, in the thirteenth, fourteenth, fifteenth, and sixteenth centuries. Leaders were Cimabue, Giotto, Leonardo da Vinci, Fra Bartolommeo, Michelangelo, Fra Angelico, Andrea del Sarto, Filippo Lippi, Filippino Lippi, Masaccio, Botticelli, and Domenico Ghirlandajo.

MILANESE SCHOOL. At Milan, in Italy, in the fifteenth and sixteenth centuries. Leaders were Vincenzo Foppa, Ambrogio Borgognone, Bernardino Luini, Cesare da Sesto, Beltraffio, Marco d'Oggiono, Andrea Solari, and Guadenzio Ferrari.

MODENA AND PARMA SCHOOLS. At Modena and Parma, in Italy, in the sixteenth century. Leaders were Correggio and Tommaso.

NEAPOLITAN SCHOOL. At Naples, in Italy, in the sixteenth and seventeenth centuries. Leaders were Caravaggio, Ribera, Salvator Rosa, and Giordano.

PADUAN SCHOOL. At Padua, in Italy, in the sixteenth century. The leader was Andrea Mantegna.

ROMAN SCHOOL. At Rome, in Italy, in the sixteenth and seventeenth centuries. The leaders were Raphael, Francesco Penni, Innocenzo da Imola, Giulio Romano, Perino del Vaga, and Sassoferrato.

UMBRIAN SCHOOL. In the province of Umbria, in Italy, in the fourteenth, fifteenth, and sixteenth centuries. Leaders were Gentile da Fabriano, Piero della Francesca, Fiorenzo di Lorenzo, Perugino, Pinturicchio, Raphael, Lo Spagna, and Timoteo della Viti.

VENETIAN SCHOOL. At Venice, in Italy, in the fifteenth and sixteenth centuries. Leaders were Gentile Bellini, Giovanni Bellini, Vittore Carpaccio, Palma Vecchio, Giorgione, Titian, Lorenzo Lotto, Paris Bordone, Tintoretto, and Paolo Veronese.

BRITISH SCHOOL. In Great Britain in the eighteenth and nineteenth centuries. Leaders were Hogarth, Sir Joshua Reynolds, Gainsborough, Richard Wilson, Sir Thomas Lawrence, Turner, Constable, Sir David Wilkie, and Sir Edwin Landseer.

DUTCH SCHOOL. In Holland. Leaders were Rembrandt, Ruysdael, the Teniers, Brouwer, Ostade, Jan Steen, Cuyp, Hobbema, Wouvermans, and Hals.

FLEMISH SCHOOL. In Flanders in the fifteenth, sixteenth, and seventeenth centuries. Leaders were the Van Eycks, Memling, the Massys, Van der Heyden, Mabuse, Rubens, Van Dyck, Jordaens, and Snyders.

FRENCH SCHOOL. In France after the fifteenth century. Leaders were Nicolas Poussin, Claude Lorrain, Watteau, Boucher, Greuze, Claude Vernet, Fragonard, David, Prud'hon, Ingres, Horace Vernet, Géricault, Delaroche, Delacroix, Rousseau, Scheffer, Millet, Meissonier, Corot, Regnault, and Decamps.

GERMAN SCHOOL. In Germany after the fourteenth century. Leaders were Wilhelm of Cologne (1358-1372), Martin Schöngauer, Albert Dürer, Lucas Cranach (2), Hans Holbein (2), Cornelius, Overbeck, Kaulbach, Schadow, and Lessing.

SPANISH SCHOOL. In Spain after the fifteenth century. Leaders were Francisco de Ribalta, Francisco Zurbaran, Velasquez, Murillo, Goya, and Fortuny.

SCHOOLS OF SCULPTURE.

AEGINETAN SCHOOL. In the island of Aegina after 480 B. C. Leaders were Smilis, Callow, Anaxagoras, Glaucias, Onatas, and Calliteles.

ATTIC SCHOOL. At Athens after the fifth century B. C. Leaders were Critias, Hegesias, Calamis, Phidias, Alcamenes, Myron, Lycias, Scopas, and Praxiteles.

CHIAN SCHOOL. In the island of Chios in the sixth century B. C. Leaders: Bupalus and Anthermus.

PERGAMENE SCHOOL. At Pergamum, near Troy, in Asia Minor. Leaders were Isogonus, Phyromachus, Stratonicus, and Antigonus.

RHODIAN SCHOOL. At Rhodes after 290 B. C. Leaders were Chares, Agesander, Athenodorus, Polydorus, Apollonius, and Tauriscus.

SAMIAN SCHOOL. In the island of Samos about 500 B. C. Leaders: Rhoecus, Theodorus, and Telecles.

SICYONIAN SCHOOL. At Sicyon, in the Peloponnesus, about 560 B. C. Leaders were Canachus, Euphranor, Lysippus, and Eutychides.

THE HALL OF FAME.

March 5, 1900, the Council of New York University accepted a gift of $100,000 (subsequently raised to $250,000) from a donor, whose name was withheld, for the erection and completion on University Heights, New York City, of a building to be called "The Hall of Fame for Great Americans." A structure was accordingly built in the form of a semicircle, 506 feet long, 15 feet wide, and 170 feet high, connecting the University Hall of Philosophy with the Hall of Languages. Within the colonnade 150 panels, each 2 by 8 feet, are to be placed, to bear the names of Americans deemed the greatest in their respective fields.

Under the rules adopted only persons born on what is now United States territory and who shall have been dead 10 or more years are eligible to be chosen, and they must be selected from 15 classes of citizens, to wit: Authors and editors, business men, educators, inventors, missionaries and explorers, philanthropists and reformers, preachers and theologians, scientists, engineers and architects, lawyers and judges, musicians, painters and sculptors, physicians and surgeons, rulers and statesmen, soldiers and sailors, distinguished men and women outside the above classes. Fifty names were to be inscribed on the tablets at the beginning, and five additional names every fifth year thereafter, until the year 2000, when the 150 inscriptions will be completed. Should there be a failure to select the entire 50 names at the beginning, the vacancies shall be filled in a following year.

HALL OF FAME.

In October, 1900, the University Senate received the ballots of the judges. Of the 100 judges selected, 97 voted. The number of names which had been submitted to them was 252. Of these each judge returned a vote for 50. The rule required that no candidate receiving less than 51 votes could be accepted. The returns showed that but 29 candidates received the required number and were chosen. These were as follows: George Washington, Abraham Lincoln, Daniel Webster, Benjamin Franklin, Ulysses S. Grant, John Marshall, Thomas Jefferson, Ralph Waldo Emerson, Henry W. Longfellow, Robert Fulton, Washington Irving, Jonathan Edwards, Samuel F. B. Morse, David G. Farragut, Henry Clay, Nathaniel Hawthorne, George Peabody, Robert E. Lee, Peter Cooper, Eli Whitney, John J. Audubon, Horace Mann, Henry Ward Beecher, James Kent, Joseph Story, John Adams, William E. Channing, Gilbert Stuart, and Asa Gray.

Provision has been made for an additional hall, having 30 panels, to contain the names of foreign born Americans; also for a Hall of Fame for women. Eleven names were added in 1905, as follows: J. R. Lowell, J. G. Whittier, General W. T. Sherman, J. Q. Adams, James Madison, John Paul Jones, Louis Agassiz, Alexander Hamilton, Maria Mitchell, Mary Lyon, and Emma Willard.

FAMOUS MASTERPIECES OF ART.

ABRAHAM, SACRIFICE OF. Painted by Rembrandt; now in the Hermitage Gallery at St. Petersburg. It portrays the scene as depicted in Genesis xxii. Murillo, Raphael, Andrea del Sarto, and Teniers have also treated this subject.

ACHILLES, EDUCATION OF. Painted by Henri Regnault; now in the Louvre. Chiron, the centaur, is teaching the young Achilles to shoot with the bow.

ADAMS MEMORIAL. By Saint-Gaudens; in Rock Creek Cemetery at Washington. It is frequently called "Grief," "Death," or "The Peace of God." A memorial to a woman who lived and died. Nothing else is known about her. A mysterious bronze figure of a woman leaning against a slab of polished granite.

ADORATION OF THE LAMB. Painted by Jan and Hubert van Eyck; formerly an altarpiece in the cathedral at Ghent. The central part is still there; the other parts are in the Berlin Museum. The greatest example of the Flemish school and one of the most wonderful works of art in the world.

ADORATION OF THE MAGI. VERONESE. Vienna Gallery.

ADORATION OF THE MAGI. Homage paid to the infant Jesus by the wise men from the East (Matthew ii. 1-12). A favorite subject of painters. The most famous are by Botticelli, in the Uffizi, Florence; Albrecht Dürer, in the Uffizi, Florence; Gentile da Fabriano, in the Florence Academy; Raphael, in the Berlin Museum; Rembrandt, at Buckingham Palace; Rubens, in the Antwerp Museum, Brussels Museum, the Hermitage, and the Louvre; Titian, in the Madrid Museum; Velasquez, at Madrid; Veronese, at the Brera of Milan, Dresden Museum, National Gallery of London, and Vienna Museum; and Leonardo da Vinci, at the Uffizi, Florence.

AEGINETAN MARBLES. Sculptures found in the temple of Athena in the island of Aegina; found in 1811 and restored by Thorwaldsen; supposed to have been executed about 475 B. C.; now in the Glyptothek at Munich.

AGE OF INNOCENCE. Painted by Sir Joshua Reynolds; now in the National Gallery at London. It represents a little girl seated under trees upon the grass.

THE DOCTORS. Detail from the Anatomy Lecture REMBRANDT. Royal Museum, The Hague.

ALEXANDER, HISTORY OF. A series of five paintings by Charles Le Brun; now in the Louvre. The subjects are The Passage of the Granicus, Battle of Arbela, Tent of Darius, Alexander and Porus, and Alexander Entering Babylon.

THE ANGELUS. MILLET. Paris.

ALMA MATER. A statue by French; in the approach to the Library of Columbia University in New York. A colossal figure seated in a curule chair, with elbows resting upon the arms, her head crowned by a wreath, and bearing a mace upright in her right hand.

AMAZONS, BATTLE OF THE. Painted by Rubens; now in the Munich Gallery. It represents the conquest of the Amazons by Theseus. He is shown upon a prancing horse and about to hurl his javelin at the Amazons, many of whom are falling from the bridge or struggling in the water.

AMBROSE AND THEODOSIUS. Painted by Rubens; now in the Vienna Museum. It is the scene of the refusal of Archbishop Ambrose of Milan to admit the emperor Theodosius into the cathedral until he shall do penance for his massacre of the people of Thessalonica (390).

AMOR CARITAS. By Saint-Gaudens; in the Luxembourg Gallery in Paris. One of the most admirable angel forms known to modern art.

ANATOMY LECTURE. A masterly composition by Rembrandt, now in the Royal Museum, The Hague. This painting shows the marvelous handling of light and shadow and the clear portrayal of character on every face, the whole being bathed in the luminous atmosphere so characteristic of Rembrandt's genius.

ANGEL OF DEATH AND THE YOUNG SCULPTOR. A relief by Daniel French; in Forest Hills Cemetery, near Boston. The Angel of Death is staying the hand of a young sculptor just as his work nears completion. It is a memorial to Martin Milmore.

ANGELUS. A celebrated painting by the French genre and landscape painter Millet (Paris, 1859). A peasant youth and maid pause from their outdoor work at the sound of the angelus, and stand in an attitude of silent prayer. This picture was purchased by the American Art Association in 1889 for 580,650 francs and resold in 1890 to M. Chauchard for $150,000.

THE ANNUNCIATION. TINTORETTO. Berlin Gallery

ANNUNCIATION, THE. The announcement by the angel Gabriel to the Virgin Mary of the coming birth of

Christ. A favorite subject of painters. Among the most famous are those by Fra Angelico, in the Madrid Museum; Fra Bartolommeo, in the Louvre; Ludovico Carracci, in the Louvre; Murillo, in the Madrid and the Seville museums; Andrea del Sarto, in the Pitti Palace, Florence; and Titian, in the Scuola di San Rocco at Venice. One of a series of paintings from the life of Christ by Tintoretto (1518-1594), and now in the Berlin Gallery. It was painted for the Guild of San Rocco, Venice, by whom he was engaged to paint three pictures a year at a salary of 100 ducats.

ANTINOUS. The illustration shows the marble bust of Antinoüs in the Vatican Museum, Rome. This is only one of several busts and statues of Hadrian's favorite, who lost his life in saving his master from drowning in the Nile. Antinoüs was a popular figure with Roman sculptors, and they made of him a new Apollo.

ANTINOUS. Vatican Museum, Rome

ANTIOPE. Painted by Correggio; now in the Louvre. Antiope sleeps upon a blue drapery at the foot of a tree, while Cupid lies sleeping upon a lion's skin near her. A satyr stands near her head.

APOLLO BELVEDERE. A famous statue in the museum of the Vatican. It is a copy of a bronze statue executed soon after the death of Alexander. The original is attributed to Leochares, one of the artists engaged upon the Mausoleum under the direction of Scopas. The god has just hurled a dart and his expression is one of divine anger, not unmingled with contempt.

APOLLO CITHAROEDUS or **APOLLO MUSAGAETES.** A copy of a statue by Scopas, placed in the Palatine Temple by Augustus; now in the Vatican. Apollo is dressed in a tunic and crowned with a laurel wreath. He is playing the cithara or lyre.

APOLLO SAUROCTONUS or **APOLLO THE LIZARD SLAYER.** A copy of a work in bronze by Praxiteles. One is in the Vatican; a second, in the Louvre; and a third, in bronze, in the Villa Albani. Apollo is represented as a beautiful youth standing by a tree trunk and about to pierce a lizard with a dart.

ARAB SCOUT. Painted by Adolf Schreyer, the animal painter. This work was sold at the Morgan sale in New York, in 1886, for $3,500.

ARES or **MARS, STATUE OF.** In the Villa Ludovisi at Rome. The god holds his sword in his hand; one knee is raised; his shield is beside him; while at his feet Cupid or Eros, his son, plays.

ASHMOLEAN MUSEUM. At Oxford University; built (1679-1683) to receive the natural and antiquarian curiosity collections donated by Elias Ashmole. The Arundelian Marbles and other antiquities are contained in it.

APOLLO BELVEDERE. Vatican Museum, Rome.

ASSUMPTION, THE. The ascent to heaven of the Virgin Mary after death. The most famous paintings of this event are by Titian, in the Venice Academy and the Cathedral of Verona; Rubens, in the Antwerp Cathedral; and Andrea del Sarto, in the Pitti Palace at Florence.

AUGUSTUS CÆSAR. Vatican Museum, Rome.

AUGUSTUS CAESAR. This fine statue, now in the Vatican Museum, was found near Velletri (Velitroe), the birthplace of the conqueror of Actium. It is a lifelike figure of Augustus proudly haranguing the people.

AURORA. A fresco painting by Guido Reni on a ceiling of the Rospigliosi Palace at Rome. The goddess flies before the car of Phoebus (Apollo), scattering

roses. Graceful figures representing the hours attend the god. Guercino executed a similar, but inferior, fresco on a ceiling of the Villa Ludovisi at Rome.

AVENUE AT MIDDELHARNIS. One of the earlier works of Hobbema, the Dutch landscape painter. It is noted for its truth of atmospheric effect and for tone and brilliancy of color. It is in the National Gallery at London.

BACCHANTE. Statue by Macmonnies; in the Metropolitan Museum in New York. A remarkably realistic and idealistic conception.

BACCHUS AND ARIADNE. Painted by Titian; in the National Gallery at London. Ariadne is fleeing from Bacchus, who is leaping from his leopard-drawn car to pursue her, after she has been deserted by Theseus on the shore of Naxos.

BATTLE OF ISSUS. A mosaic picture, 17 feet by 8, found in Pompeii; now in the Naples Museum. Alexander is charging towards Darius, who is standing in a chariot attended by his horsemen and soldiers.

BEAR-TAMER, BOHEMIAN. Executed by Paul Wayland Bartlett while in Paris and exhibited at the Salon. Two years' work was expended upon it. The plaster cast of his first effort is in the Art Institute in Chicago, the bronze is in New York.

BEATRICE CENCI (*ba-ah-tre'chay chen'che*). Painted (it is said) by Guido; now in the Barberini Palace at Rome; but much doubt is cast upon both the subject and the artist.

BEATRICE CENCI. A statue by Harriet Hosmer; in the Mercantile Library at St. Louis. As a prisoner she sleeps on her hard pallet; the left hand has fallen to the floor and holds a rosary.

BEECHER, STATUE OF. By J. Q. A. Ward; in front of the Court House in Brooklyn. It presents the great orator, clad in overcoat with cape, his hat in hand, standing solidly upon both feet in an attitude which he so often assumed while addressing the people.

BEETHOVEN. Bronze statue by Crawford; stood for years in Music Hall in Boston, Mass.; now in the new Symphony Hall, Back Bay.

BELSHAZZAR'S FEAST. Painted by Washington Allston; now in the Museum of Fine Arts at Boston, Mass. Daniel is interpreting the handwriting on the wall. The picture was begun in 1818, but was never completed.

BELVEDERE. A part of the Vatican at Rome; noted for its collection of art treasures, which include the Apollo Belvedere and the Laocoön.

BLUE BOY, THE. Painted by Gainsborough; now in Grosvenor House, the residence of the duke of Westminster. Sir Joshua Reynolds had said that cold colors (blue being the chief) cannot be effectively used in painting portraits. This work was done in that color to disprove his theory.

BRERA (*bra'rah*). Originally a Jesuit church called Santa Maria; now the Palace of Science and Art in Milan, Italy; noted for its picture gallery, library, observatory, etc.

THE YOUNG BULL. POTTER. Royal Gallery, The Hague.

BRONZE DOORS OF THE CAPITOL. At Washington, by Crawford, Rogers, and Rinehart. The doors of the Senate were designed and nearly completed by Crawford, finished by Rinehart. The subjects are "War and its Terrors," "Peace and its Blessings," and include "Bunker Hill and the Death of Warren," "Battle of Monmouth and Rebuke of Lee," "Yorktown and Hamilton," "A Hessian Soldier Attacking a House," "Washington's Reception at Trenton," "Inauguration of Washington," and "Laying of the Corner-stone of the Capitol." Bronze doors in the rotunda of the Capitol at Washington by Rogers. The scenes are from the life of Columbus. They are remarkable for grace and dramatic power.

BRUTUS. Painted by Jacques Louis David in 1789; now in the Louvre. Brutus holds in his hand the written evidence of the guilt of his sons in attempting the restoration of the Tarquins. The bodies of his sons, who have just been executed by their father's orders as consul, are carried away by the lictors amid the shrieks of their mother and sisters.

BULL, THE YOUNG. Painted by Paul Potter in 1647; now in the Royal Gallery at The Hague. The bull is standing under a tree; a ewe is resting by a cow under the tree; while a herdsman is standing on the other side of the fence. All are life size, and the execution and color make the work a masterpiece.

CAESAR, DEATH OF. A favorite subject with painters. The most notable are by Vincenzo Camuccini, in the Royal Palace at Naples; Gérôme, owned by J. J. Astor; and Karl von Piloty, in the Munich Gallery.

CASTOR AND POLLUX. Painted by Rubens; now in the Munich Gallery. The twins are carrying off Hilaira and Phoebe, daughters of Leucippus and priestesses of Athene and Artemis. The maidens were betrothed to Idas and Lynceus. This led to the war in which Castor was slain by Idas.

CECILIA, SAINT. Painted by Raphael; now in the Bologna Gallery. The saint is standing between Saints Paul and John on one side and Saint Augustine and Mary Magdalen on the other. Domenichino, Rubens, and Reynolds have also treated this subject.

CHANCELLOR JOHN WATTS. Statue by Bissell; in Trinity churchyard in New York. The best work this sculptor did.

CHAPEAU DE PAILLE. Painted by Rubens; now in the National Gallery in London. A half-length portrait of a young lady in a black velvet bodice with crimson sleeves and wearing a black hat with black and white feathers.

CHAPIN, STATUE OF DEACON. By Saint-Gaudens; in Springfield, Mass. The old Puritan, on his way to, or from, the meeting house, "grasping," as Kenyon Cox says, "his Bible as Moses clasped the tables of the law and holding his peaceful walking stick with as firm a grip as the handle of a sword."

CHARLES I. Painted by Van Dyck about 1635; now in the Louvre. The king is dressed in white satin jacket, red hose, buff boots, and has just dismounted from his horse.

CHARLES V. AT MUHLBERG. Painted by Titian in 1548; now in the Madrid Museum. The emperor is mounted and carries a spear upon the field of Mühlberg, where he defeated the elector of Saxony in 1547.

CHILDREN OF CHARLES I. Painted by Van Dyck in 1638; now in Windsor Castle. Prince Charles is standing, with his hand upon the head of a very large dog; Princess Elizabeth and Princess Mary are on his right; while Princess Anne holds James, Duke of York, upon her knee. A later picture by Van Dyck is also at Windsor, and an earlier one is in the Turin Gallery.

CHRIST BEFORE PILATE. Painted by Munkácsy in 1881.

CHRIST CROWNED WITH THORNS. Painted by Titian in 1553; now in the Louvre. Another by Caravaggio is in the Hermitage; one by Ludovico Carracci is in Bologna; one by Van Dyck is in the Berlin Museum; one by Guercino is at Munich; and a second by Titian is also in Munich.

CHRIST HEALING THE SICK. Painted by West in 1826; now in the National Gallery in London.

CHRIST ON CALVARY. Painted by Munkácsy in 1883 and 1884. A vivid representation of the crucifixion. The picture was exhibited in America.

CLEOPATRA. A marble statue by Story (1862); in the Metropolitan Museum at New York. An impressive work. Hawthorne took an interest in the conception and execution of the statue.

CLYTIE. A life-size nude marble statue by Rinehart (1872); in a special gallery in the Peabody Institute. A plaster cast is in the Corcoran Art Gallery. The modest grace and tenderness of the figure are delightful.

COMMUNION OF ST. JEROME. Painted by Domenichino in 1614; now in the Vatican. One of the world's most celebrated paintings. St. Jerome is near unto death and is lying before the altar. He attempts to receive the Host from St. Ephraim of Syria. His faithful lion is near him; and, above, is a group of angels.

CONSPIRACY OF CATILINE. Painted by Salvator Rosa; now in the Pitti Palace in Florence. It represents the conspirators taking an oath of fidelity.

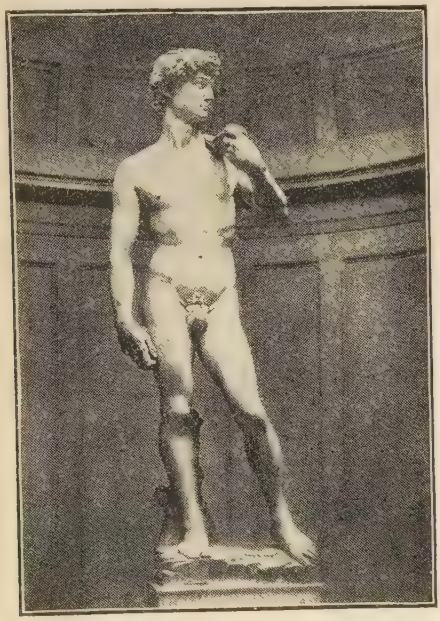
CORIOLANUS. A statue of Forrest as Coriolanus executed by Thomas Ball in 1867; now in the Actors' Home near Philadelphia. An excellent piece of work.

CROMWELL AND CHARLES I. Painted by Paul Delaroche; exhibited in Paris in 1831; now in the Nîmes Museum. Cromwell stands beside the coffin of Charles I. and gazes solemnly upon the face.

CRUCHE CASSE or **THE BROKEN PITCHER.** Painted by Greuze; now in the Louvre. A young girl bears a broken or cracked pitcher on her arm. She stands beside a fountain. She is dressed in white, wears a violet ribbon, and carries flowers in her apron.

CRUCIFIXION. Almost all of the great masters have painted this subject. Among the most famous are the pictures by Lucas Cranach, in the Stadtkirche at Weimar; Van Dyck, in Mechlin Cathedral; Andrea Mantegna, in the Louvre; Murillo, in the Hermitage; Rubens, in the Antwerp Museum; Tintoretto, in Venice; Titian, in Ancona; and Christ on Calvary by Munkácsy.

DANTE'S DREAM. Painted by Dante Gabriel Rossetti in 1870; now in the Liverpool Gallery. It represents Dante's dream of seeing Beatrice on the day of her death, as told in his *Vita Nuova*.



DAVID. MICHELANGELO.

DAVID. This statue, now at Florence, is one of the early masterpieces of Michelangelo. The anatomy is so perfect that some even regard the *David* as an offense against taste.

DAVID AND GOLIATH. Painted by Guido; now in the Hermitage at St. Petersburg. David stands holding the bleeding head of the giant. His sling is in his left hand and the giant's sword is at his feet.

DEATH AND THE WOODCUTTER. Painted by Millet in 1859; now owned privately in Paris. An old woodcutter, staggering under a load of fagots and oppressed by the poverty of his lot, calls upon Death to relieve him of the burden of life, but trembles with fear on his approach.

DEATH OF WOLFE. Painted by West in 1771; now in Grosvenor House, London. In the scene of the death of Wolfe on the Plains of Abraham at Quebec in the moment of victory over the French in 1759, West departed from the custom among artists of painting modern figures in classical costumes and presented his characters in modern dress.

DEATH ON THE PALE HORSE. Painted by West in 1817; now in the Pennsylvania Academy. It is 25 feet long and 15 feet high. It is an interpretation of the sixth chapter of Revelations.

DESCENT FROM THE CROSS. A favorite subject with the great masters. Among the most famous are the paintings by Rubens, in the Antwerp Cathedral; Daniele da Volterra, in Rome; Rembrandt, in the Munich Gallery; Andrea del Sarto, in the Pitti Palace at Florence; and Titian, in the Venice Academy.

DIADUMENUS. A statue by Polyclitus. A Roman copy of this is in the British Museum. It represents an athlete binding his brow with a fillet.

DIANA AND ACTAEON. Painted by Titian in 1559; now in Bridgewater House, London, owned by the earl of Ellesmere. With "Diana and Callisto" it forms the pair painted for Philip II. of Spain.

DIANA OF VERSAILLES. A Greek statue found in the ruins of Hadrian's villa at Tivoli; now in the Louvre. It is the most famous statue of the goddess. The goddess is advancing with one hand upon the head of a stag and the other drawing an arrow from a quiver.

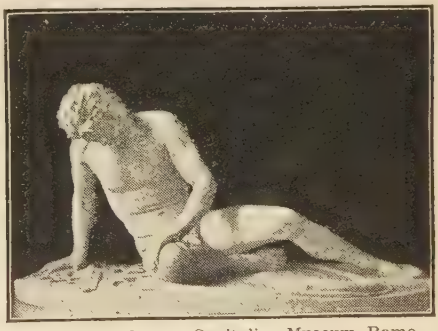
DIANA OR CHRIST. Painted by Edwin Long in 1881 and exhibited at the Royal Academy in London. A Christian maiden in the stadium at Ephesus, surrounded by soldiers, executioner, and Roman rulers, elects the service of Christ and the death penalty in preference to that of Diana and life.

DIANA'S HUNTING PARTY. Painted by Hans Makart in 1882 and presented by James H. Banker to the Metropolitan Art Museum in New York. It measures 29 by 13 feet. Diana is about to hurl her spear at a stag in the water protected by nymphs, who beg its life from the goddess.

DIGNITY AND IMPUDENCE. Painted by Landseer; now in the National Gallery at London. A sedate old bloodhound and a saucy Scotch terrier are side by side looking from the door of a kennel.

DORYPHORUS. A statue by Polyclitus; now in the Naples Museum. It was long the standard of human proportion and was known as "The Canon." Artists have visited it from all parts for study. It represents a young man holding a spear in the left hand.

DUCHESS OF DEVONSHIRE. Painted by Gainsborough in 1783.



THE DYING GAUL. Capitoline Museum, Rome.

DYING GAUL. This famous statue in the Capitoline Museum, Rome, represents the passing away of a vanquished barbarian, at once a realistic and pathetic figure. This is a marble copy of a bronze statue executed in the time of King Attalus of Pergamus, about 240 B. C., and is sometimes erroneously called the "Dying Gladiator."

ECCE ANCILLA DOMINI (BEHOLD THE HANDMAIDEN OF THE LORD). The Annunciation painted by Dante Gabriel Rossetti in 1850; now in the National Gallery at London. The Virgin is a portrait of the artist's sister, Christina.

ECCE HOMO (BEHOLD THE MAN). The presentation in art of the passion and capacity for suffering of Christ; a favorite theme of painters. The most notable examples are by Correggio, in the National Gallery at London; Guido, in Dresden Gallery; Murillo, in Madrid and Cadiz galleries; and Titian, in Madrid and Vienna museums.

EGYPT AWAKING. A statue by Elwell; in Paris. A typical Egyptian female figure, seated, with arms uplifted and stretching as one who has just awakened.

ELEVATION OF THE CROSS. Raising the cross after Christ had been fastened upon it; a favorite subject. The best are by Rubens, in the Antwerp Cathedral, and by Van Dyck, in Notre Dame at Courtrai, Belgium.

ELGIN MARBLES. Taken from Athens in 1803 by Lord Elgin and sold for £35,000 ($170,000) to the British government; now in the British Museum. Among them are parts of the frieze of the Parthenon. Considered the finest examples of ancient art. Probably the work of Phidias about 440 B. C.

EMANCIPATION GROUP. Lincoln and a kneeling slave, by Thomas Ball in 1875; in Washington and a replica in Boston (1877). The conception of Lincoln is a lofty one; and the great theme is treated with a high degree of artistic emotion.

THE ENTOMBMENT. TITIAN. Prado Museum, Madrid.

ENTOMBMENT. Bearing the body of Christ to the tomb. Among the most celebrated is that by Titian, in the Louvre, painted in 1523; owned by Charles I., and on his execution passed to Louis XIV. It is one of the most famous pictures in the world. Among the best known are those by Caravaggio, in the Vatican at Rome; Garofalo, in the Borghese Palace at Rome; Raphael, in the Borghese Palace at Rome, and Titian, in the Madrid Museum.

ETHAN ALLEN, STATUE OF. By Larkin G. Mead; in the National Hall of Statuary in the Capitol at Washington; the contribution by Vermont. It is remarkably well done and full of life.

FARNESE BULL. A marble group credited to Apollonius and Tauriscus of the third century B. C.; found in the ruins of the Baths of Caracalla in 1546 and placed in the Farnese Palace at Rome; now in Naples Museum. Zethus and Amphion, sons of Antiope, are tying Dirce to the horns of a bull to punish her for ill-treating their mother.

FARNESE FLORA. A colossal statue of the goddess found in 1546 in the ruins of the Baths of Caracalla; placed in the Farnese Palace; now in the Naples Museum. The figure is 11½ feet high; one of the most beautiful of the ancient colossal statues.

FARNESE HERCULES. Credited to Glycon of Athens in the first century B. C.; perhaps a copy of the Hercules of Lysippus. Hercules stands leaning upon his club with his right hand behind him; found in the Baths of Caracalla in 1540; placed in the Farnese Palace; now in the Naples Museum.

FARNESE JUNO or **HERA.** Supposed to be a copy of the gold and ivory statue, by Polyclitus, erected near Mycenae about 420 B. C.; formerly in the Farnese Palace; now in the Naples Museum.

FARRAGUT, STATUE OF. By Saint-Gaudens; in Madison Square, New York. One of America's most perfect public memorials.

FAUN OF PRAXITELES. Statue of a faun or satyr leaning upon a tree stump; by Praxiteles. The finest copy is in the Capitoline Museum at Rome.

FEAST IN THE HOUSE OF LEVI. Painted by Paolo Veronese in 1573; now in the Venice Academy. It is 19 feet 8 inches by 46 feet. The theme is taken from Luke v. 29.

FEAST OF THE ROSE GARLANDS. Painted by Albrecht Dürer in 1506; now in the Prague Museum. The Virgin and Child are enthroned under a canopy; angels hold a diadem over the Virgin's head; she crowns the emperor and the Child crowns the pope; both recipients kneel before the Virgin and Child.

FIDES. Painted in 1877 by Edward Burne-Jones, the great English exponent of the romantic school. His work is characterized by idealism and abstract beauty.

FLIGHT INTO EGYPT. Mary and Joseph fleeing into Egypt with the infant Jesus, to escape the jealous fear of Herod. Among the most famous are those by Claude Lorrain, in the Dresden Museum; Murillo, in collection of the duchesse de Galliera in Paris; Rubens, in the Louvre; and Tintoretto, in Venice.

FRIEDLAND or **1807.** Painted by Meissonier in 1878; now in the Metropolitan Art Museum in New York. A review of the victorious French army after the battle of Friedland (1807), which made Napoleon dictator of Europe. The Twelfth Cuirassiers gallop through the trampled grain and salute Napoleon.

GALLAUDET GROUP. By French; in the Columbian Institution for Deaf Mutes in Washington. Dr. Gallaudet is represented seated in a chair with a little girl standing beside him. The deaf-mute is learning to talk. This is undoubtedly an exquisite work.

GANYMEDE AND THE EAGLE. A marble group in the Vatican, supposed to be a copy of the bronze done by Leochares in Athens, representing Ganymede being carried to heaven by Zeus in the form of an eagle.

GARFIELD. A bronze statue by Niehaus in Cincinnati; also a marble statue by the same at Washington.

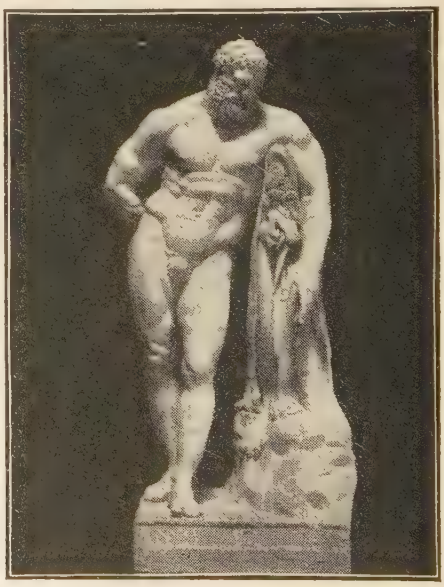
GAUL AND HIS WIFE, THE. A famous group from Asia Minor, probably in the third century B. C.; now in the Villa Ludovisi at Rome. The Gaul is killing himself after having killed his wife; one of the most pathetic studies of antiquity.

GIRLHOOD OF SAINT GENEVIEVE. Painted by Puvis de Chavannes; now in the Panthéon at Paris. St. Germain hangs a medal, marked with a cross, around the neck of St. Geneviève, the patron saint of Paris, and dedicates her to the service of God.

GIORNO, IL, or **THE DAY.** Painted by Correggio in 1523; now in the Parma Gallery. The Virgin, holding Jesus, is seated with Magdalen on her right and St. Jerome, with lion, on the left.

GRACES, THE THREE. Painted by Raphael in 1504; now in the Chantilly Gallery in France. Though only seven inches long and five inches high, it was bought in 1885 by the duc d'Aumale for £25,000.

GREEK SLAVE, THE. A marble statue by Hiram Powers in 1847; now in the Corcoran Art Gallery at Washington. A nude figure of a woman, chained and exposed for sale in the slave market. Its marvelous popularity in its day far exceeded its artistic merits. Many copies were made by Powers. It is one of the first nude sculptures produced by an American.



FARNESE HERCULES. Naples Museum.

HALE, NATHAN. A statue by Macmonnies; in City Hall Park, New York City. It represents the last moments of the patriot's life as he stands, bound, and utters his defiant words, "I only regret that I have but one life to lose for my country."

HARVARD, JOHN, STATUE OF. By French (1882); at Cambridge. A very effective and truly artistic work.

HAY WAIN. One of the finest paintings of Constable, now in the National Gallery, London. It is a simple English landscape painted in the realistic style of this great innovator.

THE HAY WAIN. CONSTABLE. National Gallery, London.

HEMICYCLE, LE, or **THE SEMICIRCLE.** Painted by Paul Delaroche upon the amphitheater wall of the Palais des Beaux-Arts in Paris in 1837 and 1841. It represents art and contains 75 colossal figures of the world's great artists.

HENRY IV. AND THE SPANISH AMBASSADOR. Painted by Dominique Ingres in 1817; owned by Baron Rothschild. The proud ambassador, admitted to an audience with the king, is horrified to find the king upon all fours romping with his children, one of whom is riding upon his back.

HERCULES, DEATH OF. Painted by Guido; now in the Louvre. Hercules, desperate through the agony of the poisoned tunic, lies upon a funeral pyre on Mount Oeta.

HERCULES STRANGLING THE SERPENTS. Painted by Sir Joshua Reynolds in 1788 for Catherine II.; now in the Hermitage in St. Petersburg. The picture is allegorical of the early struggles of Russian national life.

HERMES OF PRAXITELES. Statue by Praxiteles; found in 1877 in the excavation of the Temple of Hera at Olympia. The god is holding the infant Dionysus on his arm; now in the Olympia Museum.

HIERONYMUS HOLZSCHUHER. DÜRER. National Gallery, Berlin.

HIERONYMUS HOLZSCHUHER. A portrait in the Berlin Museum, painted by Albert Dürer of Nuremberg. It is a strong and masterly work, but evidently inspired by the Van Eycks.

HILANDERAS, LAS, or **THE TAPESTRY WEAVERS.** Painted by Velasquez about 1656; now in the Madrid Museum. This masterpiece represents women at work in the royal tapestry manufactory of Santa Isabel at Madrid.

HILLE BOBBE. Painted by Frans Hals about 1650; now in the Berlin Museum. The witch of Haarlem is seated at a table, an open beer stein before her on the table, and an owl perched on her left shoulder. There is a similar picture in the Metropolitan Art Museum in New York.

HOLY FAMILY, THE. A favorite subject with the great painters. The most famous are by Fra Bartolommeo, at Panshanger House, England, and in the Pitti Palace at Florence; Michelangelo, in the Uffizi Gallery at Florence; Domenichino, in the Louvre; Bernardino Luini, in the Louvre; Murillo, in Madrid, at the Hermitage, in the Louvre, in the Metropolitan Art Museum at New York, and in the National Gallery in London; Sebastiano del Piombo, in the Baring Collection in London; Raphael, in the Louvre and at Munich; Rembrandt, in the Hermitage; Rubens, in the Hermitage, the Pitti Palace, Vienna Museum, and Windsor Castle; Andrea del Sarto, the Pitti Palace, Louvre, and National Gallery; Titian, in the Louvre; and Paolo Veronese, in the Uffizi in Florence.

HOLY NIGHT. CORREGGIO. Royal Gallery, Dresden.

HOLY NIGHT. One of the great altarpieces painted by Correggio in 1529, and now in the Royal Gallery, Dresden. It is the birth of Christ, with the surrounding darkness made more intense by contrast with the light which radiates from the newborn babe and which illumines the Madonna and the faces of those around.

HORSE FAIR, THE. Painted by Rosa Bonheur in 1853; now in the Metropolitan Art Museum in New York. It is 8 feet high and 15 feet long.

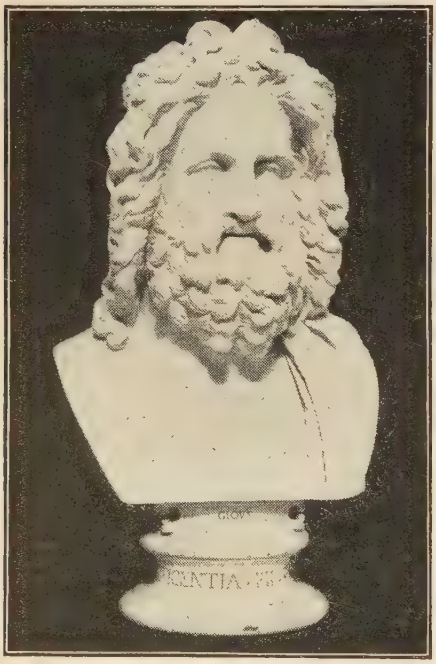
HORSE TAMERS. Group by Macmonnies; at the entrance to Prospect Park in Brooklyn. A young trainer upon the back of one plunging horse seeks to tame another.

HUGUENOT, A. Painted by Sir John Everett Millais in 1852; owned by Mrs. Miller of Preston, England. A Catholic woman seeks to save her Huguenot lover by binding a white scarf around his arm on the morning of the massacre of St. Bartholomew (August 24, 1572). The lover gravely declines the badge.

I FEEL TWO NATURES STRUGGLING WITHIN ME. A group by George Grey Barnard (1894); in the Metropolitan Museum in New York. A victor bending over a prostrate vanquished foe. Remarkable for its vigor and impressiveness.

IMMACULATE CONCEPTION, THE. Painted by Murillo in 1678; now in the Louvre; carried from Spain by Marshal Soult; sold in Paris, in 1852, to the French government for 615,000 francs, the largest sum paid up to that time for any picture.

ISLE OF THE BLESSED. Sometimes called the Island of Death. A striking example of the artistic conceptions of Arnold Böcklin. These works were much ridiculed when first exhibited.



JUPITER OF OTRICOLI. Vatican, Rome.

JACKSON MONUMENT. The first equestrian statue of the United States, executed by Clark Mills in 1853; in Lafayette Square in Washington, opposite the White House.

JOAN OF ARC. Painted by Jules Bastien-Lepage in 1880; now in the Metropolitan Art Museum in New York. Dressed as a peasant girl, she stands under the trees looking at the spectral figures of angels and knights in the clouds.

JOAN OF ARC IN PRISON. Painted by Paul Delaroche in 1824; owned by the duke of Padua. Joan in her cell and bound in chains is being interrogated by the bishop of Winchester, while a clerk records her answers in a book.

JOHN THE BAPTIST, ST. Painted by Leonardo da Vinci; now in the Louvre. He is clad in a lambskin, holds a cross in his left hand, and points upward with his right. Francis I. of France owned it; Louis XIII. gave it to Charles I. of England; and upon his death it went to Louis XIV. Other famous pictures on this subject are by Guercino, in the Capitoline Museum; Murillo, at Madrid and Seville; and Andrea del Sarto, in the Pitti Palace, in Florence.

JOHN THE EVANGELIST, ST. Painted by Murillo; now in the Leigh Court Collection in England. The saint is recording the revelation in a book as he is seated on a rock.

JOSEPH AND THE INFANT CHRIST. Painted by Murillo. Two are in the Hermitage, one in Seville, and others in private collections.

JOSEPHINE, CORONATION OF. Painted by Louis David in 1808; now in the Versailles Museum. It is 20 feet by 33 feet. It depicts the coronation at Notre Dame in Paris, December 6, 1804.

JUDGMENT OF PARIS. Painted by Rubens; now in Dresden Museum. A second, by the same, is in the National Gallery at London. Paris, advised by Mercury, holds the golden apple and is deciding upon the relative beauty of Juno, Minerva, and Venus.

JUDITH AND HOLOFERNES. Judith, aided by her servant, is cutting off the head of Holofernes. By some artists she is represented as carrying it. The most famous pictures are by Michelangelo, in the Sistine Chapel; Tintoretto, three pictures in Madrid; Horace Vernet, in the Louvre; Artemisia Gentileschi; in the Pitti Palace; Cristofano Allori, in the Pitti Palace; Philip van Dyck, in The Hague Museum; Andrea Mantegna, in Berlin Museum; and Paolo Veronese, in the Vienna Museum.

JUPITER OF OTRICOLI. The bust of Jupiter found at the Umbrian village of Otricoli, and now in the Vatican Museum at Rome, is believed to have been copied from the historic Olympian statue, the famous masterpiece of Phidias, which was reckoned among the seven wonders of the ancient world.

KNIGHT'S VISION. Painted by Raphael in 1504; now in the National Gallery in London. A young knight sleeps on his shield at the base of a laurel tree. Two maidens, representing fame and pleasure, appear in his dream.

LADY JANE GREY, EXECUTION OF. Painted by Paul Delaroche in 1834. She is kneeling by the block on the scaffold in the Tower of London (February 12, 1554). A priest whispers consolation to her; the executioner stands ready with his ax; and on the left two women stand weeping.

LANZAS, LAS, or **THE LANCES.** Painted by Velasquez in 1647; now in the Madrid Museum. It represents the surrender of Breda in 1625. Justin of Nassau surrenders the keys of the city to the marquis de Spinola, the Spanish commander, in the presence of the Spanish and Flemish armies. It is one of the greatest of historical paintings.

LAOCOON. A celebrated group in the Vatican, the work of three Rhodian sculptors, about 50 B. C. A Trojan priest, gripped in the deadly coils of the serpents, sees the life of his two sons being crushed

LAOCOON. Vatican, Rome.

out beside him, while he, tortured alike by his pain and powerlessness, utters a last cry of exquisite anguish. This pathetic group inspired the *Laokoon* of Lessing.

LAST JUDGMENT. Painted by Michelangelo in 1534-1541; now in the Sistine Chapel of the Vatican. It is a fresco on the end of the chapel wall opposite to the door and measures 44 feet wide and 54 feet high. It contains 314 figures. Other artists who have treated the same subject are Fra Angelico, Fra Bartolommeo, Rubens, Luca Signorelli, and Roger van der Weyden. Tintoretto's great work in Santa Maria dell' Orto in Venice is 30 feet wide and 60 feet high.

LAST SUPPER, THE. Painted by Leonardo da Vinci in 1498 on the wall of the refectory in the convent of Santa Maria delle Grazie at Milan. It is in oil and measures 15 feet high and 28 feet long. The refectory was used as a stable for dragoons in 1796. This, with dampness and repainting, has nearly

destroyed it. Fra Angelico, Philippe de Champaigne, Murillo, Raphael, Holbein, Tintoretto, Titian, and Rubens have treated the same theme.

LAST TOKEN, THE. Painted by Gabriel Max in 1874; now in the Metropolitan Art Museum in New York. A Christian maiden martyr in the Colosseum at Rome looks anxiously up to see what sympathizing spectator has cast a rose at her feet, at the moment when two lions and a tiger have issued from their cages.

LATONA AND HER CHILDREN. A marble group by Rinehart in 1874; in the Metropolitan Museum in New York. The queen mother bends tenderly over her sleeping children. Noted for its "serene poetic charm."

LAZARUS, RAISING OF. Painted by Sebastiano del Piombo in 1519; now in the National Gallery in London. It measures 12½ feet by 9 feet 5 inches. Lazarus, in obedience to Christ's command, has risen from the grave and is putting off his grave clothes, while Mary kneels at the feet of Christ. This is one of the world's most highly esteemed paintings. It was painted with the hope of rivaling the Transfiguration of Raphael.

LEO X., POPE, PORTRAIT OF. A famous portrait by Raphael in the Pitti Palace in Florence, Italy. Dressed in a loose white robe, with fur trimmed sleeves, red velvet collar and cap, the Pope sits at a table with a book before him, holding an eyeglass in one hand. Behind him stand his two nephews, Cardinal Giulio de' Medici (Clement VII.) at the right, and Cardinal Luigi de' Rossi, his secretary, at the left. One of the most celebrated portraits in the world. It was carried to Paris in 1797, returned in 1815.

LIBERTY or FREEDOM. The figure on the dome of the Capitol at Washington, by Crawford. The original plaster cast is in the National Museum. The details do not bear out the impressive effect which the statue on the dome gives. Cast by Clark Mills and erected in 1863.

LIGHT OF THE WORLD. Painted by William Holman Hunt in 1854; now in Keble College at Oxford. Christ stands before a closed door, bearing a lantern in his hand.

LION HUNT. Painted by Rubens; now in the Munich Gallery. It measures 8 1-3 feet by 12 1-3 feet. A contest between lions and mounted hunters.

LION OF LUCERNE. Carved by Thorwaldsen on the face of a cliff at Lucerne, in Switzerland. It is of colossal dimensions and represents a crouching lion pierced by a spear and dying; to commemorate those of the Swiss Guards who died defending Louis XVI. in the Tuileries during the Revolution (August 10, 1792).

MADONNA. CARLO DOLCI.

LION'S BRIDE, THE. Painted by Gabriel Max to illustrate Uhland's poem. The daughter of the keeper of a menagerie enters the lion's cage the day before her wedding day to take farewell of the lion. She is killed by the beast, which crouches over the form of the girl and glares at her lover, who is seen through the bars of the cage with a pistol in his hand.

LOGAN, STATUE OF GENERAL. An equestrian monument by Simmons (1901); in Iowa Circle at Washington. An elaborate bronze memorial; remarkably successful.

LOVE AND DEATH. Painted by George Frederick Watts in 1877. Death, clad in white, pushes Love against the roses as he forces his way into a house.

LOVE AND LIFE. Painted by George Frederick Watts in 1885. Love, a winged youth, leads Life, a young girl, up a steep hill, while flowers spring into life in his footsteps.

LYCURGUS. Statue by George Edwin Bissell; on the Appellate Court Building in New York.

MADONNA. A favorite theme of painters. The most famous are:—

Madonna. A typical painting of the Florentine Carlo Dolci, and one that has been frequently copied. These Madonnas of Dolci are frequently seen in European galleries, though the Louvre has not so far honored the painter.

MADONNA OF THE GOLDFINCH. RAPHAEL.
Uffizi Gallery, Florence.

Madonna Aldobrandini, by Raphael in 1510 and 1511; now in the National Gallery in London; formerly in the Aldobrandini collection at Rome. Sometimes called the "Garvagh Madonna," from its former owner, Lord Garvagh.

Madonna degli Ansidei or the *Blenheim Madonna,* painted by Raphael in 1506 for the Ansidei family of Perugia; now in the National Gallery of London. It was bought from Blenheim Palace in 1884 for £70,000. The finest Raphael in England.

Madonna del Baldacchino or *Madonna of the Canopy,* by Raphael in 1508; now in the Pitti Palace at Florence. So called because the Virgin is seated under a canopy holding the infant Jesus in her lap.

Madonna del Campanello or Madonna of the Bell, by Bartolommeo Schidone; now in the Pitti Palace at Florence. The infant Jesus is reaching out for a bell which the Virgin holds in her hand.

Madonna del Candelabri or *Borghese Madonna,* by Raphael in 1516; now in the Butler-Johnstone collection in London. A burning candelabrum or torch is held by angels on both sides of the Mother and Child. It was formerly in the Borghese Palace at Rome.

Madonna del Cardellino or *Madonna of the Goldfinch,* by Raphael in 1506; now in the Uffizi at Florence. St. John offers a goldfinch to the Child.

Madonna della Casa d'Alba or *Madonna of the Alva Family,* by Raphael in 1508 and 1509; now in the Hermitage at St. Petersburg. The Mother leans back against a tree trunk, while St. John hands the Child a cross.

Madonna della Cesta or *Madonna of the Basket*, by Correggio in 1520; now in the National Gallery in London. A basket of linen stands near the Virgin.

Madonna del Coniglio or *Madonna of the Rabbit*, by Titian in 1530; now in the Louvre. St. Catherine, with Jesus in her arms, stoops to look at a rabbit which the Virgin holds in her hand.

Madonna, Connestabile or *Staffa*, by Raphael about 1502 or 1503; now in the Hermitage. The Connestabile-Staffa family of Perugia sold it to the emperor of Russia in 1871, for 330,000 francs.

Madonna di Foligno, by Raphael in 1511; now in the Vatican at Rome. The Mother and Child look down from the clouds upon St. Jerome, St. Francis, and St. John the Baptist. Formerly in the Convent of St. Anna at Foligno.

MADONNA, LA BELLE JARDINIERE. RAPHAEL.
Louvre, Paris.

Madonna, "La Belle Jardinière." One of the beautiful Madonnas painted by Raphael between 1504 and 1508; now in the Louvre. This is one of the most perfect of his creations, and represents the Virgin with the infants, Jesus and John, in the midst of a beautiful landscape.

Madonna, Orleans, by Raphael about 1506; now in the Château de Chantilly in France. The duc d'Orleans owned it in 1701. The duc d'Aumale paid 150,000 francs for it in 1869.

Madonna del Pesce or *Madonna of the Fish*, by Raphael about 1514; now in the Madrid Museum. On the left of the enthroned Mother and Child the archangel Raphael presents Tobias holding the miraculous fish.

Madonna of the Rocks, by Leonardo da Vinci; now in the National Gallery in London. The Child is seated upon the ground and blesses the infant St. John. In the background there are a grotto and high rocks. This is a replica, with some modifications, of the one in the Louvre.

Madonna della Rosa, by Parmigianino; now in the Dresden Gallery. The Child holds a rose in his hand. Raphael, in the Madrid Museum, and Sassoferrato, in the Turin Gallery, have the same idea.

Madonna del Rosario, by Domenichino in the Bologna Gallery; by Murillo in the Dulwich Gallery, in the Pitti Palace, and at Madrid; by Caravaggio in Vienna; by Van Dyck in Palermo; and by Sassoferrato in S. Sabina at Rome. Jesus scatters roses from the clouds upon groups invoking the Virgin's aid through the rosary.

Madonna del Sacco or *Madonna of the Sack*, by Andrea del Sarto in 1525; now in SS. Annunziata de' Servi at Florence. At the left of the Mother and Child St. Joseph leans upon a sack reading.

Madonna della Scodella or *Madonna of the Cup*, by Correggio in 1527 and 1528; now in the Parma Gallery. The Virgin holds a cup or plate in her hand.

Madonna della Sedia or *Madonna of the Chair*, by Raphael in 1516 and 1517; now in the Pitti Palace at Florence. The Virgin, seated in a chair, clasps the infant Jesus in her arms, with the infant St. John on the right in adoration.

MADONNA OF THE CHAIR. RAPHAEL.
Pitti Palace, Florence.

Madonna de la Servilleta or *Madonna of the Napkin*, by Murillo in 1676; now in the Seville Museum. Said to be painted upon a dinner napkin.

Madonna di San Sisto, or the *Sistine Madonna*, or the *Madonna of St. Sixtus*, by Raphael in 1518; now in the Dresden Gallery. The Virgin, holding Jesus in her arms, stands upon clouds, surrounded by a glory of cherubim, between green curtains. On the left St. Sixtus (Pope Sixtus II.) kneels; St. Barbara on the right; and two angels lean upon a balustrade below.

Madonna with Santa Anna, by Leonardo da Vinci; now in the Louvre. The Virgin, seated upon the knee of Santa Anna, leans forward to take the Child, who caresses a lamb.

Madonna della Tenda or *Madonna of the Curtain*, by Raphael in 1516; now in the Munich Gallery. There is a green curtain in the background.

MAGDALEN or **THE READING MAGDALEN.** Painted by Correggio about 1533; now in the Dresden Gallery. It is only 12 inches high and 15 inches wide. It was for years carefully preserved in the Castle of Modena. The Magdalen reclines upon the ground supporting her head upon her right hand and holds a book in her left.

MAIDEN RUNNER, THE. A marble statue, supposed to date from the fifth century B. C.; now in the Vatican. The runner is just starting, with the body bent forward and the right foot raised.

MAN WITH THE GLOVE or **L'HOMME AU GANT.** A noted portrait painted by Vecelli Tiziano, or Titian, as he is more popularly called. It is in the Louvre, Paris. It is an interesting specimen of the work of this greatest painter of the Venetian school.

MAN WITH THE HOE. Painted by Jean François Millet in 1862. It represents a weary peasant leaning upon a clumsy hoe. It suggested Edwin Markham's well-known poem written in 1899.

MARCH OF ATTILA. A fresco painted by Raphael in 1510; in the Vatican. Attila, on his way to Rome, sees Saints Peter and Paul, guardians of the city, in the clouds, with swords in their hands. He submits to Pope Leo I., who is on the left with a retinue.

MARGARET, ST. Painted by Raphael about 1518; in the Louvre. The saint, a symbol of innocence, bears a palm in her right hand, presses one foot upon a huge dragon, the devil, who came to tempt her and whom she overcame.

MARRIAGE A LA MODE. A series of six well-known pictures by Hogarth, painted about 1750; now in the National Gallery in London.

MARRIAGE FEAST AT CANA. Painted by Paolo Veronese in 1563; in the Louvre. Based upon John ii. 1-12. One of the largest easel canvases ever painted —21 feet wide and 31 feet high. There are in it over 130 figures, portraits of contemporaries, in Venetian costume.

MARTYR, THE CHRISTIAN. Painted by Paul Delaroche in 1855; now in a private collection in Paris. The body of a young girl, with her hands bound, is floating down the river, the aureole about her face reflected in the dark waters. The prow of a galley and two figures on the bank complete the background.

MARTYRDOM OF ST. GEORGE. Painted by Paolo Veronese about 1568 in the church of San Giorgio Maggiore in Verona. St. George kneels with his eyes raised to heaven, ignoring a priest of Apollo; while beside him are the executioners and above him the Virgin and Child with attendants.

MARTYRDOM OF ST. LAWRENCE. Painted by Rubens; now in the Old Pinakothek at Munich. Tortured to death upon a gridiron because, as archdeacon under Pope Sixtus II. at Rome, St. Lawrence refused to give to the Roman prefect the treasures of the church. Titian, in the church of Gesuiti at Venice, and also in the Escorial, treated the same subject.

MARTYRS, CHRISTIAN. Painted by Gérôme; now in the Walters Collection at Baltimore. In the center of the arena of the Circus Maximus at Rome a number of Christian prisoners are either bound to crosses to be devoured by wild beasts, or, smeared with pitch, are to be burned alive. A number of wild beasts come stealthily and fearfully from their dens. Gustave Doré treated the same subject in 1874.

MASSACRE OF SCIO. Painted by Delacroix in 1824; now in the Louvre. The canvas—13 feet 10 inches by 11 feet 6 inches—depicts many Greek families upon the shore, after the massacre, awaiting their fate. A Turk is dragging a young girl fastened to his horse, while the city is burning in the distance.

MASSACRE OF THE INNOCENTS. Painted by Rubens in the Old Pinakothek at Munich; by Guido Reni, Garofalo, Tintoretto, and others.

MATER DOLOROSA or **THE SORROWING MOTHER.** Painted by Titian in 1554; now in the Madrid Museum. A bust picture of the Virgin in a violet tunic, with a blue mantle drawn over her white cap; her hands raised toward heaven as she laments the death of her Son.

MEDUSA, RAFT OF THE. Painted by Jean Louis Géricault (1791-1824) in 1819. The *Méduse* was wrecked (July 2, 1816) on her way to Senegal. The passengers sought safety on a raft. Of 149, only 15 survived the privations of 12 days. The canvas measures 23½ feet by 16 feet. It is in the Louvre.

MELEAGER AND ATALANTA. Painted by Rubens; now in the Munich Gallery. Meleager is presenting the head of the Calydonian boar to Atalanta. Similar works by Rubens are in Dresden, Madrid, Vienna, and the Hermitage.

MERCY'S DREAM. Painted by Daniel Huntington in 1850; now in the Corcoran Gallery at Washington. It is a scene from *Pilgrim's Progress*, where Mercy dreams that, despite her fears of not gaining admission to the Celestial City, an angel comes and dresses her in silver and gold and places a crown upon her head.

MERLIN, THE BEGUILING OF. Painted by Burne-Jones; now in a private collection in England. To illustrate Tennyson's *Vivien*. Vivien, in the foreground, is repeating the magic words Merlin has taught her and, in the background, Merlin is changing under the spell.

MICHELANGELO. Statue by Bartlett in bronze; in the Congressional Library at Washington. An extraordinary work, full of dignity and lofty personality.

MICHAEL, ST. Painted by Raphael in 1518; now in the Louvre. St. Michael, descended from heaven, stands with his right foot upon Satan, who lies prostrate upon the ground, looking upward. The saint grasps his spear with both hands about to strike. The "Little St. Michael" by Raphael is also in the Louvre.

MINUTE MAN. Statue by French (1873); in Concord. This was the great sculptor's first work, with almost no tuition. A wonderfully clever first effort.

MIRACLE OF ST. MARK. Painted by Tintoretto about 1548; in the Venice Academy. St. Mark flies down from heaven and prevents some Turks from torturing a Christian prisoner stretched upon the ground and surrounded by executioners and others. Regarded as the artist's greatest work.

MIRROR OF VENUS. Painted by Burne-Jones in 1877. A group of maidens looking at their reflections from a pool of clear water.

MISERS, THE. Painted by Quentin Massys; now in Windsor Castle. A man and his wife count up their wealth of coins and jewels, which lie upon a table along with an inkstand, purse, and other articles. A parrot is on a perch behind them.

MONA LISA. Painted by Leonardo da Vinci in 1500-1504; now in the Louvre. It is the portrait of Mona or Madonna or Madame Lisa Gherardini, third wife of Francesco del Giocondo; hence she is known as La Gioconda. Her face bears a remarkable, mysterious smile.

MONA LISA. DA VINCI. Louvre, Paris.

MONARCH OF THE GLEN. Painted by Landseer in 1851; in the Eaton Collection in London. It represents a stag in the Highlands of Scotland proudly breathing defiance to his rivals. It sold in 1884 for £6,510.

MOSES. MICHELANGELO.
Church of San Pietro in Vincoli, Rome.

MOSES. A statue by Michelangelo, originally sculptured for the tomb of Pope Julius II., but now in the Church of San Pietro in Vincoli in Rome. It is a marvelous creation, full of repressed wrath and passion.

MUSES, DANCE OF THE. Painted by Giulio Romano (1492-1546), a pupil of Raphael; in the Pitti Palace at Florence. Apollo dances in a circle with the nine muses, holding each other's hands.

MUSIDORA. Painted by Thomas Gainsborough; in the National Gallery at London. Musidora, from Thomson's *Seasons*, is seated upon the bank of a shaded stream. She has one foot in the water and is loosening the sandal from the other.

NAPOLEON CROSSING THE ALPS. (1) Painted by Louis David in 1805; now in the Versailles Museum. Napoleon, upon a rearing horse, points upward. (2) Painted by Paul Delaroche; owned by Lord Onslow in England. This is regarded as a more faithful and less imaginary picture than the former.

NAPOLEON IN 1814. Painted by Meissonier in 1862; in a private collection in Paris. Napoleon, clad in gray overcoat and mounted upon a white Arabian horse, looks across a battlefield. Two mounted officers await orders. It is only 12 inches by 9 inches. Ruskin paid 1,000 guineas for it in 1868; it brought 5,800 guineas in London in 1882; and 128,000 francs in Paris in 1886.

NAPOLEON IN THE RETREAT FROM RUSSIA. Painted by Meissonier in 1865; now in the Wallace Collection in London. Napoleon and his staff retreat along an icy road, while the army crowds along in a parallel line. It is sometimes called the "Retreat from Moscow."

NAPOLEON, STATUE OF. By Launt Thompson; in the Metropolitan Museum. A thoughtful and highly finished work.

NATIVITY, THE. A favorite subject with painters. Among the best are pictures by Annibale and Ludovico Carracci, in the Louvre; Correggio (Holy Night), in Dresden Museum; Domenico Ghirlandajo, in Dresden Museum; Giulio Romano, in the Louvre; Filippo Lippi, in Florence Academy; and Rembrandt, in Munich Gallery.

NAUSICAA AND HER MAIDENS. Painted by Sir Edward J. Poynter for the earl of Wharncliffe at Wortley Hall, England. Nausicaa and her maidens are playing ball on a grass plot near the sea.

NIOBE. Uffizi Gallery, Florence.

NIAGARA. Painted by Frederick Edwin Church in 1857; now in the Corcoran Art Gallery at Washington. A view of the falls from the Canadian side. It won a second class medal at the Paris Exposition in 1867.

NIGHT AND MORNING. Marble bas-reliefs by Thorwaldsen; in the Thorwaldsen Museum at Copenhagen. Night sweeps through the air clasping sleeping children in her arms, while Morning scatters flowers.

NIKE or VICTORY. Statue of the goddess of victory by Paeonius about 436 B. C.; found in the German excavation at Olympia of 1875. The head and arms are wanting. The goddess has just alighted with her garments floating behind.

NIOBE. A statue of Niobe with her youngest daughter, in the Uffizi Gallery, Florence. This is a copy of a classic group executed by the school of Scopas. It represents the devoted Niobe shielding her child, who has been struck down by the arrows of Apollo and Artemis.

NOLI ME TANGERE or TOUCH ME NOT. The interview between Christ and Mary Magdalen after the resurrection. The most noted examples are by Correggio, in the Madrid Museum, and Titian, in the Madrid Museum and in the National Gallery at London.

NYDIA. Marble statue by Rogers; in the Art Institute at Chicago. It represents a blind girl, with left hand to the ear to aid her listening, her right hand grasping a staff. A very beautiful and popular work.

OATH OF THE HORATII. Painted by Louis David in 1785; now in the Louvre. The Horatii receive the swords from their father and swear to conquer the Curiatii or die.

ONE MORE SHOT or WOUNDED TO THE REAR. A group by Rogers. A wounded soldier is binding his leg. His companion, with his left arm in a sling, endeavors to load his rifle once more before retreating. One of the many popular works of this artist.

O'REILLY MONUMENT. Memorial to John Boyle O'Reilly by Daniel French; in Boston, in the Back Bay Fens. Erin sits in sad pride twining a wreath of laurel, while Patriotism and Poesy attend her.

ORPHEUS AND CERBERUS. A marble statue by Thomas Crawford in 1839; now in the Boston Museum. Orpheus shades his eyes as he peers eagerly and intently into the gloom of Hades in his search for Eurydice.

PARADISE. Painted by Tintoretto in 1588; in the Doge's Palace at Venice. The largest canvas oil painting in the world—74 feet long and 30 feet high. There are more than 400 figures in it. Christ and the Virgin are surrounded by archangels, angels, and saints.

PARNASSUS. Painted by Raphael in 1511; a fresco in the Vatican at Rome. Apollo, with the Muses about him, sits playing a lyre on the summit of a mountain. Many illustrious poets are grouped in the foreground.

PAST AND PRESENT OF AMERICA. A pedimental group, the chief decoration of the Senate wing of the Capitol at Washington, by Crawford. America in the center offers a laurel wreath to those of her citizens who merit it. The rising sun is emblematical of her youth and the eagle of her strength. The pioneer, hunter, Indian, army and navy, mechanic, merchant, student, and teacher are represented.

PAUL, CONVERSION OF ST. Painted by Rubens; now in a private collection in England. It illustrates Acts ix. 3-19.

PETER, CHRIST'S CHARGE TO ST. Painted by Pietro Perugino in 1486; in the Sistine Chapel of the Vatican. Christ is giving the keys to St. Peter, who kneels to receive them. It has been treated by other artists, including Rubens, whose work is in Hertford House, London.

PETER, DELIVERANCE OF ST. Painted by Raphael in 1514; a fresco in the Vatican at Rome. It is in three divisions. In the middle, the angel awakens Peter; in the right, Peter and the angel step lightly over two sleeping guards; in the left, the keepers are dismayed at the escape of their prisoner.

PETER, MARTYRDOM OF ST. Painted by Guido; in the Vatican at Rome. St. Peter is being fastened to the cross, head downwards, by two executioners. Other artists who have treated this subject are Caravaggio, in the Hermitage; Anthony van Dyck, in Brussels Museum; Guercino, in Modena Gallery; and Rubens, in St. Pierre, Cologne.

PIETA. The lamentations of the Virgin and the women over the body of Christ after it was taken down from the cross. Among the most famous are those by Correggio, in the Parma Gallery; Van Dyck, in Munich; Quentin Massys, in Antwerp; Murillo, in Seville; Perugino, in Florence Academy; Rubens, in Brussels; Andrea del Sarto, in Vienna; and Titian, in Venice Academy.

PILGRIMS, EMBARKATION OF THE. Painted by Robert Walter Weir in 1845; in the rotunda of the Capitol at Washington. The Pilgrims are boarding the *Speedwell* at Delft Haven, in Holland, on July 22, 1620, on their way to take the *Mayflower* at Southampton. This picture is reproduced upon the backs of $50 United States national bank notes.

POCAHONTAS, BAPTISM OF. Painted by John G. Chapman; in the rotunda of the Capitol at Washington. Pocahontas is being baptized just before her marriage

to John Rolfe at Jamestown, Va., in 1613. The picture is reproduced upon the backs of $20 United States national bank notes.

PRESENTATION IN THE TEMPLE. The presentation of Jesus in the Temple (Luke ii. 22). Among the most notable are those by Fra Bartolommeo, Vienna Museum; Andrea Mantegna, Berlin Museum; Guido Reni, Vienna Museum; Rembrandt, The Hague Museum; and Titian, Venice Academy.

PRINCES IN THE TOWER. (1) Painted by Paul Delaroche in 1830; now in the Louvre. Edward V. and Richard, Duke of York, sons of Edward IV., imprisoned in the Tower and murdered by order of their uncle, Richard, Duke of Gloucester (afterward Richard III.), in 1483. (2) Another by Sir John Everett Millais; in Holloway Institute, near London.

PRODIGAL SON, RETURN OF THE. Painted by Murillo in 1670-1674; in Stafford House, London. Among others are those by Rembrandt, Teniers, Guercino, Salvator Rosa, James Tissot, Alphonse Legros, and Dubufe.

PRODIGAL SON, THE. A group by Mozier; in the Pennsylvania Academy of Fine Arts.

PSYCHE, STORY OF. Painted by Raphael and his pupils in 1512-1519; a fresco in the Farnesina Palace at Rome. There are, in all, 12 pictures—two on the ceiling and ten in the arches.

QUEEN LOUISE. Painted by Gustav Karl Ludwig Richter, the history and portrait painter. He was one of the most successful of modern portrait painters. This work was painted in 1879 and is now in the Cologne Museum.

RABBIT ON THE WALL. Painted by Sir David Wilkie in 1815; owned by Sir William Armstrong. A mother holds a baby up to see the shadow of a rabbit made upon the wall by the father with his hands; a girl holds a lighted candle while two boys look on.

RAKE'S PROGRESS, THE. Eight pictures painted by Hogarth in 1735; now in the Soane Museum. They represent the life of a profligate young man who ends his days in madness and poverty.

RAPE OF THE SABINES. Romans seizing Sabine women for wives on the founding of Rome. The most notable examples are paintings by Luca Giordano, in Dresden Museum; Nicolas Poussin, in the Louvre; Rubens, in the National Gallery at London; and Jacques Louis David, in the Louvre.

RAPHAEL LEAVING TOBIAS. Painted by Rembrandt in 1637; in the Louvre. Raphael flies to heaven, leaving Tobias and his father, Tobit; Sarah, wife of Tobias, and Anna, her mother.

READING FROM HOMER. A striking example of the work of Alma-Tadema, who is noted for his archaeological zeal and paintings.

READING THE WILL. Painted by Sir David Wilkie in 1820; in the New Pinakothek at Munich. A lawyer, seated at a table, is reading a will to a large number of interested persons.

REPUBLICAN COURT, THE. Painted by Daniel Huntington in 1876; now in the Metropolitan Art Museum at New York. A reception at the White House during Washington's second administration. There are portraits of Mrs. Washington, Nelly Custis, Mrs. Robert Morris, Alexander Hamilton, John Adams, John Jay, Harriet Chew, Jonathan Trumbull, Oliver Ellsworth, Thomas Jefferson, Duke of Kent, Mrs. George Clinton, Mrs. Ralph Izard, Mrs. John Jay, and others.

RESCUE, THE. A marble group by Greenough in 1851; on the main staircase of the Capitol in Washington. A pioneer is grasping an Indian and saving the life of a woman and child. This and the Washington were the first colossal marble sculpture carved by an American.

RESURRECTION, THE. The most noted examples are by Annibale Carracci, in the Louvre; Filippino Lippi, Munich Gallery; Murillo, Madrid; Perugino, the Vatican; Raphael, the Vatican; Rembrandt, Munich Gallery; and Tintoretto, Pitti Palace.

RING OF ST. MARK. Painted by Paris Bordone (1500-1571) of the Venetian school; now in the Venice Academy. A fisherman presents the ring of St. Mark to the Doge as a proof that the saint had saved Venice from destruction by a flood in 1340.

RUBENS' SONS. Painted by Rubens; in the Liechtenstein Gallery at Vienna. Albert has his arm about Nicolas the younger, who holds a flying bird by a string.

SACRED AND PROFANE LOVE. Painted by Titian about 1503; in the Borghese Palace at Rome. Two women, seated at a fountain in a garden, represent the subject.

SAINT GEORGE. A marble statue by Donatello in the National Museum, Florence; a lifelike image

SAINT GEORGE. DONATELLO. National Museum, Florence.

of the legendary warrior, revealing the vivid naturalism for which Donatello is famous.

SALOME. The niece of Herod the Tetrarch and daughter of Herodias. As a reward for her dancing before her uncle he gave her whatever she might ask. She wished for the head of John the Baptist (Matthew xiv.). Among the most notable paintings of this subject are those by Carlo Dolci, in Dresden; Guercino, in the Louvre; Bernardino Luini, in the Louvre and the Uffizi; Titian, in Madrid; and Henri Regnault.

SAMARITAN, THE GOOD. The scene described in Luke x. 30-37 has been painted by many of the masters. Among them are those by Rembrandt, in the Louvre; Caravaggio, in the Brera at Milan; Paolo Veronese, in Vienna; and Eugene Delacroix, privately owned in Paris.

SAMSON AND DELILAH. The scene described in Judges xvi. Among the best examples of this are those by Anthony van Dyck, in Vienna; Rembrandt, in Cassel Gallery; and Rubens, in the Munich Gallery.

SATYR AND PEASANT. Painted by Jacob Jordaens; in the Old Pinakothek at Munich. A satyr entertains a traveler benumbed by the cold. When they are seated the traveler blows his fingers to warm them and his porridge to cool it. The satyr refuses to entertain any one who can blow both hot and cold.

SCAEVOLA, MUCIUS. Painted by Charles Lebrun about 1643. Scaevola is thrusting his hand into a brazier to burn it off as an indication to King Porsena that his threats cannot frighten him. The king pardoned his attempt upon his life and made a treaty of peace with the Romans.

SCHOOL OF ATHENS. Painted by Raphael in 1511; in the Vatican. It shows a vast portico, having the niches filled with statues of Plato, Aristotle, Diogenes, Alcibiades, Xenophon, Pythagoras, Democritus, Epicurus, Pyrrho, Arcesilaus, Archimedes, Ptolemy, Zoroaster, Raphael, and Perugino.

SEBASTIAN, ST. Painted by Annibale Carracci, in the Louvre; Anthony van Dyck, in the Louvre and at Munich; Guercino, in the Pitti Palace; Guido, in the Pitti Palace, the Louvre, and Bologna Gallery; Mantegna, in Vienna; Rubens, in Berlin; Titian, in the Hermitage, Harrach Galléry at Vienna, and the Vatican; Eugene Delacroix, in the church of Nantua in France; and Camille Corot, in the Walters Collection at Baltimore. The saint, commander of a company of praetorian guards, was bound to a stake and shot to death with arrows, by order of the emperor Diocletian, for becoming a Christian.

SHADOW OF DEATH. Painted by William Holman Hunt in 1873; in the Manchester (England) Art Gallery. Christ working as a carpenter in Joseph's

shop. He wearily stretches his arms, and his shadow thrown on the wall forms a cross. The Virgin, at his feet, is alarmed at the omen of death.

SHAW MEMORIAL. By Saint-Gaudens; in Boston. A large relief in bronze in commemoration of Colonel Robert Gould Shaw, who led the first regiment of colored troops organized in Massachusetts. A wonderfully great work.

SHEPHERD, THE LITTLE. Painted by Murillo; owned privately in Paris. The youthful Saviour walks with a crook in his left hand and a sheep on his right. Queen Isabella of Spain gave the picture to Guizot; and it sold in 1874 for 120,000 francs.

SHEPHERDS, ADORATION OF THE. Among the most notable of the many pictures on this subject are those by Raphael Mengs in Madrid; Murillo, in Madrid, Seville, and the Hermitage; Rembrandt, in the National Gallery at London; Velasquez, in the National Gallery at London; Nicolas Poussin, in the Munich Gallery; and Titian, at Milan.

SHERMAN, STATUE OF. By Saint-Gaudens; in Central Park in New York. Remarkable for the artistic conception of the attendant figure of "Victory."

SIBYLS, THE. (1) Painted by Michelangelo; a fresco on the ceiling of the Sistine Chapel of the Vatican. (2) Painted by Raphael in 1514; a fresco in the church of Santa Maria della Pace at Rome.

SIDDONS AS THE TRAGIC MUSE. Painted by Sir Joshua Reynolds in 1784; in Grosvenor House in London. Sarah Siddons sits enthroned upon the clouds and is attended by two tragic figures.

SILENUS AND INFANT BACCHUS. Vatican Museum, Rome.

SILENUS AND INFANT BACCHUS. This group, in the Vatican Museum, shows great beauty of form and expression. It was discovered in the sixteenth century in the gardens of Sallustius near the Quirinal.

SIMPLICITY. Painted by Sir Joshua Reynolds; owned privately in England. A half-length portrait of Offy Gwatkin, Sir Joshua's niece.

SLAVE SHIP, THE. Painted by Turner; owned privately in Boston, Mass. A slave ship, storm-driven, goes ashore; many of the slaves are thrown overboard and are seen manacled and struggling in the waves. Ruskin owned it for a long time; John Taylor Johnston of New York bought it from him; and at Johnston's sale in 1876 it brought $10,000.

SLEEPING ARIADNE. A Roman copy of a fine Greek statue; in the Vatican since 1510. Ariadne, asleep upon the shore of Naxos, abandoned by Theseus A similar statue is in the Madrid Museum.

SOCRATES, DEATH OF. Painted by Louis David owned privately in Paris. Socrates, in the midst of his sorrowing disciples, is about to take the cup of poison from the executioner, who turns away his head.

SOLOMON, JUDGMENT OF. The scene in I. Kings iii. 16-28, where Solomon decides who is the mother of a child. He orders it to be cut in two. Raphael's fresco in the Vatican, Paolo Veronese's picture in Bridgewater House in London, and one in the Louvre by Nicolas Poussin are the most celebrated pictures on this subject.

SORTIE OF THE BANNING COCK COMPANY. Painted by Rembrandt in 1642; now in the Amsterdam Museum. The Civic Guard of Amsterdam, under command of Captain Banning Cock, assemble for drill at the call of the drum.

SOWER, THE. Painted by Jean François Millet in 1850; in the Vanderbilt Collection in New York. A peasant, with a bag of grain, is sowing seed on a hillside. A pair of oxen and driver are seen at the end of the furrow.

SPASIMO DI SICILIA or **SICILIAN SPASM.** Painted by Raphael in 1516-1518; now in the Madrid Museum. It was painted for the church of Santa Maria dello Spasimo at Palermo in Sicily. It represents Christ sinking under the weight of the cross on his way to Calvary. The spasm alludes to the fainting of the Virgin on this occasion.

STEPHEN, ST., MARTYRDOM OF. Stoned to death by the Jews (Acts vii.). The most notable paintings of this subject are by Pietro da Cortona, in the Hermitage; Annibale Carracci, in the Louvre; Rubens, at Valenciennes; Domenichino, in the National Gallery at London; Guercino, in Dresden; Eugène Delacroix, in the Arras Museum; and Charles Lebrun, in the Louvre.

STONE AGE, THE. A group by Boyle; in Fairmount Park at Philadelphia. An Indian woman, armed with a stone ax, has successfully defended her young children from a bear cub.

STRAFFORD GOING TO EXECUTION. Painted by Delaroche in 1835; in Stafford House in London. The earl stops at the prison windows to receive the blessings of Archbishop Laud, a prisoner.

STRAWBERRY GIRL. Painted by Sir Joshua Reynolds in 1773; in the Wallace Collection at London. A little girl with a turban headdress holds a strawberry basket.

SUNSET. ROUSSEAU. Louvre, Paris.

SUNSET. A painting by the French landscape painter, Theodore Rousseau, now in the Louvre. It is a sunset scene at Fontainebleau, and like most of his best works (many of which are in America) is characterized by great breadth and harmony of color.

SUPPER AT EMMAUS. Among the many notable pictures of this scene (Luke xxiv. 30) are those by Rembrandt, in the Louvre; Rubens, at Madrid; Titian, in the Louvre; and Paolo Veronese, in Dresden, the Louvre, and Stafford House at London.

SURRENDER OF BURGOYNE. Painted by John Trumbull in 1817-1824; in the rotunda of the Capitol at Washington. General Gates stands in front of a tent surrounded by his officers. He declines the sword of General Burgoyne (Saratoga October 17, 1777). The original sketch of this is at Yale University.

SYNDICS OF THE ARQUEBUSIERS. Painted by Bartholomeus van der Helst in 1657; in the Amsterdam Museum. The four syndics or officers of the archery guild of St. Sebastian are seated at a table examining the prizes.

SYNDICS OF THE CLOTHMAKERS' GUILD. Painted by Rembrandt in 1661; in the Amsterdam Museum. Five syndics or managers of the Cloth Hall (Staalhof) are gathered around a table; one of the number is standing; all are dressed in black.

TEMERAIRE, THE FIGHTING. Painted by Turner in 1839; in the National Gallery in London. This ship was captured in 1798 from the French; she took part in the battle of Trafalgar in 1805. She was condemned in 1838. The picture shows her being towed to Rotherhithe to be broken up.

TEMPTATION OF ST. ANTHONY. The attempt of Satan to conquer St. Anthony, whom he hated for his purity of life. Among the many notable paintings of this subject are those by Pieter Brueghel the Younger, in Dresden; Lucas van Leyden, in Dresden; David Teniers the Younger, in the Louvre, Berlin, Amsterdam, Dresden, Vienna, Madrid, and elsewhere; and Tintoretto, in Venice.

THESEUS. CANOVA. Vatican Museum, Rome.

THESEUS. A heroic figure sculptured by Canova (1782), which represents Theseus gazing at arm's length on the severed head of the Minotaur. This statue, now in the Vatican Museum, marked an epoch in modern sculpture as a return to classic art.

THOMAS, ST., INCREDULITY OF. The scene described in John xx. 25-28. The most famous are by Cima da Conegliano, in Venice; Guercino, in the Vatican; Rembrandt, in the Hermitage; Salviati, in the Louvre; Anthony van Dyck, in the Hermitage; and Rubens, in Antwerp.

TITANIA AND BOTTOM. Painted by Sir Edwin Landseer in 1851; owned privately in England. A scene from *The Midsummer Night's Dream*, where Titania is fondling the ass's head of Bottom crowned with flowers. Mustardseed, Peaseblossom, Cobweb, Moth, and other fairies are near. Sold in 1884 for £7,000.

TOBIAS AND THE ANGEL. Painted by Salvator Rosa; in the Louvre. The archangel Raphael commands Tobias to seize a fish from the water. The same is painted by Murillo, Pollajuolo, Andrea del Sarto, and Titian.

TRANSFIGURATION, THE. Christ's appearance in glory to the disciples. The most famous is by Raphael in the Vatican. This is one of the very great pictures of the world. Begun in 1519, Raphael completed only the upper part before his death in 1520. Giulio Romano finished it from Raphael's designs. The picture was hung over Raphael's body at his funeral and carried in the procession to the Pantheon.

TRIBUTE MONEY. The scene in Matthew xxii. 19 and Luke xx. 24. Painted by Titian; in Dresden Gallery. The inquiring Pharisee holds the coin in his hand while Christ is speaking to him.

TRIUMPH OF CAESAR. Painted by Andrea Mantegna in 1485-1492; in Hampton Court Palace in England. Nine pictures, each nine feet square, depict a grand triumphal procession of Roman soldiers, captives, and slaves preceding Caesar drawn in a chariot.

TRIUMPH OF DEATH. Painted (some think) by Andrea Orcagna or (according to others) by a representative of the Sienese school, about 1377. Three kings on horseback halt before three coffins containing the bodies of dead kings, while the Angel of Death descends with his scythe upon happy groups. Death and his victims are in the center. In the clouds are the souls of the blessed and devils with the damned.

TRIUMPH OF FLORA. Painted by Nicolas Poussin about 1630; in the Louvre. Flora drawn in triumphal procession in a chariot by two cupids and accompanied by singing and dancing men and women. She is being crowned by flowers while a warrior offers her flowers upon his shield.

TRIUMPH OF GALATEA. Painted by Raphael in 1514; in the Farnesina Palace at Rome. A fresco showing the escape of Galatea from Polyphemus after the death of Acis. Galatea is drawn in a shell by dolphins and attended by tritons and sea nymphs.

TRIUMPH OF RELIGION IN THE ARTS. Painted by Overbeck in 1831-1840; in the Städel Gallery at Frankfort in Germany. The Virgin and the Child are enthroned in the clouds, while on the earth are sculptors, artists, and architects to the number of about 60.

TRIUMPH OF SILENUS. Two pictures by Rubens; one in the Berlin Museum and the other in the National Gallery at London. In both Silenus walks in a procession of attending satyrs, fauns, nymphs, and children bearing grapes. The former was in Blenheim Palace until 1885 and the latter was owned by Cardinal Richelieu (1640-1642).

UGOLINO. Painted by Sir Joshua Reynolds in 1773; owned by the earl of Amherst. Ugolino, Count of Gherardesca, betrayed the Pisans to the Genoese. In 1288 he, with his two sons and two grandsons, was imprisoned in the Gualandi Tower at Pisa and starved to death.

URSULA, HISTORY OF SAINT. Painted by Carpaccio in 1490-1495; in the Venice Academy. There are nine pictures. (2) Hans Memling, about 1486, painted the history on the shrine of St. Ursula in the Hospital of St. John at Bruges.

VENICE ENTHRONED. Painted by Paolo Veronese; in the Doge's Palace in Venice.

VENICE, THE GRAND CANAL AT. Painted by Turner; in the Dudley Gallery; sold for 8,000 guineas.

VENICE, TRIUMPH OF. Painted by Tintoretto; in the Doge's Palace at Venice. Venice, a figure of a young woman draped in blue, flies over the Doge and the senators, who are receiving the homage of the conquered.

VENUS ANADYOMENE or **VENUS OF THE SHELL.** Painted by Titian in 1523; in Bridgewater House in London. The goddess is standing knee-deep in the sea and is combing her tresses. A shell floats beside her upon the water.

VENUS AND ADONIS. Among the many pictures upon this subject are those by Guercino, in Dresden; Rubens, in Blenheim Palace, the Hermitage, and Uffizi; Titian, in Alnwick Castle and Madrid Museum; Paolo Veronese, in Madrid and Edinburgh; and Antony van Dyck, in the Hermitage.

VENUS, BIRTH OF. Painted by Sandro Botticelli; in the Uffizi at Florence. The goddess stands upon a floating shell which is being wafted to the shore by two flying figures representing the winds.

VENUS DE MILO. A world-famed statue of the goddess Aphrodite, and the most priceless treasure of the Louvre. This masterpiece of the school of Phidias was accidentally discovered in 1820 in the island of Melos. Both arms are lost but the beauty and serenity of the form express the highest ideal of art. The attitude of the goddess and the date of the statue are still much debated.

VENUS OF ARLES. A Roman copy of a fine Greek statue found in the ruins of a Roman theater in Arles, in France, in 1651. It was treasured in the Palace at Versailles and given to the Louvre by Louis XIV.

VENUS OF CAPUA. A Roman copy of a Greek statue found in the ruins of an amphitheater at Capua about 1750; now in the Naples Museum. It is very similar to the Venus of Melos.

VENUS OF MEDICI. A marble statue found in the ruins of the Portico of Octavia in Rome; placed in the Villa Medici at Rome; removed to the Tribune of the Uffizi in Florence. It is an undraped figure, the hands in front and the head turned to the left. A

dolphin is beside her to indicate that she has just risen from the sea.

VENUS DE MILO. Louvre, Paris.

VENUS OF THE CAPITOL. A Greek statue; in the Capitoline Museum at Rome. The goddess is ready for the bath, her arms in the position of those of the Venus of Medici. Her garments hang upon an exquisite vase.

VENUS, TOWNLEY. A marble statue found in Ostia in 1776; in the Townley Collection in the British Museum. Very similar to the Venus of Arles.

VILLAGE BRIDE, THE. Painted by Greuze in 1761; in the Louvre. The bride's father is handing a purse, containing the bride's dowry, to the bridegroom; the mother is clasping the hand of the bride, while a younger sister leans upon the bride's shoulder; a notary is seated at the table.

VILLAGE POLITICIANS. Painted by Sir David Wilkie; owned by the earl of Mansfield. A number of villagers seated around a kitchen table are engaged in a heated discussion; others are grouped near a fire; a woman is entering the door and another is seated at the left.

VIRGIN, BIRTH OF THE. Painted by Murillo in 1655; in the Louvre. Four women prepare to bathe the child; St. Anna and St. Joachim are in the background. The picture was painted for the church at Seville; Marshal Soult carried it to France; the government bought it in 1858 for 150,000 francs.

VIRGIN, CORONATION OF THE. Painted by Velasquez, in the Madrid Museum; Raphael, in the Vatican; Fra Angelico, in the Louvre and Uffizi; Guido, in Bologna and London; and Rubens, in Brussels.

VIRGIN, DEATH OF THE. Painted by Caravaggio; in the Louvre. The Virgin, on her deathbed, is attended by the apostles and the disciples. Once owned by Charles I. of England.

VISITATION, THE. The visit of the Virgin to Elizabeth as described in Luke i. 39-40. Painted by Albertinelli, in the Uffizi; Ghirlandajo, in the Louvre; Sebastian del Piombo, in the Louvre; Raphael, in the Madrid Museum; Rembrandt, in Grosvenor House in London; and Rubens, in Antwerp Cathedral.

VULCAN, FORGE OF. Painted by Velasquez in 1629-1631; in the Madrid Museum. Vulcan and four Cyclops stop work to listen to Apollo, who stands at the left; a wreath, illuminated, crowns his head.

WASHINGTON, APOTHEOSIS OF. Painted by Brumidi on the canopy of the rotunda of the Capitol at Washington. The first frescoes done in the United States. Washington sits in the center; the goddess of Liberty on his right and Victory on his left. The 13 original states are represented by female figures encircling the group. The Fall of Tyranny, Agriculture, Mechanics, Commerce, Marine, and Arts and Sciences are grouped in the border.

WASHINGTON, RESIGNATION OF. Painted by John Trumbull in 1827; in the rotunda of the Capitol at Washington. Washington is resigning his position as commander in chief of the Continental army at Annapolis (December 23, 1783). Yale University has the original study of this work.

WHITE CAPTIVE, THE. A marble statue by Erastus D. Palmer in 1858; now in the Metropolitan Art Museum at New York. In refinement, delicacy, and grace it is by far the best work of America up to that time.

WINGED VICTORY OF SAMOTHRACE. Louvre, Paris.

WINGED VICTORY (NIKE) OF SAMOTHRACE. This statue, now in the Louvre, is a superb example of the Attic school of the end of the fourth century. It is remarkable for its perfect modeling of classic drapery, and for the advantage taken of the play of light and shadow.

THE WRESTLERS. Uffizi Gallery, Florence.

WRESTLERS, THE. This famous group, now in the Uffizi Gallery, Florence, is supposed to have been sculptured by Cephissodotus. It gives a most accurate representation of a human body in motion; the tension of the muscles, the swelling of the veins, the perfect anatomy, and the realistic expression are all unexcelled.

ZENOBIA. A statue by Harriet Hosmer; in the Metropolitan Museum of Art, New York City. It represents Zenobia, queen of Palmyra, led captive through the streets of Rome in chains. Her haughty mien and native pride are well brought out.

A BIOGRAPHICAL DICTIONARY OF FINE ARTS

Including the names of the most noted sculptors, painters, architects, musical composers, musicians, dramatists, and actors of all time.

For biographies and events in other departments, see Index under the head of Dictionary.

ABBATE or **ABATI** (*ab-bah'te*), **NICCOLO DELL'** (1512-1571). An Italian painter and fresco artist, follower of Raphael and Correggio. His "Adoration of the Shepherds" at Bologna is considered his finest; best known by his frescoes in the palace of Fontainebleau. His "Martyrdom of St. Peter and St. Paul" is in Dresden.

ABBEY, EDWIN AUSTIN (1852-). An American figure painter and illustrator, ranking among the strongest colorists and most intellectual painters of America. His important work, "The Search for the Holy Grail" (painted 1891-1901), decorates a room in the Boston Public Library. His chief canvases are "A May-Day Morning," "Fiammetta's Song," and "Crusaders Sighting Jerusalem." In 1901 he was commissioned to paint the coronation of Edward VII.; a chevalier of the Legion of Honor; member of the National Academy, New York; member of the Royal Academy, London; etc.

ACHEN or **ACKEN, JOHANN** or **HANS VON** (1552-1615). A German painter; born at Cologne. Among his works are a "Crucifixion" in a church at Cologne, "Entombment" in the cathedral at Bonn, "St. Mary and Carthusian Monk," "Burgomaster Broelman," "Christ Raising the Widow's Son," and "Truth Victorious under Protection of Justice."

ACHENBACH, ANDREAS (1815-). A German marine and landscape painter; born at Cassel; one of the most famous of the Düsseldorf School. His works are chiefly scenes on the Rhine, in Holland, and Norway. Many of his works are owned by private collectors in the United States.

ACHENBACH, OSWALD (1827-1905). A German landscape painter; born in Düsseldorf; brother and pupil of Andreas Achenbach. His works are scenes in the Bavarian Alps, Switzerland, and Italy. Many of his works are owned in the United States.

THE ROUND TABLE OF KING ARTHUR. BY E. A. ABBEY.
Mural decoration in Boston Public Library.

ABBOTT, EMMA (EMMA ABBOTT WETHERELL) (1849-1891). An American soprano; born in Chicago, Ill.; studied in Milan and Paris; made her début in Covent Garden, London, as Maria in *La fille du régiment*; sang in America in *Martha, Faust, Les Huguenots*, and *Chimes of Normandy*; most widely known American singer of her time, except, perhaps, Clara Louise Kellogg.

ABEL DE PUJOL, ALEXANDRE DENIS (1785-1861). A French historical painter; won the Grand Prix de Rome (1811) with "Jacob Blesses the Children of Joseph"; member of Academy of Fine Arts (1835); painted "Death of Britannicus," "Caesar on the Day of His Assassination," "Baptism of Clovis," and "Peter Raises the Dead."

ABILDGAARD, NIKOLAI ABRAHAM (1744-1809). A Danish historical painter; born in Copenhagen. His most important work, 10 pictures in the castle of Christiansborg, was burned (1794); painted scenes from Shakespeare and Ossian; one of Thorwaldsen's early instructors.

ABINGTON, FRANCES (1737-1815). A famous English actress who was a flower-girl at the theaters but made her first appearance as Miranda in the *Busybody* at the Haymarket, in London (1765). After an absence of 10 years she returned to England at the invitation of Garrick and played for 18 years in Drury Lane, and, later, at Covent Garden. She was the original Lady Teazle (1777), and played many Shakespearean rôles. She became the leading actress of her time; her last appearance was April 12, 1799.

ABT (*abpt*), **FRANZ** (1819-1885). A German song writer and musical conductor; kappelmeister at the court theater in Bernberg in 1841, at Zurich (1842-1852); a prolific composer; published about 600 books of music. Some of these contain from 20 to 30 numbers. His songs are remarkable for simplicity and clearness of melody; visited the United States in 1872. Among his best known songs are "Wenn die Schwalben heimwärts zieh'n" (When the Swallows Homeward Fly); "Gute Nacht, du mein herziges Kind;" "Schlaf' wohl, du süsser Engel;" and "Leuchtendes Augen."

ACHTERMANN, THEODORE WILHELM (1799-1884). A German sculptor of religious subjects. His works include a statue of Christ, "Ecce Homo"; "Pietà" and a "Descent from the Cross" in the cathedral at Münster; and a marble altar in the cathedral at Prague.

ACHURCH, JANET, or **MRS. CHARLES CHARRINGTON** (? -). An English actress; born in Lancashire; appeared in London at the Olympic Theatre (January 1, 1883); with Beerbohm Tree (1887); created the part of Nora Helmer in *A Doll's House* at the Novelty Theatre (June 7, 1889) on the occasion of the first presentation in England of an Ibsen play; appeared in the United States with Richard Mansfield (1895); acted Cleopatra to Louis Calvert's Antony at the Olympic (1897).

ACKERMANN, KONRAD ERNST (1712-1771). A German actor and one of the founders of dramatic art in Germany; with the famous Schönemann company at Lünenburg (1740). His theater at Hamburg (1765) set the standard of dramatic art for his country.

ADAM, ADOLPHE CHARLES (1803-1856). A French composer of operas; born in Paris; studied under Boieldieu; wrote 53 operas, of which the most famous are *Pierre et Catherine, Le châlet, Le postillon de Longjumeau, Cantique de Noël*, and the ballets *Faust* and *Le Corsaire*; professor of composition at the conservatory of Paris (1849).

ADAM, LAMBERT SIGISBERT (1700-1759). A French sculptor; born at Nancy; studied in Paris; received the Prix de Rome (1723). Among his best known works are "La Seine et la Marne" in the Palace of St. Cloud, "Neptune et Amphitrite" at Versailles, "Vénus au bain" for the Château de Choisy, "La chasse et la pêche" at Potsdam, and "Neptune calmant les flots" in the Musée du Louvre.

ADAMS, CHARLES R. (1848-1900). An American dramatic tenor; born in Charlestown, Mass.; studied at Vienna; sang for three years at the Royal Opera, Berlin, and for nine years at the Imperial Opera, Vienna. He was a noted Wagnerian singer; taught in Boston after 1879.

ADAMS, EDWIN (1834-1877). An American actor; born in Massachusetts; first appearance at the Boston National Theatre (August 29, 1853) as Stephen in *The Hunchback*; played Hamlet with Kate Bateman and J. W. Wallack in New York at the Winter Garden (1861); Robert Landry in *The Dead Heart* (1866); at the opening of Booth's Theatre (February 3, 1867), and played there Mercutio, Iago, and Enoch Arden.

ADAMS, MAUDE KISKADDEN (1872-). An American actress; born in Salt Lake City; appeared in children's parts in the West; joined E. H. Sothern's company in New York, playing in *The Midnight Bell* (1888); member of Charles Frohman's stock company; played with John Drew in *The Masked Ball* (1892); Lady Babbie in *The Little Minister* (1898); Juliet to William Faversham's Romeo (1899); the Duc de Reichstadt in *L'Aiglon* (1900); Miss Phoebe in Barrie's *Quality Street* (1902), and in *Peter Pan* (1906).

ADAMS, SUZANNE (1873-). An American soprano; born in Cambridge, Mass.; studied with Marchesi in Paris; made her début (1894) at the Paris Opéra as Juliette in Gounod's *Roméo et Juliette*; appeared at Covent Garden, London (1898); at the Metropolitan Opera House in New York (1898 and 1899); married Leo Stern, the violoncellist (1898); has sung Juliette, Marguerite, Gilda, Queen in *Les Huguenots*, Queen of the Night in *The Magic Flute*, Mimi, and Micaëla.

ADAM-SALOMON, ANTONY SAMUEL (1818-1881). A French sculptor of Jewish descent; born at La-Ferté-sous-Jouarre. Among his best works are busts of Béranger, Lamartine, Rossini, Halévy, Littré, George Sand, Marie Antoinette, Delphine Gay; medallions of Copernicus, Amyot, and Marchand Ennery; and the tomb of the duke of Padua.

ADLER, FRIEDRICH (1827-). A German architect and art historian; born in Berlin; designed St. Thomas's at Berlin, St. Paul's at Bromberg, and other churches; an authority on ancient and medieval architecture and a patron of the excavations at Olympia.

AELST, EVERT VAN (1602-1658). A Dutch painter; noted for close and accurate paintings in still life.

AELST, WILLIAM VAN (1620-1679). A Dutch painter; nephew of Evert Van Aelst; noted for his skill in reproducing the texture and luster of gold, silver, glass, and mother-of-pearl.

AETION (*a-e'shi-on*) (latter half of fourth or first half of third century B. C.). A Greek painter about whom little is known except that his work is highly praised by Greek writers. His most famous work is the painting of the "Marriage of Alexander and Roxana."

AFINGER, BERNHARD (1813-1883). A German sculptor; born in Nuremberg. His works include portrait medallions and religious subjects.

AGASIAS, SON OF DOSITHEUS (first century B. C.). A Greek sculptor; born in Ephesus; made the statue "Borghese Gladiator" found at Antium and now in the Louvre.

AGASIAS, SON OF MENOPHILUS (first century B. C.). A Greek sculptor; born in Ephesus; made several statues of Romans on the island of Delos.

AGATHARCHUS (about 480 B. C.). A Greek painter; noted as the first scene painter; employed perspective in opposition to the school of Polygnotus.

AGELADAS (520-about 460 B. C.). A Greek sculptor; born at Argos; the teacher of Myron, Phidias, and Polyclitus; modeled the statues of Zeus, Hercules, and many victors in the Olympian games. None of his works have survived.

AGESANDER (about beginning of first century B. C.). A Greek sculptor of the school of Rhodes. Pliny says he was one of the executors, with Athenodorus and Polydorus, of the celebrated group of "Laocoön" discovered near the baths of Titus in the sixteenth century.

AGLA'OPHON (500 B. C.). A Greek painter whose work is praised by Quintilian for its coloring. He was the father of the painters Polygnotus and Aristophon.

AGORAC'RITUS (fifth century B. C.). A Greek sculptor; born at Paros; favorite pupil of Phidias, whose perfect work he rivaled; executed the colossal figure of "Nemesis" at Rhamnus, where fragments of his work have been lately discovered.

AGOSTINO and **AGNOLO** (early in the fourteenth century). Italian sculptors and architects; born at Siena. Their greatest sculptural work is the monument of Bishop Tarlati at Arezzo. In architecture they erected the great tower of the Palazzo Comunale at Siena. Agnolo built the fortress of Massa.

AGOSTINO DI DUCCIO (1418-1498). An Italian sculptor and architectural decorator; born at Florence; one of the greatest of the middle early Renaissance. His work includes a series of reliefs in the cathedral at Modena; the tomb of Sigismundo Malatesta and other decorations in the interior of San Francesco at Rimini; the façade of San Bernardino at Perugia, one of the finest examples of Renaissance sculpture decoration; and the "Madonna" in the Opera del Duomo.

AGRICOLA, CHRISTOPH LUDWIG (1667-1719). A Bavarian landscape painter; born at Ratisbon. His works are to be seen in Dresden, Vienna, Florence, and Naples. He excelled in producing effects of climate and color and light.

AIGNER, JOSEPH MATTHAUS (1818-1886). An Austrian painter; born at Vienna; famous for his portraits of Grillparzer, Feuchtersleben, Lenau, Rubinstein, and others.

AIKMAN, WILLIAM (1682-1731). A Scottish portrait painter; noted for portraits of Allan Ramsay, Gay, Thomson, and John, duke of Argyll.

AINMULLER, MAX EMANUEL (1807-1870). A German painter; born in Munich; director of the royal manufactory of stained glass at Munich (1844), where he directed the making of much stained glass for the cathedrals of Cologne, Ratisbon, Speier, St. Paul's at London, and St. Peter's College at Cambridge. Views of the interior of Westminster Abbey and others by him are in the Munich Gallery, the National Gallery at Berlin, and elsewhere.

AIVAZOVSKI, IVAN KONSTANTINOVITCH (1817-1900). A Russian painter; born in the Crimea; one of the greatest marine painters of Russia. Among his best are "Sunrise on the Black Sea," "Creation," and "Deluge" in the Hermitage at St. Petersburg; sea fights at Revel, Viborg, and Tchesme, and "Wreck of the Frigate Ingermannland" and "Peter the Great at Krasnaya Gorka" in the Winter Palace; "View of Constantinople," "Calm Sea," and "Naples by Moonlight" in the Academy at St. Petersburg; "Solar Eclipse" in the Geographical Society at St. Petersburg; "Calm Sea by Moonlight" and "Monastery of St. George" in the Moscow Museum.

AIZELIN, EUGENE ANTOINE (1821-?). A French sculptor; born in Paris; a pupil of Ramey and Dumont. A few of his works are "Nyssia au bain" in the Palais Pompéian at Paris; "Psyché" in the Musée du Luxembourg; "L'adolescence," "L'idylle," "Amazone vaincue," "Mignon," "Agar et Ismaël," and "La danse" on the façades of Le Cirque; and numerous statues for public buildings.

AKERS, BENJAMIN PAUL (1825-1861). An American sculptor; born in Westbrook, Me. It is said that the character of Kenyon in Hawthorne's *Marble Faun* is drawn after Akers. Among his noted works are "Una and the Lion," "Milton," "The Dead Pearl Diver," "Isaiah," and busts and medallions of Longfellow, Edward Everett, and Sam Houston.

ALARD, JEAN DELPHIN (1815-1888). A French violinist; born in Bayonne. He was a pupil of Habeneck and Fétis; succeeded Baillot as first violinist to the king (1840); professor of the violin at the Paris Conservatory (1843-1875); Sarasate was one of his pupils; represented the modern French school of violin playing; wrote several compositions and an *Ecole du violon* used in the Conservatory.

ALARZ, JULES (1814-1891). A French composer; born in Mantua, Italy; was educated at the Milan Conservatory; musical director at the Théâtre des Italiens, Paris; wrote *Rosamondo*, an opera; *La rédemption*, an oratorio; *Sardanapale*, an opera; *La voix humaine*; and *Locanda Gratis*, an opéra-bouffe.

ALAUX, JEAN, or **LE ROMAIN** (1786-1864). A French historical painter; born at Bordeaux; a pupil of Vincent and Guérin; won the Grand Prix de Rome (1815); director of the French Academy at Rome (1847-1850); a member of the Institute (1851). His chief works include "Pandora brought from Heaven by Mercury" in the Palace of St. Cloud until destroyed in 1870, "Burial of Our Lord" at Notre Dame de Loretto at Paris, and 29 paintings in the museum of Versailles.

ALBANI, EMMA, or **MARIE LOUISE CECILIA EMMA LAJEUNESSE** (1851-). A Canadian dramatic soprano; born at Chambly, near Montreal; studied under Duprez at Paris and Lamperti at Milan; made her début as Amina in *La sonnambula* at Messina (1870); has sung in opera in the principal cities of Europe and America as Senta in the *Flying Dutchman*, Elisabeth in *Tannhäuser*, Elsa in *Lohengrin*, Marguerite, Lucia, Mignon, Ophelia, and Isolde; also in oratorio; married Ernest Gye of London (1878).

ALBANI (*al-bah'nee*), **FRANCESCO** (1578-1660). An Italian painter of the Carracci school; born at Bologna; follower of Guido Reni, sometimes styled "the Anacreon of painting" on account of his leaning to the classical; opened an academy in Rome, where much of his best work is to be seen. This includes frescoes of scenes from Ovid in the Torlonia Palace; "Four Seasons" in the Borghese Gallery at Rome; "Cupids Dancing" and 10 others in Dresden; "Cupid Disarmed," "The Toilet of Venus," and 13 others in the Louvre.

ALBANI, MATTHIAS, the elder and the younger (flourished about 1660). Famous Swiss violin makers; lived in Tyrol. Those instruments made by the younger between the years 1702 and 1709 are considered by many to be the equals of those by Amati.

ALBAUGH, JOHN W. (1837-1909). An American actor and manager; born at Baltimore; first appeared as Brutus in *Brutus or the Fall of Tarquin*, at Baltimore, managed by Joseph Jefferson (1855); best known impersonation was Louis XI.; manager (1868-1909) of theaters in St. Louis, New Orleans, Albany, Washington, and Baltimore; retired from the stage (1899) and devoted his attention to a noted stock farm near Washington.

ALBERT (*Fr. pron. al-bair'*), **EUGENE FRANCIS CHARLES D'** (1864-). A British pianist and composer; born at Glasgow; pupil of Liszt; ranks among the most eminent pianists of the world; especially noted for his interpretations of Bach and Beethoven; composed a suite, symphony, two quartets for strings, songs, pianoforte compositions, and the operas *Der Rubin*, *Ghismonda*, *Gernot*, *Die Abreise*, and *Kain*.

ALBERT, HEINRICH (1604-1651). A German composer; born in Saxony; instrumental in developing the present form of the German *Lied*; organist in the cathedral at Königsberg (1629); published eight books of arias; a collection of chorals, arias, and *Lieder* for one or two voices. His hymn tunes are still popular and much used.

ALBERTI, LEONE BATTISTA DEGLI (1404-1472). An Italian architect and writer; born in Venice; leader of the second phase of early Italian Renaissance architecture both in theory and practice; engaged in rebuilding St. Peter's and the Vatican. Among his works is the façade of St. Francis at Rimini. He wrote *De Re Aedificatoria*, the first great work on architecture.

ALBERTINELLI, MARIOTTO (1474-1515). An Italian painter; born in Florence; friend and colleague of Fra Bartolommeo, with whom he studied under Cosimo Roselli. His works are a splendid "Visitation" at Uffizi, a "Holy Family" at Pitti, and an "Annunciation" at the Academy in Florence; with Fra Bartolommeo he produced an "Assumption" at Berlin and a "Last Judgment" in Florence.

ALBO'NI, MARIETTA (1823-1894). An Italian contralto; born at Cesena; next to Malibran the greatest contralto of the nineteenth century; sang in all of the principal cities of Europe (1846-1847); in rivalry with Jenny Lind at Covent Garden, in London. Her voice had a compass of two and one half octaves, ranging as high as mezzo-soprano, possessing power, sweetness, fullness, and flexibility. Her last appearance in opera was at Munich (1872).

ALBRECHTSBERGER, JOHANN GEORG (1736-1809). An Austrian musician; one of the most learned contrapuntists of his age; court organist (1772); kapellmeister at St. Stephen's Cathedral (1792); taught Beethoven, Hummel, Moscheles, Seyfried, and Weigl.

ALCAMENES (about 440 B. C.). An Athenian sculptor; a reputed pupil of Phidias. His great work was the "Aphrodite in the Garden" at Athens.

ALCOTT, MAY (1840-1879). An American artist; daughter of Amos Bronson Alcott; born at Concord, Mass.; studied at the Boston School of Design and under Krug, Dr. Rimmer, Hunt, Vautier, Johnston, and Müller. Her copies of Turner were much praised by Ruskin.

ALDEGREVER, HEINRICH (1502-about 1562). A German painter and engraver; called "the Albrecht Dürer of Westphalia." His fine engravings include portraits of Luther, Melanchthon, and John of Leyden. His best paintings are the "Portrait of a Young Man" at Vienna and a "Resurrection" at Prague.

ALDRIDGE, IRA FREDERICK (about 1810-1867). "The African Roscius"; a colored tragedian, said to have been born a slave at Belair, Md. Others said he was the son of a native of Senegal; made his début at the Royalty Theatre, London, as Othello; also played Aaron in *Titus Andronicus*, Zanga, Orozembo, Rolla, and others; played Othello to Edmund Kean's Iago in Belfast; won great success and many decorations from royalty in Europe.

ALEXANDER, JOHN WHITE (1856-). An American portrait and figure painter; born in Allegheny City, Pa.; studied at the Royal Academy at Munich and under Frank Duveneck; has attained the highest rank in America. His works include numerous portraits in private European and American collections; portrait of Walt Whitman in the Metropolitan Museum at New York; "The Pot of Basil" in the Boston Museum; "In the Café" in the Philadelphia Academy; "La femme rose" in the Carnegie Gallery at Pittsburg; "The Green Bow" in the Luxembourg at Paris; and six mural decorations in the Congressional Library at Washington.

ALGARDI, ALESSANDRO (1598-1654). An Italian sculptor and architect; born at Bologna; studied painting under Carracci and sculpture with Conventui. Next to Bernini he was the most prominent representative of the Baroque school. His chief works are Saint Philip Neri at Bologna; the tomb of Leo XI. at Saint Peter's; the largest alto-rilievo in the world in Saint Peter's, representing Attila's retreat from Rome.

ALLAN, DAVID (1744-1796). A Scottish painter; born at Alloa; went to Rome (1764-1777); gained the gold medal at the Academy of St. Luke for the best historical composition (1773), "Origin of Painting"; returned to London and painted portraits (1777); removed to Edinburgh (1780); succeeded Runciman as head of the Trustees' Academy (1786); illustrated Allan Ramsay's *Gentle Shepherd*. He excelled in humorous domestic subjects.

ALLAN, SIR WILLIAM (1782-1850). A Scotch painter; born in Edinburgh; studied there and in London; went to St. Petersburg (1805) and traveled in Russia and Turkey; returned to Scotland (1814) and took up historical subjects, such as "John Knox Admonishing Queen Mary," "Queen Mary Signing Her Abdication," "Death of Regent Murray," which gained him an A. R. A., "Polish Exiles on Their Way to Siberia," "The Moorish Love-Letter," which gained him a seat in the Royal Academy, "A Slave-Market in Constantinople," "The Battle of Prestonpans," "Waterloo," bought by the duke of Wellington, and many others.

ALLAR, ANDRE JOSEPH (1845-). A French sculptor; born at Toulon; a pupil of Dantan, Guillaume, and Cavelier at Paris; obtained the Grand Prix de Rome (1889). Among his best known works are "Hécube et Polydore," "Sainte Cécile," "La tentation," "L'éloquence," "Jeanne d'Arc à Domrémy," and the statues of Jean Bullant and Jean Goujon on the façade of the Hôtel de Ville at Paris.

ALLEGRI, GREGORIO (about 1586-1652). An Italian composer; born in Rome; studied under Nanini and was a friend of Palestrina; in the choir of the Sistine Chapel at Rome; one of the earliest composers for stringed instruments; wrote the *Miserere* for two choirs. It is rendered annually on Good Friday at the Sistine Chapel. This is the work which Mozart at 14 wrote from memory after hearing it twice. Allegri is a link between the Roman and Neapolitan periods of Italian music.

ALLEN, FRED HOVEY (1845-). An American Congregational clergyman and author; born at Lyme, N. H.; took post graduate courses at Berlin, Vienna, and Paris; held pastorates in Boston, Wollaston, Abington, and Rockland; founded and edited the Lawrence (Mass.) *Eagle*; invented the first photogravure plates for art reproduction made in America; wrote *Masterpieces of Modern German Art*, *Recent German Art*, and *Grand Modern Paintings*.

ALLEN, THOMAS (1849-). An American animal and landscape painter; born in St. Louis, Mo.; studied at Düsseldorf; studio for many years in Boston, Mass.; member of the Society of American Artists (1880); associate of the National Academy of Design (1884); one of the board of judges at the World's Fair (1893); chief works are "O'er all the Hilltops is Rest," "Maplehurst at Noon," and "Toilers of the Plain."

ALLEN, VIOLA (1867-). An American actress; daughter of the actor C. Leslie Allen. When 15, she appeared in *Esmeralda* at the Madison Square Garden, New York (1882); played later with John McCullough, Tommaso Salvini, Lawrence Barrett, Joseph Jefferson, and W. J. Florence; was at the Empire Theatre, New York (1893-1897) in *The Masqueraders* and *Under the Red Robe*. In 1898 she made a great success as Glory Quayle in Hall Caine's *The Christian*, and in 1900 with *In the Palace of the King* by F. Marion Crawford and Lorimer Stoddard.

ALLEYN, EDWARD (1566-1626). An English actor, manager, and founder of Dulwich College; born in St. Botolph, just out of London; went on the stage shortly before Shakespeare came from Stratford. His greatest successes were as the Jew in Marlowe's *Jew of Malta*, Tamburlane, and Faustus. He owned several playhouses; was an associate of Philip Henslowe, a friend of Shakespeare and Ben Jonson, and a patron of Dekker.

ALLONGE', AUGUSTE (1833-). A French landscape artist; born in Paris; studied under Léon Cogniet; strong in charcoal landscapes and in oil. His best charcoal is "Moulin de Givry" and his oils are views on the Somme.

ALLORI, ALESSANDRO (1535-1607). An Italian painter of the later Florentine school; a nephew and pupil of Bronzino; employed on public buildings of Tuscany; wrote for artists a treatise on anatomy.

ALLORI, CRISTOFANO (1577-1621). An Italian painter; son and pupil of Alessandro Allori. His most celebrated work is "Judith with the Head of Holofernes" in the Pitti Palace in Florence. Replicas of it are in Vienna and the Uffizi. Other works are "Saint Julian" in the Pitti Palace and "Isabella of Aragon Pleading with Charles VIII." in the Louvre.

ALLSTON, WASHINGTON (1779-1843). An American painter; born in Waccamaw, S. C.; was graduated from Harvard (1800); earliest art influences from Pine, the portrait artist, and Malbone, the miniature painter; studied at the Royal Academy, London, where Benjamin West was president; then at the Louvre and in Italy; was associated with Vanderlyn, Thorwaldsen, and Coleridge; spent four years in Rome and returned to America (1809); soon went to London, where he painted and exhibited with success. Among his important works are "The Dead Man Revived" in the Pennsylvania Academy of Fine Arts; "St. Peter Liberated by the Angels," "Uriel in the Sun," and "The Prophet Jeremiah" in Yale College; his unfinished "Belshazzar's Feast" in Boston; and many smaller works.

ALMA-TADEMA (*ahl'ma tah'de-ma*), **SIR LAWRENCE** (1836-). An eminent painter; Dutch by birth, Belgian by training, and English by adoption; born in West Friesland; studied under Wappers and Leys at Antwerp. His work depicts life and manners of the ancient Greeks and Romans. "Roman Amateur," "Pyrrhic Dance," "The Roses of Heliogabalus," "Spring," "The Conversion of Paula," and "Thermae Antoninianae" are among his most important; member of the Royal Academy (1879) and knighted in 1899.

ALTDORFER (*ahlt'dor-fer*), **ALBRECHT** (1488-1538). A Bavarian painter and engraver; celebrated pictures are "The Victory of Alexander at Arbela," "Adoration of the Shepherds," and "Susanna at the Bath," besides over 100 works on copper. He was also a practical architect.

ALUNNO, NICCOLO, or **NICCOLO DA FOLIGNO,** or **NICCOLO DI LIBERATORE** (about 1430-1502). An Italian painter of the early Renaissance and founder of the Umbrian school; born in Foligno; a pupil of Benozzo Gozzoli; chief works are "Enthroned Madonna" and seven others in the Brera, "Coronation of the Virgin" in the Vatican, the "Annunciation" at Perugia, and numerous altarpieces.

ALVAREZ, ALBERT RAYMOND (1860-). A French operatic tenor; born at Bordeaux; musical conductor in the army; studied at the conservatory in Paris; sang at the Paris Opéra (1892) and became leading tenor there; at Covent Garden, London (1893); visited the United States (1898, 1899, and 1900). His repertoire includes over 45 operas.

ALVAREZ, JOSE (1768-1827). A Spanish sculptor; born at Priego, Cordova; was a stone mason with his father; studied at the Academy of Granada; gained the highest prize at the Academy of San Fernando (1799); studied in Paris; removed to Rome, where he gained the friendship of Canova and Thorwaldsen. His chief works are a "Ganymede," bas-reliefs on the Quirinal in Rome, and his colossal group "The Defense of Saragossa" in the Museum of Madrid.

ALVARY, MAX, or **ACHENBACH** (1858-1898). A famous dramatic tenor; born at Düsseldorf; son of Andreas Achenbach, the great painter; studied with Lamperti and Julius Stockhausen of Frankfort; made his début at Weimar (1882) in *Stradella*; appeared as José in *Carmen* at the Metropolitan Opera House in New York (1884) and remained for five years. His finest rôles were Loge in *Das Rheingold* and Siegfried; sang *Siegfried* for the hundredth time in 1895.

AMADEO, GIOVANNI ANTONIO (about 1447-1552). An Italian sculptor and architect; born at Pavia. His chief work is the Colleoni Chapel at Bergamo, with its bas-reliefs and statuary. He was the chief of the Lombard sculptors and his work combines the styles of the Middle Ages with the early Renaissance.

AMATI (1520-about 1700). An eminent Italian family of violin makers who lived at Cremona. It consisted of **ANDREA,** the founder of the Cremona school of violin makers; **NICOLA,** his younger brother, made basses; **ANTONIO** and **GERONIMO** were sons of Andrea; **NICOLA** (1596-1684), Geronimo's son, was the most eminent of the family and taught Antonio Stradivari and Guarneri. The family ended with Geronimo, the son of Nicola.

AMERLING, FRIEDRICH (1803-1887). An Austrian painter; born at Vienna; studied at Vienna, London, Paris, and Munich; went to Rome in 1831; most important Austrian portrait painter, his portraits numbering more than 1000.

AMES, JOSEPH (1816-1872). An American portrait painter; born in Roxbury, N. H.; studied at Rome, where he painted a portrait of Pope Pius IX.; worked at Boston, Baltimore, and New York; elected a member of the National Academy of Design (1870). Among his best portraits are those of Emerson, Rachel, Ristori, Clarence H. Seward, Webster, Choate, and President Felton of Harvard. His "Death of Webster" is one of his best ideal subjects.

AMMANATI, BARTOLOMMEO (1511-1592). An Italian sculptor and architect; born at Settignano. His chief work is the Santa Trinità Bridge at Florence; architect in Florence to Cosmo de' Medici.

AMSLER, SAMUEL (1791-1849). A German engraver; born at Schinznach, Switzerland. His great works are "Alexander's Triumphal Procession" after Thorwaldsen, "Triumph of Religion in the Arts," "Burial of Christ," and several "Madonnas" of Raphael.

ANDERSON, ALEXANDER (1775-1870). The earliest American wood engraver; born in New York City. His best known work is 40 illustrations of Shakespeare's works and cuts for Webster's *Spelling Book*.

ANDERSON, MARY ANTOINETTE, or **MRS. NAVARRO** (1859-). An American actress; born at Sacramento, Cal.; first appearance at Louisville, Ky., as Juliet (1875); played with success in Great Britain and America until 1889, when she retired; played Rosalind, Juliet, Bianca, Julia in *The Hunchback*, Evadne, Meg Merrilies, Pauline, Galatea, Clarice in *Comedy and Tragedy*, Parthenia, and Perdita in *A Winter's Tale*.

ANDREA DI UGOLINO or **ANDREA PISANO** (1270-about 1349). An Italian architect and sculptor; born at Pisa; the third great artist of the Pisan school, then the leading school of Italy. His great work is the sculptured brass doors of the baptistery of Florence, never surpassed as an example of Gothic sculpture; the chief designer of the cathedral at Orvieto.

ANDREINI, FRANCESCO (lived about 1616). An Italian comedian and author. He led a troupe of actors of great reputation in Italy and France; wrote *Le bravure del capitano Spavento*.

ANDREINI, GIOVANNI BATTISTA (1578-about 1650). An Italian comedian and author; son of Francesco and Isabella Andreini; born at Florence; went to Paris during the reign of Louis XIII., where he gained great distinction in acting lovers' rôles. His most noted work is a religious drama, *L'Adamo*, from which, it is said, Milton obtained several scenes in *Paradise Lost*.

ANDREINI, ISABELLA (1562-1604). A popular Italian actress and author; born in Padua; wife of Francesco and mother of Giovanni. Her acting won greater fame than her husband's, with whom she played. At her death a medal with the inscription "Aeterna Fama" was struck in honor of her brilliant acting and beautiful character. Her writings include a number of lyrical poems and the pastoral drama, *Mirtilla*.

ANERIO, FELICE (about 1560-1630). An Italian composer of sacred music succeeding Palestrina as composer for the papal chapel, 1594-1602. His works include six books of madrigals, two of hymns, "Responsoria" for Holy Week, and litanies. His unpublished compositions are preserved in various museums.

ANERIO, GIOVANNI FRANCESCO (1567-about 1620). A brother of the preceding. He was appointed *maestro* to Sigismund III., king of Poland (1606); to the cathedral of Verona (1611); at Church of the Madonna (1613-1620). His works form a very long list, consisting of all the usual forms of sacred music. He used very fantastic titles.

ANGELICO, FRA (1387-1455). A gifted Italian painter who passed his life in a convent. His paintings of religious subjects are of a high order, and show great beauty and skill. Among the best of these is his "Last Judgment" in the Florentine Academy; the "Coronation of the Virgin"; frescoes at the Convent of San Marco, where there is also a large "Crucifixion"; the celebrated "Madonna," surrounded by saints and angels, in the Uffizi; and several decorations in the Vatican. He is the last and greatest of the painters in the transition from the Middle Ages to the Renaissance.

ANGLIN, MARGARET (1876-). A Canadian actress; born at Ottawa, Canada; daughter of the Hon. T. W. Anglin, then speaker of the House of Commons; studied at the Empire Dramatic School of Acting in New York City; made her début in *Shenandoah* in New York in 1894; played Roxane with Richard Mansfield in *Cyrano de Bergerac*, Mimi in *The Only Way*, Mrs. Dane in *Mrs. Dane's Defence*, Mabel Vaughn in *The Wilderness*, and in 1907 in *The Great Divide;* in 1908 she went to Australia, meeting with signal success; in 1909 and 1910 playing the title rôle in *The Awakening of Helena Ritchie*, in which she was highly praised.

ANIMUCCIA, GIOVANNI (about 1490-1571). An Italian composer of sacred music; born in Florence. He was *maestro di capella* at the Vatican in 1555, where he composed the *Laudi* which were sung at the closing of the regular service for the young people of the congregation of the Oratory. From this the "oratorio" is said to have developed, and he is called "The Father of Oratorio." Several of his masses and other compositions are now used. His brother **Paolo** (-1563), was one of the most skillful contrapuntists of his time. He was *maestro di capella* at the Church of San Giovanni. His compositions are used at the present time.

ANSDELL, RICHARD (1815-1885). An English painter of genre and animal pictures; born at Liverpool.

ANTHEMIUS (? -534). A Greek mathematician and architect; born at Tralles, in Lydia, Asia Minor. With Isidore of Miletus he built for the emperor Justinian the Church of Saint Sophia in Constantinople (532-537); one of the greatest buildings in architectural history. He may on this account be regarded as the founder of the developed Byzantine style of architecture. He wrote many treatises uniting architecture and theoretical mathematics like the Greeks, but differing from the Romans. Some fragments of his writings remain.

ANTIPHILUS (about 330 B. C.). A Greek painter of Egyptian birth; lived at the court of the first Ptolemy; painted portraits of Philip and Alexander before the arrival of Apelles, who became his rival.

ANTOKOLSKI, MARK MATVEYEVITCH (1842-1902). A Russian sculptor; born at Vilna of poor Jewish parents; studied at the Academy of Fine Arts at St. Petersburg, where he won prizes. His famous statue, "Ivan the Terrible," won for him fame, a seat in the Academy, and the favor of the czar Alexander II.; settled in Paris and became a chevalier of the Legion of Honor.

ANGELS. BY FRA ANGELICO.
From mural decorations in the Convent of San Marco.

ANTONELLO DA MESSINA (about 1447-1493). An Italian painter of the Renaissance; born at Messina. He is said to have been the introducer of oil painting into Italy, the secret of which he learned in Flanders. His chief works are a "Salvator Mundi" in the National Gallery in London, a "Crucifixion" in the Antwerp Gallery, and numerous portraits.

APELLES (*a-pel'lees*) (fourth century B. C.). The most celebrated painter of ancient times; probably a native of Asia Minor; studied at Ephesus; went to Macedonia, where he painted the portraits of Philip, and of Alexander the Great, whom he frequently painted, as Alexander would sit to no other artist. His most famous portrait represented Alexander wielding the thunderbolt. His other noted works were either mythological or allegorical, including "Anadyomene," "Artemis Surrounded by Maidens," and "Slander"; of the latter Lucian gives a description said to have inspired Botticelli, Dürer, and others. He returned to Asia, where most of his celebrated works were found. His accurate drawing and fine coloring are described as remarkable. His daily practice in drawing was so intense it gave rise to the Latin proverb, "Nulla dies sine linea."

APOLLODORUS (1) (fifth century B. C.). An Athenian painter; said to have introduced the effects of light and shade in place of flat color used by his predecessors.

(2) A celebrated architect of the second century A. D., who built the Forum of Trajan and other works in Rome. Severe criticism of the emperor Trajan's plans caused his banishment and death.

ARCHER, BELLE, or **ARABELLA S. MINGLE** (1860-1900). An American actress; born at Easton, Pa.; made her début in Washington, D. C., with William Florence in *The Mighty Dollar*; played in *Pinafore, Hazel Kirke,* and with Sothern as Rose in *Lord Chumley*; supported Salvini; was Maid Marian in Tennyson's *Foresters*; after a period of retirement was leading woman for Sol Smith Russell.

ARCHER, FREDERIC (1838-1901). An Anglo-American organist; born at Oxford, England; studied at London and Leipzig; organist at Plymouth Church, Brooklyn, N. Y. (1880); conductor of the Boston Oratorio Society; director of Carnegie Music Hall at Pittsburg, Pa.; organist of the Church of the Ascension there (1899); founded and, for a time, edited the *Keynote* (1855); wrote many compositions for the organ and *The Organ* and *The College Organist.*

ARDEN, EDWIN HUNTER PENDLETON (1864-). An American actor and manager; born in St. Louis, Mo.; joined J. W. Keene's Company in Chicago (1882); traveled with his own company and wrote his own plays, such as *Eagle's Nest, Barred Out, Raglan's Way,* and *Zorah.*

ARDITI (*ar-dee'tee*), **LUIGI** (1822-1903). An Italian composer and musical conductor; conducted opera many seasons in New York and London; was Patti's favorite conductor; wrote famous waltz songs sung by Patti and other prima donnas, and composed the operas *The Spy, The Brigands,* and *The Corsair.*

ARI'ÒN (about 700 B. C.). A famous Greek lute player. Legend says that on returning to Greece from a visit to Sicily and lower Italy, sailors plotted to rob and murder him. On being permitted to try his skill once more before death, he charmed the dolphins so that they swam near the ship. Arion threw himself upon the back of one of them and was safely carried ashore.

ARISTIDES OF THEBES (fourth century B. C.). A Greek painter; son and pupil of Nicomachus and contemporary of Apelles; the most famous ancient painter of the expressions of the mind and of the passions of men.

ARISTOXENUS (fourth century B. C.). The greatest student in Greek antiquity of the science of music and rhythm; born at Tarentum; wrote 453 treatises, several of which were on music. Part of his *Elements of Harmony* have been preserved.

ARMITAGE, EDWARD (1817-1896). An English painter; born in London; studied in Germany and France; a pupil of Delaroche, whom he assisted on the famous "Hémicycle"; chief works are "Caesar's First Invasion of Britain," a prize painting, and some frescoes in St. John's (Roman Catholic) Church in London and in the Houses of Parliament; professor of painting at (1875) and member of (1878) the Royal Academy.

ARMSTEAD, HENRY HUGH (1828-1905). An English sculptor; famous for his groups on the Albert Memorial at London; history of King Arthur and Sir Galahad in carved panels in the New Palace at Westminster; and effigies of Bishop Wilberforce at Winchester, Lord Thynne at Westminster Abbey, and others.

ARMSTRONG, DAVID MAITLAND (1837-). An American genre painter and decorative artist; born at Newburg, N. Y.; studied at Paris and Rome, at which latter place he was United States consul general for Italy for four years; director of the American art department at the Paris Exposition (1878); lives in New York.

ARNE, THOMAS AUGUSTINE (1710-1778). An eminent English composer; born in London; studied the violin; wrote an opera, *Rosamond*; a comic operetta, *Tom Thumb or the Opera of Operas*; *Comus*; *Rule Britannia,* the national air, first given in the masque of *Alfred*; two oratorios, *Judith* and *Abel*; a number of operas, including *Artaxerxes*; and many glees, songs, catches, and canons, as well as the music for Garrick's *Ode to Shakespeare.*

ARNOLFO DI CAMBIO (about 1232-1302). An Italian architect; born at Colle, Tuscany; the most eminent Florentine architect of the Gothic style; a pupil of Niccola Pisano. His masterpiece is the Church of Santa Croce at Florence.

ARNOULD, SOPHIE (1744-1803). A famous French actress and singer; born in Paris in the room in which Admiral Coligny was murdered. For 21 years (1757-1778) she was the most popular singer in Paris, especially in Gluck's *Iphigenia in Aulis.*

ARNOULD-PLESSY, JEANNE (1819-1897). A French actress; born at Metz. She is said to have created 53 rôles during her long career. Her greatest successes were at the Comédie Française in the later dramas of Emile Augier.

ARTOIS, JACOB VAN (1613-about 1683). A Flemish landscape painter of scenes around Brussels. The best specimens of his work are in the galleries at Madrid, Brussels, and Vienna.

ARTHUR, JULIA, or **IDA LEWIS,** or **MRS. B. P. CHENEY** (1869-). An American actress; born at Hamilton, Ontario, Canada; studied music and drama in England; appeared in New York in *The Black Masque*; in London with Irving at the Lyceum as Rosamund in *Becket*; with Irving and Terry to America (1896); brought out *A Lady of Quality* in New York (1897); Rosalind in *As You Like It* at Wallack's Theater (1898); *More Than Queen* at the Broadway (1899); retired through illness in 1900.

ARUNDEL (*ar'un-del*), **THOMAS HOWARD, EARL OF** (1592-1646). Born in Essex; held several court offices. First English art collector; his valuable books, works of fine arts, including busts, statues, gems, and inscribed marbles were unrivaled. The most widely known were the **ARUNDEL MARBLES,** these being a collection of ancient sculptures consisting of 37 statues, 128 busts, and 250 inscribed stones, which were found on the island of Paros about 1610. They were collected by Mr. W. Petty, purchased by Lord Arundel, and given (1664-1667) by his grandson, Henry Howard—afterward Duke of Norfolk—to the University of Oxford. These sculptures contain inscriptions in the Greek tongue. In their perfect state they evidently contained the Parian Chronicle, a chronological table of the principal events of Grecian history from the time of Cecrops (1582 B. C.) to the archonship of Diognetus (264 B. C.). The chronicle of the last 90 years of this period is lost and the portion still extant is much corroded and defaced.

ATHENODORUS (first century B. C.). A Greek sculptor of Rhodes; one of the famous three who produced the statue of "Laocoön."

ATTAVANTE (about 1455-about 1520). A Florentine artist and probably the greatest miniature painter of the Italian Renaissance. His best work was done under the patronage of Matthias Corvinus, king of Hungary.

AUBER (*o-bair'*), **DANIEL FRANCOIS ESPRIT** (1782-1871). A famous French composer; born at Caen; founder of French grand opera; best known work, the opera *Fra Diavolo*; member of the Academy (1829).

AUGUR, HEZEKIAH (1791-1858). An American sculptor; born at New Haven, Conn. His best work is the statue "Jephtha and His Daughter" in the Trumbull Gallery of Yale University.

BACH, HEINRICH (1615-1691). A German musician; born at Arnstadt; father of Johann Christoph and Johann Michael.

BACH, JOHANN CHRISTIAN (1735-1782). A German organist and composer; born at Leipzig; son of Johann Sebastian Bach.

BACH, JOHANN CHRISTOPH (1613-1661). A German musician; grandfather of Johann Sebastian Bach.

BACH, JOHANN CHRISTOPH (1645-1693). A German musician; born at Erfurt; died at Arnstadt; an uncle of Johann Sebastian Bach.

BACH, JOHANN CHRISTOPH (1643-1703). A noted German musician; son of Heinrich Bach; court organist at Eisenach.

BACH, JOHANN CHRISTOPH (1671-1721). A German musician; organist at Ohrdruff; a brother of Johann Sebastian Bach.

BACH, JOHANN SEBASTIAN (1685-1750). A celebrated German musician; born at Eisenach. At the age of 15 he entered the Michaelis School at Lüneburg;

filled successively the following positions: violinist in the court band at Weimar; organist at Arnstadt; organist at Mühlhausen; court organist at Weimar; kapellmeister at Köthen; cantor at the Thomas-Schule; organist and musical director in two churches at Leipzig; honorary court composer to the elector of Saxony; honorary kapellmeister to the duke of Weissenfels; the author of much magnificent church music, but best known by his *Preludes* and *Fugues*.

BACH, KARL PHILIPP EMANUEL (1714-1788). A distinguished German composer; son of Johann Sebastian Bach; born at Weimar; died at Hamburg; court musician to Frederick the Great (1740-1767); composer of piano music and oratorios.

BACHE, FRANCIS EDWARD (1833-1858). An English composer; born at Birmingham.

BACKHUY'SEN, LUDOLPH (1631-1709). A Dutch marine painter and etcher; born at Emden, in East Friesland.

BADDELEY, ROBERT (about 1733-1794). An English actor; the original Moses in the *School for Scandal*. He established an asylum for disabled actors.

BAILLOT, PIERRE MARIE FRANCOIS DE SALES (1771-1842). A French violinist; professor of the violin in the Conservatory of Music at Paris (1795); author of *Methode du violon*.

BAILLY, ANTOINE NICOLAS (1810-1892). A French architect; appointed architect to the French government in 1844. Among his works is the new Tribunal de Commerce at Paris.

BAILY, EDWARD HODGES (1788-1867). A noted English sculptor; born at Bristol.

BAKER, GEORGE AUGUSTUS (1821-1880). An American portrait painter; born in New York.

BALECHOU, JEAN JOSEPH NICOLAS (1715-1765). A noted French engraver; born at Arles.

BALFE, MICHAEL WILLIAM (1808-1870). A British musician; born in Dublin; died at Rowney Abbey, in Hertfordshire; a singer of some note; violinist and composer. He produced several operas, the most successful being *The Bohemian Girl* (1843). His works include *The Maid of Artois, Joan of Arc, L'étoile de Séville, Sicilian Bride*, and *Il talismano*.

BALL, THOMAS (1819-). An American sculptor; born at Charlestown, Mass. Among his works are the statue of Webster (New York) and "Emancipation" (Washington).

BALTARD, VICTOR (1805-1874). A French architect; born in Paris; governmental architect of Paris; author of *Monographie de la Villa Médicis*.

BALTAZARINI or **BALTAGERINI** (about the middle of the sixteenth century). An Italian musician; first violinist of his time and founder of the modern ballet.

BANCO, NANI D'ANTONIO (about 1374-about 1420). A Florentine sculptor; pupil of Donatello. The Porta della Mandola, on the south side of the Duomo, commenced by Niccola d'Arezzo, was completed by Banco (1408). Many of his works are about Or San Michele.

BANDINELLI, BARTOLOMMEO or **BACCIO** (1488-1560). An Italian painter and sculptor. Among his works are the copy of the "Laocoön" in the Uffizi and the "Hercules" of the Palazzo Vecchio. He sought to rival Michelangelo.

BARNAY, LUDWIG (1842-). A German actor; born at Budapest, Hungary. He has played chiefly in German cities. His principal rôles are Egmont, Essex, Tell, and Acosta.

BARNBY, SIR JOSEPH (1838-1896). An English organist, composer, and conductor; appointed instructor of music at Eton College (1875) and conductor at the Royal Academy of Music (1886). He composed the oratorio *Rebekah* and many songs and anthems.

BARNETT, JOHN (1802-1890). An English musician; born at Bedford. He composed numerous songs and operettas; devoted his later years to vocal training.

BARRETT, LAWRENCE (1838-1891). An American actor; born in Paterson, N. J. He supported Mr. Burton, Charlotte Cushman, Edwin Booth, and other eminent actors. He served as a captain in the 28th Massachusetts Infantry in the early part of the Civil War. Later he was engaged by Mr. Booth to play Othello to his Iago. After this he became an associate manager of the Varieties Theater, in New Orleans, where for the first time he played the parts of Richelieu, Hamlet, and Shylock. He gained steadily in distinction both as manager and actor.

BARRETT, WILSON (1846-1904). An English actor, manager, and playwright; born in Essex; manager of the Amphitheatre in Leeds; of the Court Theatre at London, securing Madame Modjeska for her first English appearance; of the Princess's Theatre, where he presented the *Lights o' London* for 286 nights; the *Silver King*, in which he played Wilfred Denver; played Hamlet (1884) and Othello (1897); wrote *Clito*, a tragedy; *Nowadays*, a drama; *The Sign of the Cross*; *Daughters of Babylon*; *Ben My Chree*, an adaptation of Hall Caine's *Deemster*; also adapted Hall Caine's *Bondman* and *Manxman*, and *Quo Vadis* of Sienkiewicz.

BARRIAS, FELIX JOSEPH (1822-). A French artist; born in Paris; studied under Cogniet. Among his works are "Cincinnatus Receiving the Deputies of the Senate," which won the Prix de Rome (1844); "Exiles under Tiberias" at the Luxembourg; and frescoes in several churches.

BARRIAS, LOUIS ERNEST (1841-1905). A French sculptor; born in Paris; pupil of Cavelier and Cogniet; won the Prix de Rome (1865). Other works are "Spartacus" in the Tuileries Gardens, the Carnot Memorial at Bordeaux, and the bronze statue of Lavoisier in Paris.

BARRY, SIR CHARLES (1795-1860). An English architect; born at Westminster; died at Clapham; designer of the Houses of Parliament, London.

BARRY, EDWARD MIDDLETON (1830-1880). An English architect; son of Sir Charles Barry; designer of the Covent Garden Theatre, etc.

BARRY, ELIZABETH (1658-1713). An English actress; was said to be the daughter of Colonel Barry, a prominent royalist in the civil war. She was known as "the great Mrs. Barry," and is said to have created over 100 rôles.

BARRY, JAMES (1741-1806). An Irish painter; born at Cork. Under the patronage of Burke he studied at London, Paris, and Rome. His masterpiece is a series of six panels representing "Human Culture" painted on the walls of the Great Room in Adelphi; elected to the Royal Academy (1773).

BARRYMORE, MAURICE, or **HERBERT BLYTHE** (1847-1906). An actor and playwright; born in India; educated in England and lived in America since 1875; first appearance here was in *The Shaughraun* at the Boston Theatre; leading man for Madame Modjeska (1882); for Mrs. Langtry (1887); for Mrs. Bernard Beere (1893); and for Olga Nethersole (1894).

BARTHOL'DI, FREDERIC AUGUSTE (1834-1904). A French sculptor; born in Colmar, Alsace; principal works: the "Lion of Belfort"; statue of Lafayette in Union Square, New York; bronze group of Lafayette and Washington in Paris; and the colossal figure in New York harbor, "Liberty Enlightening the World."

BARTHOLOMEW, EDWARD SHEFFIELD (1822-1858). An American sculptor; born in Connecticut; studied in New York and later resided in Italy; chief works are "Youth and Age," "The Shepherd Boy," "Ganymede and the Eagle," and "Eve after the Fall." Many of his works are in the Wadsworth Gallery at Hartford, Conn.

BARTLETT, HOMER NEWTON (1845-1905). An American organist, teacher, and composer; born at Olive, N. Y. His compositions numbered over 200.

BARTLETT, PAUL WAYLAND (1865-). An American sculptor; born at New Haven, Conn.; studied with Frémiet in Boston; with Cavelier in Paris; member of the Legion of Honor (1895). Among his works are an equestrian statue of General McClellan in Philadelphia; statue of General Joseph Warren in Boston; of Lafayette, presented by the school children of the United States to France, now in the Louvre, Paris; Columbus and Michelangelo in the Congressional Library at Washington; and others in the Luxembourg Museum at Paris and elsewhere.

BARTOLOMME'O, FRA (1469-1517). A celebrated Florentine painter of sacred subjects; born at Florence.

"St. Mark" and "St. Paul" are among his best productions. He was one of the principal painters of the Florentine Renaissance. He is said to have invented the use of the lay figure.

AN ANGEL. BY FRA BARTOLOMMEO.
Cathedral at Lucca.

BARYE (*ba-ree'*), **ANTOINE LOUIS** (1795-1875). A French sculptor; born in Paris; studied under Bosio and Gros. Among his works are "Tiger Tearing a Crocodile." Some of his bronzes may be seen in Mount Vernon Place, Baltimore.

BASTIEN-LEPAGE, JULES (1848-1884). A French painter; born at Damvilliers. He died at the height of his fame; studied in Paris with Cabanel under severe privations. Among his works are "The Song of Spring," "Portrait of My Grandfather," "The Hay-makers," "The Potato Gatherers," and "Joan of Arc Listening to the Voices" in the Metropolitan Museum at New York, "The Beggar," "Love in a Village," and "The Forge"; also portraits of Sarah Bernhardt, Albert Wolff, Edward VII., and Gambetta on his death-bed.

BATEMAN, KATE JOSEPHINE (1842-). An American actress; born in Baltimore, Md.; appeared as Julia, Pauline, Juliet, Lady Macbeth, Leah, and parts in *Medea*, with Irving in *Macbeth*, and the title rôle in Tennyson's *Queen Mary*; married George Crowe, formerly the editor of the London *News* (1866).

BATES, BLANCHE (1873-). An American actress; born in Portland, Ore.; made her début in San Francisco in Brander Matthews' *This Picture and That*; played Mrs. Hillary in *The Senator*, Phyllis in *The Charity Ball*, Nora in *A Doll's House*, Mirtza in *The Great Ruby*, Miladi with James O'Neill in *The Three Musketeers*, Cigarette in *Under Two Flags*, and the leading rôle in *The Garden of the Gods*.

BAZZINI, ANTONIO (1818-1897). An Italian violinist and composer; born in Brescia; displayed a precocious genius; influenced by Paganini; professor at the Milan Conservatory and director, later; composed five string quartets, a string quintet, an opera, some church music, and *Francesca da Rimini*, a symphonic poem.

BEACH, AMY MARCY CHENEY (1867-). An American pianist and composer; born at Henniker, N. H.; chief works are the *Gaelic Symphony* for full orchestra; the *Jubilate*, composed for the opening of the Woman's Building at the Columbian Exposition; *Mass in E flat*; several compositions for voice and piano; and some successful cantatas.

BEARD, JAMES HENRY (1814-1893). An American artist; born in Buffalo, N. Y.; became a successful portrait painter in Cincinnati; removed to New York in 1870; chief works are "The North Carolina Immigrants," "The Land Speculator," "The Long Bill," "Out All Night," "Don Quixote and Sancho Panza," and portraits of Clay, John Quincy Adams, W. H. Harrison, Taylor, and others.

BEARD, THOMAS FRANCIS or **FRANK** (1842-1905). An American artist; born in Cincinnati; served in the Civil War; took up illustrating for the best magazines, lecturing, and "chalk talks"; professor of æsthetics at Syracuse University (1881).

BEARD, WILLIAM HOLBROOK (1825-1900). An American artist; born in Ohio; brother of James Henry Beard; traveled and studied in Europe; after living some time in Buffalo, removed to New York (1860); member of the National Academy (1862); noted animal painter; chief works are "Bears on a Bender," "Dance of Silenus," "Flaw in the Title," "Darwin Expounding His Theories," and "Bulls and Bears in Wall Street"; published *Humor in Animals* and *Action in Art*.

BEARDSLEY, AUBREY (1872-1898). An English artist; born at Brighton; widely known as an illustrator, designer of posters, and of book covers.

BEAUX (*bow*), **CECILIA** (1863-). An American artist; born in Philadelphia; studied under Sartain, and after 1899 with Bouguereau, Constant, Courtois, and Dagnan-Bouveret in Paris; member of several societies and winner of important prizes; chief works are "Last Days of Infancy," "Sita and Sarita," "Cynthia," "The Dreamer," "Mother and Daughter," "A New England Woman," "Dorothea and Francesca."

BECCAFUMI, DOMENICO (1486-1551). An Italian painter and sculptor; born in Siena; worked 27 years on the famous pavement of the Cathedral of Siena, done in white marble with figures and border in color; painted frescoes on the ceiling of the city hall of Siena.

BECK, JOHANN NEPOMUK (1828-1904). An Austrian barytone; born in Budapest; made his début there in *I Puritani* as Ricardo; sang at the Imperial Opera at Vienna (1853-1885); chief rôles were William Tell, Don Giovanni, Hans Sachs, and Alberich.

BECKER, AUGUST (1821-1887). A German landscape painter; born at Darmstadt; traveled extensively; taught the English royal princesses at Balmoral; chief works are "Evening in the Bernese Oberland," "Norwegian Tableland," and "The Kaisergebirge in the Tyrol."

BECKER, JAKOB (1810-1872). A German painter; born at Dittelsheim; professor of genre and landscape painting at the Städel Institute at Frankfort-on-the-Main; best known work is the "Praying Peasant Family."

BECKER, JEAN (1833-1884). A German violinist; born at Mannheim; conductor at Mannheim; made a series of famous concert tours (1858); settled in Florence and organized the Florentine Quartet.

BECKER, KARL LUDWIG FRIEDRICH (1820-1900). A German historical painter; born in Berlin. His works include "Belisarius as a Beggar," "Doge in Council," "Charles V. and Fugger," and "Emperor Maximilian Receiving the Venetian Embassy."

BECKWITH, JAMES CARROLL (1852-). An American portrait painter; born at Hannibal, Mo.; studied with Carolus-Duran at Paris; elected to the Society of American Artists and the National Academy of Design (1894). His best known portraits are those of General Schofield, Judge Palmer, Colonel Appleton, Mark Twain, and of the Ogden and Parish families; exhibited "The Nautilus" at the St. Louis Exposition.

BEECHEY, SIR WILLIAM (1753-1839). An English portrait painter; born at Burford, Oxfordshire; portrait painter to Queen Charlotte; knighted and elected R. A. for his picture of George III. reviewing troops, now at Hampton Court; exhibited 362 portraits in 64 years at the Royal Academy; two of his portraits are in the Metropolitan Art Museum at New York.

BEERE, MRS. BERNARD (1859-). An English actress; born at Norwich; played in *Fedora* and as the Countess Zicka in *Diplomacy*; visited America in 1892; appeared in 1897 in *Charlotte Corday* and *A Sheep in Wolf's Clothing*; married H. C. S. Olivier in 1900.

BEETHOVEN (*bay'to-ven*), **LUDWIG VAN** (1770-1827). One of the greatest musical composers; born in Bonn, of Dutch extraction; the author of symphonies and sonatas that are known over all the world; showed early a most precocious genius for music; commenced his education as a musician at four; trained at length under the tuition of his illustrious predecessor, Haydn; revealed the most wonderful musical talent; quitted Bonn and settled in Vienna; attracted the attention of Mozart; about the age of 30 was attacked with deafness that became total and lasted for life; continued to compose all the same, to the admiration of thousands; during his last days was a prey to

melancholy. His chief works are the three trios, the first set of pianoforte sonatas, the *Sonata Pathétique*, the *First Symphony*, the ballet music to *Prometheus*, the pianoforte sonata with the favorite funeral march, the *Moonlight Sonata*, the *Kreutzer Sonata*, the *Third* or *Eroïca Symphony*, the *Waldstein* and *Apassionata Sonatas*, the opera *Fidelio*, the *Fourth Symphony*, the violin concerto, the *Coriolanus Overture*, the *Mass in C*, the *Fifth* and *Sixth* or *Pastoral Symphonies*, the *Seventh* and *Eighth Symphonies*, the *Battle Symphony*, the *Glorious Moment*, the *Ninth Symphony*, the *B flat Sonata, Opus* 106, the *Mass in D*, the *Last Quartets*, and the *Last Sonatas*.

BELASCO, DAVID (1862-). An American playwright; born in San Francisco; in 1874 became an actor in the Metropolitan Theatre; adapted plays for the stage, such as *Hearts of Oak*; stage manager in the Madison Square Theatre, New York, and, later, in the Lyceum; wrote, with Henry C. DeMille, *The Wife* and *The Charity Ball*, also for E. H. Sothern, *Lord Chumley*, and, with Franklin Fyles, *The Girl I Left Behind Me*. Among his others are *The Heart of Maryland, Zaza, May Blossom, Men and Women, La belle Russe, Valérie, Du Barry, Naughty Anthony*, and *Madame Butterfly*.

BELLEW, HAROLD KYRLE (1857-). An English actor and playwright; cadet in the British navy; actor, newspaper man, and lecturer in Australia; actor in London; appeared in America in *In His Power* at Wallack's (1885); played throughout English-speaking countries with Mrs. James Brown Potter (1887); was Leander to Mrs. Potter's Hero in his own play, *Hero and Leander*; Marat in *Charlotte Corday*; Romeo to Mrs. Potter's Juliet; wrote *Yvonne* and *Iolande*.

BELLI'NI, GENTILE (1428-1507). The son of Jacopo Bellini; was distinguished as a Venetian portrait painter; decorated, with his brother, the council chamber of the ducal palace; one of his finest pictures was the "Preaching of St. Mark."

VIRGIN AND CHILD. GIOVANNI BELLINI.
National Gallery, London.

BELLI'NI, GIOVANNI (1430-1516). Brother of Gentile Bellini; produced a great many works; the subjects religious, all notably treated; had Giorgione and Titian for pupils. Among his best works are "The Transfiguration," "Feast of the Gods," "Blood of the Redeemer," "Pietà," a "Virgin and Child" in the Academy at Venice and another in the National Gallery at London, and "The Virgin and Child with Saints" in the Benson Collection, London.

BELLINI, JACOPO (about 1400-about 1464). The founder of a celebrated Venetian family of painters of the Renaissance; father of Gentile and Giovanni Bellini.

BELLINI, VINCENZO (1802-1835). An Italian operatic composer; born at Catania, in Sicily; wrote *Bianca e Fernando, Il pirata, La straniera, Capuleti e Montecchi, Sonnambula, Norma, Beatrice di Tenda*, and *I Puritani*. All famous operatic singers have kept Bellini's works in their repertoires.

BELTRAFFIO, GIOVANNI ANTONIO (1467-1516). An Italian painter; born at Milan; pupil of Leonardo da Vinci; chief works are "Madonna of the Casio Family" in the Louvre, one portrait in the Ambrosian Gallery at Milan, and two at Isola Bella.

BENARD, HENRI JEAN EMILE (1844-). A French architect; born at Goderville; studied at the Ecole des Beaux-Arts in Paris; won the Prix de Rome (1867); designed the Palace de Compiègne at Paris; won the first prize for the design and plans for the University of California over 100 competitors. These called for a $10,000,000 building.

BERGMANN, KARL (1821-1876). An American musician; born at Ebersbach, Saxony; studied at Zittau and Breslau. As a member of the Germania Orchestra he came to the United States (1850); leader of the orchestra later; conductor of the Philharmonic Orchestra in New York (1862-1876) and as such did much to advance a love of good music in America.

BERIOT, CHARLES AUGUSTE DE (1802-1870). A Belgian violinist and composer; born at Louvain; married Malibran, the famous singer, in 1836; professor at the Conservatory of Music at Paris (1842) and later at Brussels; author of a complete manual for violin, of seven concertos, and numerous other compositions; head of the Belgian school of violinists and teacher of Vieuxtemps and Léonard.

BERLIOZ (*ber-le-oze'*), **HECTOR** (1803-1869). A French composer; born in La Côte St. André. He forsook medicine to study music at the Paris Conservatoire, where he gained the first prize in 1830 with his cantata, *Sardanapale*. His *Damnation de Faust*, with its famous "Rakoczy March"; *Benvenuto Cellini*; *Roméo et Juliette*, with its "Queen Mab Scherzo"; and the *Danse des sylphes* stamp him as the father of orchestration.

BERNE-BELLECOUR, ETIENNE PROSPER (1838-). A French painter; born in Boulogne; pupil of Picot and Barrias; noted for his pictures of episodes in the Franco-Prussian War. Among his best are "Cannon Shot," "In the Trenches," "Attack on the Château of Montbéliard," and "To Arms." Many of his pictures are owned by private collectors in the United States.

BERNHARDT, ROSINE SARAH (1844-). A French actress; born in Paris. At an early age her Jewish parents placed her in a convent at Versailles. When 14 years old she left the convent and entered the Paris Conservatoire, and there studied tragedy and comedy. Her first great success was as Marie de Neuberg, in Victor Hugo's *Ruy Blas*. Becoming very popular by her representations, notably in *Andromaque* and *Le sphinx*, she was soon recognized as the foremost actress in French tragedy; made successful appearances in the United States, and visited Switzerland, Holland, South America, Italy, Algeria, Australia, etc. In 1899 she appeared in a new rendering of *Hamlet* in Paris, and scored a most flattering triumph, and since then has appeared successfully in *L'Aiglon*, and a number of other dramas specially adapted to her genius.

BERNINI (*ber-nee'nee*), **GIOVANNI LORENZO** (1598-1680). An Italian painter, sculptor, and architect; born at Naples; produced his "Apollo and Daphne" at 18, his masterpiece; designed the colonnade of St. Peter's; the most celebrated Italian sculptor of the Baroque period. He was considered the dominant power in European sculpture for over 100 years.

BERTEAUX, HELENA HEBERT, MADAME LEON (1828-). A French sculptor; born in Paris; daughter and pupil of Pierre Hébert and pupil of Dumont; founder and president of the Société de l'Union des Femmes Peintres et Sculpteurs"; has received several medals. Her most important works are "Jeune fille au bain"; statues for the façades of the new Tuileries; fountain at Amiens; "Le baptisme du Christ" at Notre Dame de Vincennes; "Saint Matthieu et Saint Laurent" in Paris; and portrait busts of François Boucher and others.

BERVIC, CHARLES CLEMENT BALVAY (1756-1822). A French engraver; born in Paris; achieved early fame by an engraving of Louis XVI. after Collet, one of the finest works of its kind. Among others are

"Laocoön," "Education of Achilles" after Regnault, and "Rape of Deianira" after Guido. His works are regarded as among the choicest of the French school.

BEST, THOMAS WILLIAM. (1826-1897). An English organist; born at Carlisle. Though his own instructor he carried his art to a point not yet attained by other men. He had over 5000 pieces in his repertory and his musical compositions were very numerous.

BETTERTON, THOMAS (1635-1710). An English actor; born in Westminster; famous for his Hamlet; was buried in the cloister of Westminster Abbey.

BETTY, WILLIAM HENRY WEST (1791-1874). An English actor of remarkable precocity; born near Shrewsbury, but removed in childhood to Ireland; appeared in Belfast as Oswyn in *Zara* before he was 12; as Young Norval at Dublin; committed the rôle of Hamlet to memory in three hours; appeared at a salary of £100 a night at Covent Garden and Drury Lane, London. Parliament once was adjourned to hear his Hamlet, and Betty was presented to the king and queen. His vogue soon subsided and though he persisted in his art for a time his later success was only mediocre.

BETZ, FRANZ (1835-1900). A German barytone singer of Wagnerian rôles; born at Mainz; chosen by Wagner to sing at Baireuth (1876); sang Don Carlos in Verdi's *Ernani* over 850 times.

BEVERIDGE, KUHNE (1877-). An American sculptor; born in Springfield, Ill. She studied with O'Donovan in New York and with Rodin in Paris; has exhibited in the United States and at the Royal Academy in London; gained honorable mention at the Paris Exposition (1900).

BEWICK (*bu'ik*), **THOMAS** (1753-1828). An English engraver; born near Newcastle-upon-Tyne. He was the founder of modern wood engraving. His greatest work is the *History of British Birds*. He cut in the end of the block instead of in the side, which was the prevailing method, and invented the use of the white line.

BIANCHI or **BIANCA, BERTHA SCHWARZ** (1858-). A German soprano opera singer; born in Heidelberg; studied there and in Paris with Mme. Viardot; sang in the leading European capitals; married Bernhard Pollini in 1897, a few months before his death.

BIANCHI, FRANCESCO or **IL FRARI** (1447-1510). An Italian painter of the Ferrara school; born in Modena; seems to have been a teacher of Correggio. His "Madonna with Saints" in the Louvre is a beautiful example.

BIARD, AUGUSTE FRANCOIS (1798-1882). A French painter; born in Lyons; traveled extensively, even to Greenland and Spitzbergen. From the recollections of this trip he painted his remarkable battle of the polar bears. Among his works are "Babes in the Wood," "Beggar's Family," "Strolling Comedians" in the Luxembourg, and others which are highly valued.

BIERSTADT, ALBERT (1830-1902). An American painter; born near Düsseldorf, Germany; removed with his parents to New Bedford, Mass., in 1831; began to paint in oils in 1851, and in 1853 returned to Düsseldorf to study his art, spending a winter in Rome, traveling in Italy and Switzerland, and returning to the United States in 1857. In 1861 he finished his painting, "Laramie Peak," and in 1863 "View of the Rocky Mountains—Lander's Peak." These at once gave him a high reputation. His "Discovery of the Hudson River" and "Settlement of California" are in the National Capitol at Washington.

BISHOP, SIR HENRY ROWLEY (1786-1855). An English composer; born in London; composer and director of music in Covent Garden Theatre for 14 years; produced 60 pieces, of which *Guy Mannering* and *The Miller and His Men* were most popular; was for a brief space professor of music in Edinburgh University, and eventually held a similar chair in Oxford; composed the familiar music for John Howard Payne's "Home, Sweet Home."

BIZET (*be-zay'*), **GEORGES** (1838-1875). A French operatic composer; born at Paris; his greatest work, *Carmen*, is one of the half-dozen most popular lyric operas of the present day.

BLASHFIELD, EDWIN HOWLAND (1848-). An American artist; born in New York City; studied in Paris under Léon Bonnat, and began exhibiting in the Paris Salon in 1874. He returned to the United States in 1881, and has since distinguished himself by the execution of large decorative works, such as "Christmas Bells," "The Angel with the Flaming Sword," the central dome of the Congressional Library at Washington, and the Waldorf-Astoria ball-room ceiling.

CHRISTMAS BELLS. BY BLASHFIELD.
Owned Privately.

BLOOMFIELD-ZEISLER, FANNY (1866-). An American pianist; born at Bielitz, Austrian Silesia. Her parents brought her to America in 1868 and settled in Chicago; studied with Leschetizky until 1883; has played with the principal orchestras and is one of the foremost living pianists.

BLUMENTHAL, JACOB VON (1829-). A German pianist and composer; born in Hamburg; went to London (1849); appointed pianist to Queen Victoria; taught music; composed brilliant pieces for the pianoforte and popular songs, such as "My Queen," "The Bend in the River," "The Broken Flower," and "The Venetian Boat-Song."

BOCCHERINI, LUIGI (1743-1805). An Italian composer and violoncellist; born at Lucca. His place in Italian music is very like those of Haydn and Mozart in German. His adagios, minuets, quintets for two violins, viola, and two violoncellos are famous.

BOCKLIN, ARNOLD (1827-1901). A Swiss painter of landscapes; born in Basel. He was a colorist whose work was tainted with affectation, and, though an artist of the highest rank, his work was not understood and frequently ridiculed. Among his best are "The Nereids" in the Museum at Basel; "Venus Reposing" and "Pan in the Rushes" in the Munich Gallery; and his "Sea Idyl" in the Schack Gallery at Munich, a masterpiece of coloring.

BOEHM, SIR JOSEPH EDGAR (1834-1890). An English sculptor; born in Vienna; lived in England from 1862; member of the Royal Academy (1882); chief works are a colossal statue of Queen Victoria at Windsor and statues of Bunyan, Lord John Russell, Duke of Wellington, and Carlyle.

BOGERT, GEORGE H. (1864-). An American landscape artist; born in New York City; studied in Paris under Puvis de Chavannes, Aimé Morot, and E. Boudin; won the Webb prize for landscape (1898), the first Hallgarten prize (1899), and a bronze medal at the Paris Exposition (1900).

BOGGS, FRANK M. (1855-). An American artist; born at Springfield, Ohio; studied at the Ecole des Beaux-Arts, Paris, and under Gérôme; won a

$2,500 cash prize in New York with his "Rough Day at Honfleur" (1885), bought by the Boston Museum; won a silver medal at the Paris Exposition (1900); has a fine "La Place de la Bastille" in the Luxembourg Museum, bought by the French government (1882).

BOIELDIEU, FRANCOIS ADRIEN (1775-1834). A French composer of *opéra comique*; born in Rouen. *La dame blanche*, *Jean de Paris*, and *Le calife de Bagdad* are still produced and are among the finest examples of early French *opéra comique*. His friends Méhul, Cherubini, and Cárat sang his songs and made him famous.

BOLDINI, GIOVANNI (1845-). An Italian painter; born in Ferrara; noted for accuracy, finish, and skill in genre pictures, portraits, and landscapes. Many of his works are in American collections and include "The Connoisseur," "Gossips," "Delivering the Dispatch," "The Kitchen Garden," and "Portrait of Menzel."

BOLOGNA, GIOVANNI DI, or **JEAN DE BOULOGNE** (1524 or 1530-1608). A Flemish sculptor of the Italian Renaissance; born at Douai; went to Rome; influenced by Michelangelo; settled in Florence. His chief works are "Rape of the Sabines," "Hercules and Nessus," "Flying Mercury," and the statue of the duke Ferdinand in Florence, which inspired Browning's *The Statue and the Bust*.

BONHEUR (*bo-nur'*), **ROSA** or **MARIE ROSALIE** (1822-1899). A French painter of animals; born at Bordeaux; brought up in poverty from ill fortune; taught by her father; exhibited when she was 19. Her best known works are the "Horse Fair," which was bought by Cornelius Vanderbilt for $55,500 for the Metropolitan Museum of Art in New York City, "Hay Harvest in Auvergne," "On the Alert," "Weaning the Calves," and "Deer Drinking."

BONINGTON, RICHARD PARKES (1801-1828). An English landscape painter; born near Nottingham. In conjunction with Constable he painted the *plein-air*, or atmospheric transparency, which inspired the Barbizon school in France.

BONNAT, LEON JOSEPH FLORENTIN (1833-). A French portrait painter; born in Bayonne; studied in Madrid. His work is greatly influenced by Velasquez and Ribera. His reputation rests on his portraits, chief of which are of Thiers, Victor Hugo, Don Carlos, Léon Cogniet, Jules Grévy, and Ernest Renan.

BOOTH, AGNES (1843-190?). An American actress; born in Sydney, Australia; came to California in 1858; played Hermione in *A Winter's Tale*. In New York (1865) she played important rôles, such as Julie, Desdemona, and Ophelia to Edwin Forrest; married Junius Brutus Booth, Jr. (1867).

BOOTH, EDWIN THOMAS (1833-1893). An American actor; born near Belair, Md.; the fourth son of Junius Brutus Booth. When 16 years of age he made his first appearance on the stage, in the part of Tressel, his father acting as Richard III. He visited England (1861-1862), and in 1864 produced *Hamlet* at New York for 100 nights consecutively. In 1869 he opened a splendid theater in New York, whose building cost over $1,000,000, but which involved him in pecuniary ruin. He revisited California in 1876, and in the spring of 1877 was able to settle with his creditors, having earned during the season over $600,000. Booth visited Great Britain and Germany in 1880 and 1882, and was everywhere received with enthusiasm.

BOOTH, JUNIUS BRUTUS (1796-1852). An Anglo-American tragedian; born in the parish of St. Pancras, London. He received a classical education, but early manifested a predilection for the stage, and when 17 years of age appeared in some unimportant parts. Subsequently he played Richard III. at Covent Garden, a part in which he suddenly became famous. In 1821 he came to the United States, where for the ensuing 30 years he followed his profession with much success.

BORDONE, PARIS (about 1495-1571). A Venetian Renaissance painter; born at Treviso; studied at Venice under Titian; painted King Francis I. and court by invitation in 1538. His portraits are most famous. His historical work "A Fisherman Presenting the Ring of St. Mark to the Doge" in the Venice Academy is one of the greatest of Venetian masterpieces.

RETURN FROM THE FAIR. BY ROSA BONHEUR.

BORGLUM, JOHN GUTZOU DE LA MOTHE (1867-). American sculptor and painter. His work includes figure, animal, portrait, and mural painting; and in sculpture, figures, horses, and groups in bronze. His brother, **SOLON HANNIBAL** (1868-), faithfully portrays western life.

BORGOGNONE, AMBROGIO (about 1445-about 1553). An Italian painter of the Milanese local school. His best work is in the Certosa in Pavia.

BOTTICELLI (*bot-te-chel'lee*), **SANDRO** or **ALESSANDRO FILIPEPI** (1447-1510). A celebrated painter of the Florentine school of the early Renaissance; began as a goldsmith's apprentice; a pupil of Fra Lippo Lippi. The best known examples of his art are on religious subjects, though he was no less fascinated with classical-mythological conceptions; is distinguished for his attention to details and for delicacy, particularly in the drawing of flowers. Among his best works are "Spring" at Florence; "Madonna and Angels" at Milan; "Birth of Venus" in the Uffizi; "Pallas Taming a Centaur" in the Pitti; "Mars and Venus" in London; "The Adoration of the Magi," where the faces are those of the Medici and other Florentine nobles, in the Uffizi; two circular Madonnas in the Uffizi; and the "Assumption of the Virgin" in London.

BOUCHER, FRANCOIS (1703-1770). A French painter; born in Paris; a pupil of Lemoine; member of the Academy (1734); its director (1765) and first painter to the king. He painted everything; was

known as "The Painter of the Graces" and the "Anacreon of Painting." His most famous portrait is that of Madame Pompadour. His best works are in the Louvre and in the Stockholm Museum.

BOUCICAULT, MRS. DION, or **AGNES ROBERTSON.** An English actress; married to Dion Boucicault in 1853; played leading parts in her husband's dramas, principally Eily O'Connor in *The Colleen Bawn*, Zoe in *The Octoroon*, and Jane Learoyd in *The Long Strike*.

Virgin and Child. By Bouguereau.
Musée du Luxembourg, Paris.

BOUGUEREAU (*boog-ro'*), **ADOLPHE** (1825-1905). A distinguished French painter; born at Rochelle. His subjects are both classical and religious, as well as portraits; studied under Picot; took the Prix de Rome (1850) and medals of honor (1878 and 1885); member of the Institute (1876); grand officer of the Legion of Honor (1905). Of his many paintings which are in the museums of Europe and the United States the most important are "The Body of Saint Cecilia Borne to the Catacombs," "The Birth of Venus," and "La vierge consolatrice."

BOULLE, BOULE, or (incorrectly) **BUHL, ANDRE CHARLES** (1642-1732). A French cabinetmaker; born in Paris. He won lasting fame with cabinets incrusted with copper, brass, or tortoise shell. These lack grace, but are perfect in technique. Louis XIV. was his patron.

BOUTS, DIRK or **DIERICK** (about 1410-1475). A Dutch painter; born at Haarlem; one of the leading members of the Flemish school. His leading works are "Martyrdom of Saint Erasmus," "The Last Supper," "Martyrdom of Saint Hippolytus," and "Torture of Saint Sebastian."

BOWMAN, EDWARD MORRIS (1848-). An American organist and pianist; born in Barnard, Vt.; studied in Berlin, Paris, and London; published the *Bowman-Weitzman Manual of Musical Theory* (1877); first American associate of the Royal College of Organists (1881); for eight terms president of the American College of Musicians from 1884 on; organist and conductor of the Temple Choir of the Baptist Temple at Brooklyn (1895); professor of music at Vassar College (1891); examiner to Evelyn College at Princeton; has composed many important numbers.

BRAHMS, JOHANNES (1833-1897). A distinguished German composer; born at Hamburg; settled in Vienna. The appearance of his compositions were an event in the musical world; approaches Beethoven as no other does. Among his works are *German Requiem*, *Funeral Hymn*, four symphonies, and a series of songs upon which alone his fame might rest.

BRAMANTE, DONATO (about 1444-1514). An Italian architect; born (probably) near Urbino. He spent 28 years at Milan (1472-1499) and 15 years at Rome (1499-1514). He founded the Lombard Early Renaissance, known as the "Bramantesque style," and best shown in the Church of San Satiro and of Santa Maria della Grazie. In Rome he inaugurated the Middle Renaissance and was intrusted with the reconstruction of the Vatican and St. Peter's, which was never carried out as he designed it.

BRETON, JULES ADOLPHE (1827-1906). A French painter of peasant life; born at Corrières; studied at Ghent, Antwerp, and Paris. Among his works are "Blessing the Grain," "Return of the Gleaners," "Planting a Calvary," "Women Weeding," "Song of the Lark" (Art Institute at Chicago), and "Twilight Glory."

BREWER, JOHN HYATT (1856-). An American organist and composer; born in Brooklyn, N. Y.; studied with Buck; organist of the Lafayette Avenue Presbyterian Church; professor of vocal music at Adelphi College.

Song of the Lark. By Jules Breton.
The Art Institute, Chicago.

BRIDGMAN, FREDERICK ARTHUR (1847-). An American painter; born at Tuskegee, Ala.; steel engraver for the American Bank Note Company (1863-1866); studied in Paris under Gérôme; visited Africa (1872); chief works are "An American Circus in Normandy," "Burial of a Mummy," "Pharo," and "L'Arabe"; chevalier of the Legion of Honor and member of several American societies.

BRIGNOLI, PASQUALE (1824-1884). An Italian tenor; born in Naples. After a most successful European tour he came to America in 1855 and for a quarter of a century was most popular; sang with Patti, Parepa-Rosa, La Grange, Tietjens, and Nilsson.

BROCK, THOMAS (1847-). An English sculptor; pupil and assistant of J. H. Foley, many of whose works he completed, including the O'Connell Monument at Dublin. The bust of Longfellow in Westminster Abbey is by Brock; member of the Royal Academy (1891).

BROCKWAY, HOWARD (1870-). An American composer and musician; born in Brooklyn, N. Y.; studied in Berlin; composed symphonies, cavatinas, ballads, sonatas, piano solos, and the *Sylvan Suite* given by the Boston Symphony Orchestra in 1901.

BRONZINO, AGNOLO or **ANGIOLO** (1502-1572). An Italian painter; born at Monticelli; pupil of Jacopo da Pontormo. Among his works are "Descent of Christ into Hell," "Young Sculptor," "The Dead

Christ," and a portrait of Duke Cosimo I. His portraits are excellent.

BROUWER, or **BRAUWER, ADRIAN** (1608-1638). A Flemish painter; born at Oudenarde. Nine of his best works are in Munich; Dresden has three; St. Petersburg, five; Frankfort, three; and one is at the Louvre.

BROWN, FORD MADOX (1821-1893). An English painter; born in Calais, France; supported Rossetti in the Pre-Raphaelite Brotherhood movement. Among his works are "Wikliff Reading His Translation of the Scriptures," "King Lear," "Chaucer at the Court of Edward III.," "Christ Washing Peter's Feet," "Work," and "Don Juan."

BROWN, GEORGE LORING (1814-1889). An American painter; born in Boston, Mass.; studied under Hartwell two years abroad, and, on his return, with Washington Allston. Then, in 1840, he entered the studio of Isabey in Paris. Among his works are "Doge's Palace and Grand Canal," "Bay of Naples," and "A Moonlight Scene." His "Bay of New York" and "Crown of New England" are owned by King Edward VII.

BROWN, HENRY KIRKE (1814-1886). An American sculptor in bronze; born in Leyden, Mass.; studied in Boston and several years in Italy; settled in Brooklyn, N. Y. He made the first bronze statue ever cast in America. Among his works are statues of DeWitt Clinton in Greenwood, of Nathanael Greene and General Scott in Washington, and of Lincoln in Union Square, New York City.

BROWN, J. APPLETON (1844-1902). An American painter; born in Newburyport, Mass.; studied under Benjamin C. Porter in Boston and Emile Lambinet in Paris. Among his works are "Old Road Near Paris," "On the Merrimac at Newburyport," and "The Grain Field."

BROWN, JOHN GEORGE (1831-). An American painter; born in Durham, England; came to America in 1853; president of the Water Color Society (1901). His works are very popular, especially his portrayals of New York bootblacks and street children. They include "His First Cigar," "The Passing Show," "A Merry Air and a Sad Heart," "Street Boy," "The Gang," and "Street Boys at Play."

BROZIK, VACZLAV (1851-1901). A Bohemian painter; born in Tremoschna; studied at Prague and under Piloty in Munich. Among his works are "The Ballad Singer," "The Execution on the White Mountain," and "The Imperial Councillors thrown out of the Window at Prague." His "Columbus at the Court of Ferdinand and Isabella" is in the Metropolitan Art Museum in New York.

BRUNELLESCHI, FILIPPO (about 1379-1446). An Italian architect; born in Florence. He was the founder of Renaissance architecture. He raised the dome of the Cathedral of Florence to a height of 300 feet—the problem of the century—and began the Pitti Palace, his masterpiece.

BRUSH, GEORGE DE FOREST (1855-). An American figure painter; born in Shelbyville, Tenn.; studied under Gérôme in Paris. Among his works are "The Portrait" and "Ossian and the Bard"; took the Hallgarten prize in 1888 and a gold medal at the Paris Exposition (1900).

BRUYN, BARTHEL (1493-1556). A German portrait and historical painter; born in Cologne; "the last portrait painter of Antwerp." In the Cologne Museum are "Martyrdom of Saint Ursula," "Adoration of the Magi," and "Burgomaster Browiller and His Wife." Others are "Corpus Christi," "Madonna," and numerous portraits.

BRYAXIS (about 350 B. C.). A Greek sculptor; worked on the Mausoleum at Halicarnassus, which Queen Artemisia raised to the memory of her husband, Mausolus. Newton's excavations of 1857 revealed a series of statues and bas-reliefs which decorated this tomb, and include the statue of Mausolus, one of the most ancient Greek portraits known.

BUCK, DUDLEY (1839-1909). An American composer and organist; born in Hartford, Conn.; studied at Leipzig under Richter, Hauptmann, and Rietz; wrote the music for Lanier's cantata at the opening of the Centennial Exhibition at Philadelphia (1876), numerous cantatas, comic opera *Deseret*, symphonic overture *Marmion*, and much organ music.

BULL, OLE BORNEMANN (1810-1880). A Norwegian violinist; born in Bergen. He secured great triumphs both throughout Europe and in the United States by his wonderful playing. He lost all his money in a scheme to found a colony of his countrymen in Pennsylvania, and had to take again to his violin to repair his broken fortunes. He afterward settled in Cambridge, Mass., and had also a summer residence in his native city, where he died.

BULOW, HANS GUIDO VON (1830-1894). A German pianist and conductor; born in Dresden; studied under Wieck, Eberwein, and Hauptmann; conductor of the royal opera at Munich (1864), where he conducted the first performances of Wagner's *Tristan und Isolde* and *Die Meistersinger*; visited the United States (1875-1876 and 1889-1890); one of the greatest pianists of the century and a famous conductor; the greatest authority on Beethoven.

BURGESS, NEIL (1846-1909). An American comedian; born in Boston, Mass.; made a specialty of female rôles. *Josiah Allen's Wife* was written for him; greatest success was *Widow Bedott* (1879) at Providence, and New York in 1880; produced *The County Fair* in 1889.

BURNE-JONES, SIR EDWARD (1833-1898). An English painter; born at Birmingham, of Welsh descent. He was one of the foremost, if not the foremost, of the artists of his day; imbued with ideas that were specially capable of art-treatment; designed several stained-glass windows, notably the Saint Cecilia window at Christ Church College, Oxford. He was the "greenery-yallery, Grosvenor-gallery" young man of *Patience*. He overcame the ridicule which greeted his earlier efforts. Among his works are "Venus's Mirror," "Chant d'amour," "The Golden Stair," "The Wheel of Fortune," "Cophetua and the Beggar Maid," and numerous water colors.

BURROUGHS, MARIE, or **LILLIE ARRINGTON** (1866-). An American actress; born in San Francisco; played Gladys in *The Rajah*; several seasons with E. S. Willard in *The Middleman, Judah*, and as Ophelia; *The Profligate* (1894), *The Gadfly* with Stuart Robson, and in *The Meddler*; and as Guida Landresse in *The Battle of the Strong*. She married Robert Barclay MacPherson in 1901.

BUTLER, HOWARD RUSSELL (1856-). An American landscape and marine painter; born in New York; studied at the Art Students' League and in Paris; largely instrumental in housing the Fine Arts Society, of which he was the first president.

CABANEL, ALEXANDRE (1823-1889). A French portrait and historical painter; born at Montpellier; studied with Picot; won the Prix de Rome (1843); elected to the Academy (1863); professor in the Académie des Beaux-Arts. Among his portraits are those of Napoleon III. and his ministers. One of "Miss Catherine Wolfe" is in the Metropolitan Art Museum at New York. His "Death of Moses" is in the Corcoran Gallery at Washington. "Birth of Venus," his masterpiece, is in the Louvre and a replica of it in the Metropolitan Museum. His "Expulsion from Paradise" and "Death of Francesca and Paolo" are among his best works.

CALLCOTT, JOHN WALL (1766-1821). One of the most eminent composers of the British school of music; born in Kensington; especially noted for his glees.

CALLET (*ka-lai'*), **ANTOINE FRANCOIS** (1741-1823). A French portrait and historical painter; born in Paris; member of the Academy (1780); chief portraits are those of Comte d'Artois, Louis XVI., Louis XVIII. His other works are "Biton and Cleobis"; "Spring," a fresco in the Louvre; "Winter, or Saturnalia"; "Autumn, or Fête of Bacchus"; "Summer, or Fête of Ceres"; and "Spring, or Fête of Juno Lucina."

CALLICRATES (fifth century B. C.). A Greek architect who shared in the building of the Parthenon on the Acropolis at Athens.

CALLOT, JACQUES (1592-1635). A French designer, engraver, and etcher; born in Nancy. He was a pitiless realist, noted for painstaking effort, originality, life, and humor. He left over 1500 prints of genre pictures.

CALVAERT, DENIS or **DIONYSIUS** (about 1540-1619). A Flemish historical and landscape painter; born in Antwerp. He founded a school in Bologna (1574) which thereafter became a center of Italian art. Domenichino, Guido Reni, and Albani were among his pupils.

CALVE, EMMA, or **EMMA DE ROQUER** (1866-). A French dramatic soprano; born in France; studied under Rosine Laborde; made her début in *Faust* in Brussels (1882); made her début in New York (1893); has sung in *Lalla Rookh, Nozze di Figaro, Magic Flute, Carmen, Hamlet, Cavalleria Rusticana, Mefistofele, Pagliacci.* She has created many rôles and ranks among the greatest singers of the world.

CAM, AUGUSTE NICOLAS (1822-). A French sculptor; born in Paris; studied under Rude; noted for productions of animals, chiefly in combat.

CAMPANINI, ITALO (1846-1896). An Italian tenor; born in Parma; studied in Milan under Francesco Lamperti; made his début in *Faust* there; sang in New York with Christine Nilsson (1873) and became the most popular operatic tenor of his day. He was a notable Lohengrin, and scored successes in *Aïda, Carmen, The Huguenots,* and *Faust.*

CAMPBELL, BEATRICE STELLA TANNER, or **MRS. PATRICK** (1867-). An English actress; born in London; gained a wide reputation in *The Second Mrs. Tanqueray, The Masqueraders, John-a-Dreams, The Notorious Mrs. Ebbsmith,* Ibsen's *Little Eyolf,* and as Lady Macbeth, Ophelia, and Juliet with Forbes Robertson. She toured the principal cities of the United States (1901-1903).

CAMPHAUSEN, WILHELM (1818-1885). A German painter; born in Düsseldorf. He was specially famous for battle pieces.

CANO, ALONSO (1601-1667). A Spanish painter, sculptor, and architect; born in Granada. He has been called the Michelangelo of Spain. There are many fine examples of his work in the Cathedral of Granada, six in the Prado, and several throughout Europe.

CUPID AND PSYCHE. BY CANOVA.

CANOVA, ANTONIO (1757-1822). A great Italian sculptor; born in Treviso. His first great work, which established his fame, was the group of "Theseus and the Minotaur," which was succeeded by his "Cupid and Psyche," distinguished by a tenderness and grace quite peculiar to him, and erelong by "Perseus," perhaps the triumph of his art. His works were numerous and brought him a large fortune.

CARAVAGGIO, MICHELANGELO AMERIGHI (1569-1609). An Italian painter, founder of the Naturalistic school; born in Caravaggio. Among his best works are "The Entombment of Christ" in the Vatican, "Death of Mary" in the Louvre, "Saint Matthew Writing the Gospel," "Christ and the Apostles at Emmaus," "Love as a Ruler," "Love Conquered," "Gypsy Fortune-Teller," "Card-Players," "Portraits of Himself," and "Grand Master of the Knights of Malta."

CARPACCIO, VITTORE (about 1450-about 1522). An Italian painter; born, probably, at Capro d'Istria, but passed most of his life in Venice; assisted Gentile Bellini; painted the series of nine pictures on the life of Saint Ursula, now in the Academy at Venice (1490), and series of nine each on the lives of Saints George, Jerome, and Tryphonius. His masterpiece is the "Presentation in the Temple."

CARPEAUX, JEAN BAPTISTE (1827-1875). A French sculptor; pupil of Duret and Rude. His work is intensely naturalistic. His "Dancing" group on the façade of the Opera House in Paris, spattered with a bottle of ink thrown by a fanatic (1869), created not only a scandal but a school. His "The Four Quarters of the World" fountain in Paris was done with Frémiet.

CARRACCI or **CARACCI, AGOSTINO** (1557-1600). A Bolognese painter; accompanied his brother Annibale to Rome to work on the Farnese frescoes; settled in Parma; chief works are "Communion of St. Jerome" and "Love—Celestial, Terrestrial, and Venal."

CARRACCI, ANNIBALE (1560-1609). A famous Bolognese painter, the most celebrated of the family; executed the Farnese frescoes in Rome. His mythological frescoes have been frequently engraved. Seven of his works are in the National Gallery at London, and a "Christ on the Cross" is in Dublin.

CARRACCI, LUDOVICO (1555-1619). A Bolognese painter; studied under Tintoretto; founded a school with his cousins Agostino and Annibale. Their work arrested for a time the decadence of Italian art.

CARRIERE, EUGENE ANATOLE (1849-1906). A French painter; born at Gournay; noted for his paintings of maternity. His famous "Maternity" and "The Sick Child" in the Luxembourg, his "Théâtre de Belleville," and portraits of Daudet, Verlaine, and others are his chief works.

CARSTENS, ASMUS JAKOB (1754-1798). A Danish painter; born near Schleswig. His drawing is superior to his coloring; initiated the classical reaction in Germany. His "Argonaut" cycle has been engraved in 24 plates. Many of his pictures are at Weimar, Copenhagen, and Berlin.

CARTER, MRS. LOUISE LESLIE. An American actress; made her début (1890) in New York in *The Ugly Duckling*; studied with Belasco; scored successes in *The Heart of Maryland, Zaza, Du Barry,* and *Adrea.*

CARUSO, ENRICO (1874-). An Italian dramatic tenor; born at Naples; came into prominence as a singer in 1896; sang in Milan (1898); since 1903 has attained great popularity in the United States.

CARY, ANNIE LOUISE (1842-). An American contralto; born at Wayne, Me.; studied in Milan under Giovanni Corsi; made her début in Copenhagen in Italian opera. For over 12 years she was the favorite of the American public. She created the part of Amneris in *Aïda*; married Charles Monson Raymond of Brooklyn (1882).

CAVEDONE, GIACOMO (1577-1660). An Italian painter; born near Modena; studied under Ludovico Carracci. His chief works are "Saint Cecilia" at the Louvre, "The Last Supper," "Among the Doctors," and a "Madonna and Child" at Bologna.

CAYVAN, GEORGIA EVA (1860-1906). An American actress; born at Bath, Me.; first appeared at Madison Square Theatre, New York, as Dolly in *Hazel Kirke* (1880); played Daisy Brown in *The Professor,* Liza in *The White Slave,* and Lena in *Romany Rye*; was with Dion Boucicault's company; leading lady for Daniel Frohman; retired in 1897.

CAZIN, JEAN CHARLES (1841-1901). A French painter; born at Samer; originated the French landscape in religious subjects as in "Hagar and Ishmael," "Dusk," and "A Dead City."

CELLINI, BENVENUTO (1500-1571). The greatest of the Italian Renaissance goldsmiths; born in Florence. His works comprise elaborate silver vases, statuettes, silver-gilt repoussé, bronze statues, and bronze portraits. Among his best known is his "Victorious Perseus" with the Gorgon's head.

CESNO'LA, LUIGI PALMA DI (1832-1904). An American archaeologist; born in Piedmont, Italy. He served in the Italian War with Austria and came to the United States in 1860, serving in the Civil War. He was United States Consul at Cyprus, where he made extensive archaeological discoveries. In 1879 he became a trustee and director of the Metropolitan Museum of Art, in New York City.

CHADWICK, GEORGE WHITEFIELD (1854-). An American composer; born in Lowell, Mass.; studied under Thayer and at Leipzig; instructor and, later, director of the New England Conservatory of Music; composed *The Viking's Last Voyage*; the overtures *Thalia, Melpomene*, and *Rip Van Winkle*; and *Judith*, a lyric drama; conducted the Springfield and Worcester, Mass., music festivals.

CHAM or **AMEDEE DE NOE** (1819-1879). A noted French caricaturist; born in Paris; was connected with the *Charivari* and the *Journal des Pélerinages*. His sketches are collected under the titles of *Douze années comiques* and *Les folies Parisiennes*.

CHAMINADE, CECILE LOUISE STEPHANIE (1861-). A French pianist and composer; born in Paris; noted throughout Europe as a pianist and as an orchestra conductor. She wrote *Callirrhoë*, a ballet symphony; *Les Amazones*; *Ménétriers*; *La Lisonjera*; and a number of songs.

CHAMPAIGNE, PHILIPPE DE (1602-1674). A Flemish painter; born in Brussels; went to Paris and was one of the few distinguished painters there before the accession of Louis XIV. Most of his works are in the Louvre and include "The Dead Christ" and "Portrait of Cardinal Richelieu." His "Triple Portrait of Cardinal Richelieu," "Portrait of Fénelon," and three religious subjects are in London.

CHAMPNEY, BENJAMIN (1817-1907). An American painter; born in New Ipswich, N. H.; spent several years in Europe painting at the Louvre (1841-1848); painted White Mountain landscapes and New England flower groups; ex-president of the Boston Art Club; published *Sixty Years' Memories of Art and Artists* (1900).

CHAMPNEY, JAMES WELLS (1843-1903). An American painter; born in Boston, Mass.; served in the Civil War; studied in France under Edouard Frère and at Antwerp and Rome; a clever worker in pastel portraiture; associate of the National Academy (1882).

CHANTREY, SIR FRANCIS LEGATT (1781-1842). An English sculptor; born at Norton, Derbyshire; member of the Royal Academy (1818); made the statue of Washington in the State House at Boston, Mass.; also Pitt, Watt in Westminster Abbey, Canning, and Wellington.

CHASE, WILLIAM MERRITT (1849-). An American painter; born in Franklin, Ind.; studied under B. F. Hayes in Indianapolis and at New York; settled in St. Louis; thence to Munich under Wagner and Piloty for six years; one year at Venice on Tintoretto's works; returned to New York (1878) and was president of the Society of American Artists for 10 years; taught in the Art Students' League and in his own schools; has received many medals and is a National Academician. His best work is in still life.

CHASSERIAU, THEODORE (1819-1856). A French painter; born near Santo Domingo; studied under Ingres in Paris. His frescoes on the walls of the Cour des Comptes were largely destroyed in the commune (1871). "Arab Riders and Their Dead," "Arab Chiefs," "Macbeth and the Witches," and "Chaste Susannah" are among his chief works.

CHERUBINI, MARIA LUIGI CARLO ZENOBIO SALVATORE (1760-1842). An Italian musical composer; born in Florence; director in the French Conservatory and instructor of hundreds of eminent musicians. In the interval from 1780 to 1788 he composed 11 Italian operas, including *Ifigenia in Aulide* —the most successful of the series. His operatic masterpiece is *Les deux journées*. His greatest work is the *Requiem in C minor*.

CHIPPENDALE, THOMAS (lived about 1760). An English cabinetmaker and upholsterer. Beyond the fact that he plied his trade in St. Martin's Lane in London about 1752 we know nothing about his life. The name "Chippendale" is frequently applied to mahogany furniture of the period.

CHOPIN (*sho-pan'*), **FREDERIC FRANCOIS** (1809-1849). An eminent Polish musical composer and pianist; born near Warsaw; settled in Paris (1831). As a pianist Chopin was second to Liszt only.

CHRISTY, HOWARD CHANDLER (1873-). An American illustrator; born in Morgan County, Ohio; studied in New York; began to illustrate in 1895; war artist in the Spanish War for *Scribner's* and *Leslie's*; instructor in the Cooper Institute, New York.

CHURCH, FREDERICK STUART (1841-). An American animal and figure painter and illustrator; born at Grand Rapids, Mich.; studied with Shirlaw in Chicago and with Wilmarth in New York; member of the National Academy, of the Society of American Artists, and of the American Water-Color Society; chief works are "Weirdness," "Mad as March Hares," "The Sea Princes," "Hard Times," "The Phantoms," "Saint Cecilia," and "The Sea Serpent."

CIMABU'E, GIOVANNI (1240-1302). A Florentine painter and founder of the Florentine school, which ranked among its members such artists as Michelangelo, Raphael, and Leonardo da Vinci; was the first to leave the stiff traditional Byzantine forms of art and copy from nature and the living model, though it was only with the advent of his great disciple, Giotto, that art found beauty in reality. His "Madonna" in the Church of Santa Maria has been long regarded as a marvel of art, and of all the "Mater Dolorosas" of Christianity, Ruskin does not hesitate to pronounce his at Assisi the noblest.

CLAUDE LORRAIN (1600-1682). A great French landscape painter; born at Chamagne, of poor parents; went to Rome; became servant and color-grinder to Tassi, who instructed him in his art; by assiduous study of nature in all her aspects attained to fame; was eminent in his treatment of aërial perspective, and an artist whom it was Turner's ambition to rival.

CLAUSEN, GEORGE (1852-). An English realist painter; born in London; called the Bastien-Lepage of England; joined Holman Hunt and Walter Crane in their crusade against the Royal Academy (1886), yet was elected an associate (1890). Among his works are the "Girl at the Gate," "The Ploughman's Breakfast," "The Listener," and "A Morning in June."

CLAXTON, KATE (1848-). An American actress; born in New York City; made her début with Lotta in Chicago in 1870; with Augustin Daly's stock company in New York; and with A. M. Palmer's Union Square company in 1872. Her greatest success was as Louise in *The Two Orphans*; married Charles A. Stevenson, her second husband (1878).

CLAYTON, ESTELLE, or **ESTELLE EVESSON.** An American actress; born in New York City; member of Augustin Daly's company in 1879 and 1880; played in *Esmeralda, Hazel Kirke, Young Mrs. Winthrop*, and in her own plays, *Tric-o-trim, The Quick or the Dead, A Puritan Romance*, and *Paulita* and *The Viking*, her two operettas; married Charles W. Durant (1888).

CLINEDINST, BENJAMIN WEST (1859-). An American artist; born at Woodstock, Va.; studied in Paris under Cabanel and Bonnat; settled in New York; chiefly engaged as illustrator in black and white for books and magazines. His oil and water-color work has been on genre subjects and portraits; member of the National Academy (1898).

COFFIN, WILLIAM ANDERSON (1855-). An American painter and writer; born in Allegheny, Pa.; studied in Paris under Bonnat; received several prizes and medals for his landscapes and figure work; art critic on New York papers and frequent contributor to magazines on art matters, and has written largely for encyclopedias; associate of the National Academy (1899).

COGHLAN, CHARLES FRANCIS (1841-1899). An Irish-American actor; born in Paris, France; played in London; member of Augustin Daly's company in New York (1876) as Alfred Evelyn in *Money*, and was for many years the most popular leading man in the United States.

COGHLAN, ROSE (1853-). An Irish-American actress; sister of Charles Coghlan; born in England; played in London; first appearance in New York (1872) with Lydia Thompson; played with Sothern; leading lady at Wallack's until 1889; naturalized in 1902 and settled on a ranch in Montana. In 1909 returned to the stage, at New Theater in New York.

COLE, BELLE (? -1905). An American contralto singer; born in Chautauqua, N. Y.; church soloist in New York; leading contralto with Theodore Thomas's Festival tour (1883); sang in *Elijah* in London under Sir Joseph Barnby (1888); made a tour around the world in 1901; lived in London after 1888.

COLE, THOMAS (1801-1848). An American painter; born in England; came to Ohio with his father (1819); removed to New York (1825); landscape painter of scenes along the Hudson and in the Catskills.

COLE, TIMOTHY (1852-). An American wood engraver; born in London, England; emigrated with

his parents to Chicago (1857); removed to New York (1871); noted for his series of engravings of the paintings of the old masters of Europe, which appeared in the *Century Magazine*.

COLERIDGE-TAYLOR, SAMUEL (1875-). An Anglo-African musical composer; born in London; studied at the Royal College of Music. His choral-orchestral work, *Scenes from the Song of Hiawatha, Blind Girl of Castèl Cuillè*, and a cantata, *The Atonement*, are best known; conducted *Hiawatha* in Washington in 1904.

COLLINS, WILLIAM (1788-1847). An English landscape and figure painter; born in London; father of Wilkie Collins, the novelist; studied at the Royal Academy; chief works are "Young Fifer," "The Sale of the Pet Lamb," "As Happy as a King," and "Early Morning"; elected to the Royal Academy in 1820.

COLMAN, SAMUEL (1833-). An American painter; born in Portland, Me.; studied under Durand and abroad; member of the National Academy (1860); a founder and the first president of the American Society of Painters in Water Colors (1866-1871); chief works are foreign and American landscapes in oil and water colors and some etchings, "Moonrise in Venice," "Sunny Afternoon in the Harbor of Algiers," and "Mosque of Side Bou Hac."

COLONNE, JULES JUDE or **EDOUARD** (1838-1910). A French orchestra leader and violinist; born in Bordeaux. He popularized the works of Berlioz; presented to Paris the works of Tschaikowsky, Grieg, Wagner, and Raff for the first time; led the Philharmonic Society in New York in 1906.

CONRIED, HEINRICH (1855-1909). A German-American impresario; born at Bielitz; an actor in Vienna; came to New York (1878); stage manager of the Germania Theatre there; star in the principal German theaters of this country; formed the Conried Opera Company; managed the Irving Place Theatre (1892); succeeded Maurice Grau as manager of the New York Metropolitan Opera House.

CONSTABLE, JOHN (1776-1837). An eminent English landscape painter; born in Suffolk, England. His works were more generously appreciated in France than in his own country, where they had to stand comparison with those of Turner. Enormous prices have been given of late for his best pictures. Some of his best works adorn the walls of the National Gallery. Among these are "The White Horse," "Cornfield," "Hampstead Heath," "The Valley Farm," "The Hay Wain," and many others. Constable was a leader of modern art.

CONSTANT, JEAN JOSEPH BENJAMIN (1845-1902). A highly popular French painter of the Realistic school; born at Paris. His first picture was "Hamlet and the King." Afterwards he took chiefly to Oriental subjects, which afforded the best scope for his talent; occupies a high place in the modern French school. His "Justinian in Council" is in the Metropolitan Museum of Art in New York.

COPLEY, JOHN SINGLETON (1737-1815). An American portrait and historical painter; born in Boston. Benjamin West was his patron; went to England in 1775; painted portraits of the king and the queen; began the historical works on which his fame chiefly rests, perhaps the most widely known of which is the "Death of Chatham," now in the National Gallery, London.

COQUELIN (*kok-lan'*), **BENOIT CONSTANT** (1841-1909). A French actor; born in Boulogne; made his début at the Théâtre Français (December 7, 1860). For over a quarter of a century he played there with unbroken success. He appeared in 1887 in London, in 1888 in South America and the United States. He played Flambeau in *L'Aiglon* to the Duc de Reichstadt of Sarah Bernhardt.

CORNELIUS, PETER VON (1783-1867). A German painter; born in Düsseldorf. He studied the great masters, especially Raphael. In 1811 he went to Rome, where, in conjunction with Overbeck, Veit, and other associates, he may be said to have founded a new school of German art, and revived fresco painting in imitation of Michelangelo and Raphael. In 1841 he was invited to Berlin by Frederick William IV., who intrusted him with the painting of the royal mausoleum or Campo Santo. His "Last Judgment" in the Ludwig church is the most colossal fresco ever painted.

COROT (*ko-ro'*), **JEAN BAPTISTE CAMILLE** (1796-1875). A celebrated French landscape painter; born in Paris. His landscape work is a new interpretation, marked by the freshness of the morning and the silvery mists of evening. He is a worshiper of nature in her quieter moods. His "Ville d'Avray" is in the Metropolitan Museum of Art in New York, "Dante and Vergil" in the Boston Museum of Fine Arts, and many fine examples are in private collections.

CORREG'GIO, ANTONIO ALLEGRI DA (1494-1534). An Italian painter; known as "the divine." His work excels in harmony, grace, and sweetness of color and form. He is one of the greatest Italian painters of the Renaissance. His fine "St. Francis Madonna" in Dresden, "The Ascension of Christ" in the cupola at Parma, "The Assumption of the Virgin" at Parma, "The Marriage of St. Catherine" in the Louvre, "The Madonna della Scodella" in Parma, "The Holy Night" in Dresden, and his "Ecce Homo" in London are among his most famous works.

COSIMO, PIERO DI (1462-1521). An Italian painter; born in Florence; pupil of Cosimo Roselli and master of Andrea del Sarto. His chief works are a "Conception" in the Uffizi at Florence, a "Madonna" and "Death of Procris" in London, a "Coronation of the Virgin" in the Louvre, and "Christ and John the Baptist" in Berlin.

COURBET, GUSTAVE (1819-1877). A French painter, of peasant birth; studied in Paris; joined the Commune and led in the overthrow of the Vendôme Column to distract the maddened populace from the collections of Thiers and of the Luxembourg. Courbet was essentially a realist and naturalist. His "Winnowers" in Nantes, "Burial at Ornans" in the Louvre, "Combat of the Stags," and "The Wave" are among his best.

COUSIN, JEAN (about 1501-1589). A French painter, worker in stained glass, sculptor, and author; born at Soucy. His "Last Judgment" in the Louvre and his "Eva Prima Pandora" are among his best.

COX, KENYON (1856-). An American painter; born in Warren, Ohio. He studied in Paris under Carolus-Duran and Gérôme, settling in New York in 1882 as a portrait and figure artist. He did two decorations in the Library of Congress and similar works elsewhere.

COX, PALMER (1840-). An American artist and writer for young people; born in Quebec. Since 1875 his home has been in New York. He is best known as the originator of the "Brownies," a series of funny pictures and verse for children.

COYSEVOX, ANTOINE (1640-1720). A French sculptor; born at Lyons; most famous works are tomb of Cardinal Mazarin, statue of Condé, monument of Colbert, busts of Le Brun, Vauban, Fénelon, Racine, statue of Louis XIV., and "A Nymph" and "Venus."

CRANACH, LUCAS, or **LUCAS MULLER** (1472-1553). A German painter; born at Kronach; second to Dürer among his contemporaries. The finest collection of his works is in Berlin. It includes "Hercules and Omphale" and "The Fountain of Youth." London has a "Portrait of a Young Girl." Dublin has a "Judith" and a "Christ on the Cross." New York has a portrait of "John Frederick the Magnanimous," a "Portrait," and a "Venus and Cupid." Brussels has a "Charity" and a "Portrait of an Old Man."

CRANACH, LUCAS, THE YOUNGER (1515-1586). A German painter; son of Lucas Cranach; born in Wittenberg, of which he became burgomaster. His works include a "Crucifixion," "Nativity," and "Lord's Supper" at Wittenberg. A "Portrait of a German Lady" is in the Metropolitan Museum of New York.

CRANE, WALTER (1845-). An English artist; born at Liverpool; joined William Morris in the revival of decorative arts and crafts and opposed the pre-Raphaelite movement of Rossetti; won the Albert gold medal of the Society of Arts (1904). His works include allegories, designs for tapestries, illustrations, and show remarkable fertility.

CRANE, WILLIAM HENRY (1845-). An American actor; born in Leicester, Mass.; leading comedian in Hooley's Theatre, Chicago (1874); in partnership with Stuart Robson (1877-1889). His later rôles were in *The Senator, David Harum, Business is Business*, and *The American Lord*.

CRAWFORD, THOMAS (1814-1857). An American sculptor; born in New York; died in London. Among his works are the bronze statue of Beethoven in Boston Music Hall, an equestrian statue of General Washington at the Capitol, Richmond, Va., and a number of marble

and bronze pieces in the Capitol, Washington, D. C., including the "Liberty" surmounting the dome, the bronze doors, and the relief "Progress of American Civilization."

CROME, JOHN (1768-1821). An English landscape painter; founder of the "Norwich school" (1805); known as the "English Hobbema."

CROSMAN, HENRIETTA (1870-). An American actress; born at Wheeling, W. Va.; made her début in *The White Slave* (1889); played with Daly's and Frohman's companies; married Maurice Campbell (1897); appeared as a star (1898) in the rôles of *Mistress Nell* and Rosalind in *As You Like It*.

CRUIKSHANK, GEORGE (1792-1878). An English pictorial satirist; born in London. His illustrations for Hone's political squibs and pamphlets, and especially those dealing with the Queen Caroline trial, attracted much attention. He illustrated a number of Dickens's works. In his late years he devoted himself to oil painting.

CUSHMAN, CHARLOTTE SAUNDERS (1816-1876). An American actress; born in Boston; appeared first in opera and as Lady Macbeth in New Orleans in 1835. In 1844 she accompanied Macready on a tour throughout the Northern states and afterward appeared in London. Miss Cushman retired from the stage in 1875. She was at her best in such rôles as Rosalind, Romeo, Meg Merrilies, Portia, and Lady Macbeth.

MADONNA AND CHILD. BY DAGNAN-BOUVERET.
The Louvre, Paris.

CUYP, ALBERT (1606-1672). A Dutch painter; born at Dordrecht; son of the painter, Jakob Gerritsz Cuyp (1575-1649); one of the greatest of the masters in animal painting. Ruskin says that "for expression of effects of yellow sunlight, parts might be chosen out of the good pictures of Cuyp which have never been equaled in art."

CZERNY (*zair'ne*), **KARL** (1791-1857). An Austrian pianist and musical composer; born in Vienna; pupil of Beethoven. Among his pupils were Liszt, Thalberg, and other distinguished musicians; best known by his *Theoretical and Practical School*.

DAGNAN-BOUVERET, PASCAL ADOLPHE JEAN (1852-). A French painter; born in Paris; a painter of Breton life and a follower of Holbein. Among his famous works are "A Wedding Party at the Photographer's," "Vaccination," and "Le pain bénit" in the Luxembourg; the "Breton Pardon," a "Virgin" in sunlight and shadow, the "Last Supper," and "The Supper at Emmaus." A "Breton Peasant" is in Chicago, "A Pardon in Brittany" is in New York, and the fine "Village Musician" is in the Walters collection in Baltimore.

DALOU, JULES (1838-1902). A French sculptor; born in Paris; pupil of Carpeaux; fled to London during the Commune and was prominent in the English renascence. The "Triumph of Silenus" in the Luxembourg, "The States-General" in the Chamber of Deputies in Paris, the colossal "Triumph of the Republic" in the Place de la Nation, the bronze statue of Eugène Delacroix, and numerous busts are among his more celebrated works.

MATERNAL LOVE. BY DALOU.
Metropolitan Museum of Art, New York.

DALY, (JOHN) AUGUSTIN (1838-1899). An American theatrical manager and dramatist; born at Plymouth, N. C. His plays and adaptations number 75. He was associated with the best and most popular actors and actresses of the times; managed theaters in New York and in London that made his name celebrated.

DAMROSCH, FRANK HEINO (1859-). An American musician; born in Breslau, Silesia; pupil of his father, Leopold Damrosch, and others; conductor of the Denver Chorus Club (1884-1885); chorus master at the Metropolitan Opera House in New York (1885-1891); organized the People's Singing Classes in New York (1892); supervisor of music in the New York public schools (1897); conductor of the New York Oratorio Society (1898).

DAMROSCH, LEOPOLD (1832-1885). A German American musician and composer; born in Posen; took an M.D. at Berlin (1854); studied the violin under Ries, Dehn, and Böhmer. Through Liszt he became solo violinist at Weimar, where he made the acquaintance of Wagner; conductor of the Breslau Philharmonic concerts (1859-1860); came to America in 1871 as conductor of the Arion Society, and until his death was

the leading musical figure in New York; founded the Oratorio Society (1873) and the Symphony Society (1877); and gave a season of German opera in 1884.

DAMROSCH, WALTER JOHANNES (1862-). An American musician; son of Leopold Damrosch; born at Breslau; studied with his father, Rischbieter, Draeseke, von Inten, Max Pinner, and von Bülow; conductor of the Newark, N. J., Harmonic Society; took up his father's work on his death in 1885 and carried it through; conductor of the New York Oratorio and Symphony societies; rendered *Parsifal* for the first time in America (1886); organized the Damrosch Opera Company (1894); composed *The Scarlet Letter*, an opera, and a *Te Deum* in honor of Dewey's victory at Manila.

DANNAT, WILLIAM T. (1853-). An American artist and figure painter; born in New York City; studied in Munich and in Paris under Munkácsy; teacher in the Ecole des Beaux-Arts; chief works are "Belle Otero," "Spanish Women," "A Sacristy in Aragon," "A Lady in Red," and "A Lady in White."

DANNECKER, JOHANN HEINRICH VON (1758-1841). A German sculptor; born near Stuttgart; studied in Paris and in Rome with Canova; professor of sculpture at Stuttgart (1790); chief works are "Sappho," "Psyche," "Ariadne on the Panther," "Christ," "John the Baptist," and busts of Schiller, Gluck, Lavater, and others.

DARLEY, FELIX OCTAVIUS CARR (1822-1888). An American artist and illustrator; born in Philadelphia; illustrated Irving, Cooper, Dickens, and others with sharply defined, flowing outline; painted "Cavalry Charge at Fredericksburg, Va.," and "Street Scene in Rome"; member of the National Academy (1852).

DAUBIGNY, CHARLES FRANCOIS (1817-1878). A French landscape painter and etcher; born in Paris; member of the Barbizon school; studied with Paul Delaroche. Many of his works are in the United States. "On the River Oise" in New York, a "Town and River Scene" in Philadelphia, and others are well known.

DAVENPORT, FANNY LILY GIPSY (1850-1898). An American actress; born in London, England; daughter of Edward Loomis Davenport (1816-1877); first appeared as a child in the Chambers Street Theatre in New York (1857); most successful in Daly's company in leading parts (1869-1873).

DAVENPORT, HOMER CALVIN (1867-). An American cartoonist; born at Silverton, Ore.; worked on the San Francisco *Examiner* (1892-1895); on the *Journal* (now the *American*), and since with the *Mail* in New York.

DAVID, FELICIEN CESAR (1810-1876). A French composer; born at Vaucluse; wrote *The Desert*, a symphonic ode which achieved an instant and complete triumph; an oratorio, *Moses on Sinai*; a symphony, *Christopher Columbus*; and several operas.

DAVID, JACQUES LOUIS (1748-1825). Regenerator of the modern French school of painting; born in Paris. In the Revolution he was a violent Jacobin and wholly devoted to Robespierre. Several of the scenes of the Revolution supplied subjects for his brush. He was appointed first painter to Napoleon about 1804; and after the second restoration of Louis XVIII. he was included in the decree which banished all regicides from France, when he retired to Brussels, where he died; painted "The Dead Marat," the emperor, the pope, the famous "Mme. Récamier" in the Louvre, "The Three Fates," "The Death of Socrates," "The Oath on the Tennis Court," and "Rape of the Sabines."

DAVID, PIERRE JEAN (1788-1856). A French sculptor; born in Angers (hence commonly called David d'Angers). He executed a great number of medallions, busts, and statues of celebrated persons of all countries, including those of Washington, Lafayette, and Jefferson.

DECAMPS, ALEXANDRE GABRIEL (1803-1860). A French painter; born in Paris; studied under David and Ingres. His "Midnight Watch at Smyrna" is in the Metropolitan in New York and "The Suicide" in the Walters collection at Baltimore. His best work is at Chantilly and in London; one of the best colorists France has produced.

DEGAS, HILIARE-GERMAINE EDGARD (1834-). A French impressionist artist; born in Paris; a pupil of Ingres; chief works are the "Absinthe Drinkers," the "Danseuse assise," and the "Danseuse" in the Luxembourg; "The Ballet in Robert le Diable" in London.

DE HAAS, MAURICE FREDERICK HENDRICK (1832-1895). A Dutch marine painter; born in Rotterdam. In 1857 he was made artist to the Dutch navy, and in 1859 he went to New York, where he lived till his death. His best known American work is "Farragut Passing the Forts."

DE KOVEN, HENRY LOUIS REGINALD (1859-). An American composer; born at Middletown, N. H.; graduate of Oxford (1879); studied music and singing at Stuttgart, Florence, and elsewhere with Vanuccini, Genée, Delibes, and others; wrote operas with Harry Bache Smith as librettist, such as *The Begum*, *Robin Hood*, and *Rob Roy*; others are *Don Quixote*, *The Fencing Master*, *The Highwayman*, *The Mandarin*, and *Maid Marian*. Songs, such as "Oh, Promise Me" and "The Armorer's Song," have been very popular.

DELACROIX (*d'lah-krwaw'*), **FERDINAND VICTOR EUGENE** (1799-1863). A French painter; chief of the Romantic school; born near Paris. In 1857 he was chosen by the Institute to fill the place of Delaroche. He was an artist of great versatility. Among his works are "Lady Macbeth," "The Massacre of Scio," "Dante's Boat," and "Milton Dictating Paradise Lost."

NAPOLEON (THE SNUFFBOX). BY DELAROCHE.

DELAROCHE (*d'lah-rosh'*), **HIPPOLYTE** (familiarly styled **PAUL**) (1797-1856). A French painter; born in Paris. His signal merits consist in correct drawing, brilliant and harmonious color, and great distinctness and perspicuity in treatment, rendering the story of his pictures at once intelligible. Among them are "The Princes in the Tower," "Strafford Blessed by Archbishop Laud," "Mazarin Playing Cards," "Execution of Lady Jane Grey," "Murder of the Duke of Guise," "Joan of Arc in Prison," and numerous portraits.

DELIBES, CLEMENT PHILIBERT (1836-1891). A French composer; born at St. Germain-du-Val; wrote the music of the ballet *La source*; *Coppélia*; an opera, *Le roi l'a dit*; the ballet *Sylvia*; the grand scena *La mort d'Orphée*; and the opera *Lakmé*, in which Marie Van Zandt sang the title rôle.

DETAILLE, JEAN BAPTISTE EDOUARD (1848-). A French historical and military painter; born in Paris; a pupil of Meissonier. His works include "Conquerors," which won him the Legion of Honor (1872); "In Retreat," "Charge of the Cuirassiers at Morsbronn," and the "Passing Regiment" in the Corcoran Gallery at Washington; "Skirmishing near Paris" and three others in New York; and equestrian portraits of Edward VII. and the duke of Connaught.

DIXEY, HENRY EDWARD (1859-). An American actor; born in Boston, Mass.; first appeared with the Boston Athenaeum stock company in *Under the Gaslight* in 1868; played Sir Joseph Porter in *Pinafore*, Dr. Syntax in *Cinderella at School*, the Lord Chancellor in *Iolanthe*, the title rôle in *Adonis*, *The Man on the Box*, and David Garrick in *Oliver Goldsmith*.

DOMENICHINO (*do-main-e-kee'no*), **DOMENICO ZAMPIERI** (1581-1641). A distinguished Italian painter of the Bolognese school. His "Communion of St. Jerome" in the Vatican is considered among the finest works of the masters. He assisted Annibale Carracci on his Farnese frescoes at Rome.

DONATELLO or **DONATO DI NICCOLO DI BETTO BARDI** (1386-1466). One of the revivers of the art of sculpture in Italy; born and died in Florence; patronized by Cosimo de' Medici and pupil of Brunelleschi and Squarcione. His masterpiece is "St. George," for San Michele in Florence. Other works are the bronze "David," the "St. John," the bust of Niccolo da Uzzano, and "Angel with the Tambourine."

DONIZETTI (*do-nid-zet'te*), **GAETANO** (1797-1848). An eminent Italian musical composer; born at Bergamo; composed in all over 65 operas. Among them are *Lucrezia Borgia*, *Lucia di Lammermoor*, *La fille du régiment*, *La favorita*, and *Don Pasquale*.

DONOGHUE, JOHN (1853-1903). An American sculptor; born in Chicago; studied there and at the Ecole des Beaux-Arts under Jouffroy. The "Young Sophocles Leading the Chorus after the Battle of Salamis" is considered one of the masterpieces of American sculpture. It is in the Chicago Art Institute. The "St. Paul" in the rotunda of the Congressional Library, the "Seraphim," and the "Hunting Nymph" are among his best works.

DORE (*do-ray'*), **LOUIS CHRISTOPHE GUSTAVE PAUL** (1833-1883). A French draughtsman and painter; born in Strassburg. He distinguished himself greatly as an illustrator of books. His illustrations of the Bible and Milton's *Paradise Lost* are of high excellence. Doré also won fame as a sculptor.

DOW or **DOUW, GERARD** (1613-1675). A distinguished Dutch genre painter; born at Leyden; a pupil of Rembrandt. His works, which are very numerous, are the fruit of a devoted study of detail and are remarkable for delicacy and perfect finish.

DRAKE, FRIEDRICH JOHANN HEINRICH (1805-1882). A German sculptor; born at Pyrmont; executed numerous statues and busts, among others, busts of Oken, Ranke, Bismarck, and Moltke. His chief works are the "Eight Provinces of Prussia," represented by large allegorical figures, and the "Warrior Crowned by Victory." His large bronze statue of Alexander von Humboldt is in Philadelphia.

DREW, JOHN (1853-). An American actor; born in Philadelphia; first appeared as Plumper in *Cool as a Cucumber* at the Arch Street Theatre there (1874); joined Daly's company in 1875 and became leading man in it (1879); played with Ada Rehan in Shakespearean plays; since 1892 has played under Charles Frohman.

DUBOIS, PAUL (1829-1905). A French sculptor and painter; born at Nogent-sur-Seine. His "Florentine Singer" in the Luxembourg, his equestrian statue of "Jeanne d'Arc" at Rheims, and his "Le connétable de Montmorency" at Chantilly are his chief works.

DUCCIO DI BUONINSEGNA (about 1260-1340). An Italian painter; founder of the Sienese school; born in Siena; learned his art at the hands of the best Byzantine masters. He became a master of composition, perspective, grouping, and light. His altarpiece, "Virgin and Child Enthroned," and "Life of Christ" in 27 scenes, in Siena; the "Transfiguration," "Annunciation," "Healing the Blind," and "A Madonna and Child" in London are his chief works. He was the first Italian painter of genius.

DUPRE, JULES (1811-1889). A French painter; born in Nantes. He is one of the most original and powerful of the French school. His landscapes are very popular in this country. He was the most prominent of the Fontainebleau artists of 1830, known as the Romantic or Natural school, which included Rousseau, Corot, Delacroix, Millet, and others.

DURAND, ASHER BROWN (1796-1886). An American painter; born at Jefferson, N. J.; an engraver until 1835; painted a series of heads of the presidents; took up landscape work and with Cole was the earliest of the first American school of landscape artists; founder of the National Academy and its president (1845-1861); chief works, "The Catskills from Hillsdale," "Harvey Birch and Washington," "A Mountain Forest," and "Kaaterskill Clove."

DURER (*doo'rair*), **ALBRECHT** (1471-1528). A German engraver and painter; born at Nuremberg. He is considered one of the earliest etchers. Among his more important copperplates (1494-1504) are "Adam and Eve," "The Nativity," "The Great Horse," and "The Little Horse." His magnificent woodcuts of the "Apocalypse" and the "Prodigal Son" were made about 1500. His paintings, "The Adoration of the Magi" in the Uffizi, the portrait of himself in Munich, the "Crucifixion" at Dresden, and "The Feast of the Rosary," and his portraits, including that of "Jerome Holzschuher" and "The Four Evangelists," are a few of the works of a man who ranks in the history of art with Leonardo da Vinci and Michelangelo.

DUSE (*doo'sa*), **ELEANORA** (1859-). An Italian actress; born in Vigevano. She has played in all the principal countries of Europe and visited the United States. She has played Juliet, Frou-frou, La Femme de Claude, Magda in *Heimat*, Santuzza in *Cavalleria Rusticana*, Mirandolina in *La locandiera*, Marguerite Gautier in *La dame aux camélias*, *Giaconda*, and *Francesca da Rimini*.

DUVENECK, FRANK (1848-). An American artist; born in Covington, Ky.; studied in Munich under Dietz. He has exercised a great influence on American art as an instructor. In 1875 his group of portraits was exhibited at the Boston Art Club. His "Turkish Page," "Circassian," "Italian Girl," "The Professor," and many etchings of Venetian subjects are among his best works.

DVORAK (*dvor'zhahk*), **ANTONIN** (1841-1904). A Bohemian composer; born near Kralup. Attention was first called to him by what remains his best work, a *Stabat Mater*, the most modern and one of the finest settings of this hymn. He came to the United States in 1892, and became director of the National Academy of Music in New York City until 1899; director of the Prague Conservatory (1901). His symphony *From the New World* was produced in New York in 1893. He has utilized the Hungarian music with all of its rhythms, intervals, sudden transitions, and wealth of harmony in his chamber music and songs.

EAMES, EMMA (1867-). A talented and popular American soprano; born in Shanghai, China; studied in Boston, Mass., under Miss Munger, in Paris under Mme. Marchesi, and in Brussels under Gevaert; made her début in Paris in *Romeo and Juliet*, having been rehearsed by Gounod himself (1889); became a prima donna at the Metropolitan Opera House in New York in the grand operas, especially in Wagnerian rôles, in which she has achieved great success.

EICHBERG, JULIUS (1824-1893). A German-American violinist and composer; born at Düsseldorf; studied under Fröhlich and Rietz; professor of violin and composition at the Geneva Conservatory; emigrated to Boston, Mass. (1856); director of the Boston Conservatory and superintendent of instrumental music in Boston public schools; wrote four operettas, including *The Doctor of Alcantara*, and many pieces for violin.

ELGAR, SIR EDWARD (1857-). An eminent English music composer; born and educated at Worcester; son of W. H. Elgar, organist for many years of St. George's Roman Catholic Church there; attended Worcester Glee Club from boyhood; learned the violin and occasionally led the orchestra; bandmaster of the county lunatic asylum; began to compose in 1883. Among his more than 50 works is the setting of Cardinal Newman's hymn, "The Dream of Gerontius." A three-day Elgar festival was held at Covent Garden, London, in 1904, in which year he was knighted. *The Apostles* was produced at Birmingham Festival in 1903, and at Cologne in 1904; oratorio, *The Kingdom*, in 1906, and a symphony in 1908.

ELSON, LOUIS CHARLES (1848-). An American critic and teacher of music; born in Boston, Mass.; studied under Glöggner at Leipzig; professor and lecturer at the New England Conservatory of Music; wrote *Curiosities of Music*, *History of German Song*, *The Great Composers*, *Woman's Work in Music*, *Modern Composers of Europe*, and *History of American Music*; *Folksongs of Many Nations*; *Elson's Musical Dictionary*; he has contributed many articles on music to newspapers and magazines; also lecturer at Lowell Institute and the colleges.

ELWELL, FRANK EDWIN (1858-). An American sculptor; born at Concord, Mass.; studied under French at Boston and Falguière at Paris; settled in New York (1885); chief works are "Death of Strength," "Diana and the Lion." "Egypt Awaken-

ing,'' and ''Dickens and Little Nell,'' which is in Fairmount Park, Philadelphia.

EMERY, STEPHEN ALBERT (1841-1891). An American musician; born in Paris, Maine; studied at Leipzig and at Dresden under Spindler; instructor in harmony at the New England Conservatory of Music (1867-1891); teacher of Parker, Foote, Hadley, and Nevin.

EMMETT, DANIEL DECATUR (1815-1904). An American negro minstrel and song composer; born at Mt. Vernon, Ohio; organized the ''Virginia Minstrels'' with Frank Brown, Whitlock, and Phelam (1842), opening at the Chatham Square Theatre in New York; wrote ''Dixie'' (1859), ''Old Dan Tucker,'' ''The Road to Richmond,'' ''Boatman's Dance,'' and ''Walk Along, John.''

ESSIPOFF, ANNETTE (1851-). A Russian pianist; born at St. Petersburg; considered one of the best women performers of the day. From the strength of her hands and the vigor of her playing she has been called ''iron wrists''; married her teacher, Leschetitzky (1880); visited the United States in 1876; professor at the St. Petersburg Conservatory (1893).

ETTY, WILLIAM (1787-1849). An English painter; born in York; studied under Lawrence and in Venice; R. A. in 1828. Among his works, which are marked by beauty and brilliance of color, are ''Cleopatra'' and ''Youth on the Prow and Folly at the Helm.''

EYCK, HUBERT (about 1370-1426), **JAN VAN EYCK** (about 1390-1440), and **MARGARET VAN EYCK** (about 1377-1430). Eminent Flemish artists; founders of the early Flemish school; born at Maaseyck on the Maas. They were two brothers and sister. Tradition says they discovered the art of oil painting, but the art was known in the twelfth century. They discovered drying mediums and brilliant coloring. Their works include ''The Adoration of the Lamb'' at Ghent by Hubert; two said to have been painted by Jan are in the Metropolitan Museum in New York; Margaret, a member of the order of Our Lady of Ghent, led a retired life. She is believed to have painted a series of miniatures for the missal of the duke of Bedford.

EZEKIEL, MOSES (JACOB) (1844-). An American sculptor; born in Richmond, Va.; served in the Confederate army; studied sculpture at Berlin; won admission to the Society of Artists by his colossal bust of Washington; took the Michael Beer prize—the first foreigner to win it; settled in Rome. His ''Religious Liberty'' in Fairmount Park at Philadelphia, ''Apollo and Mercury'' in Berlin, ''Judith'' in Cincinnati, and the Jefferson monument at Louisville, Ky., are the best examples of his work.

FABRIANO, GENTILE DI NICCOLI DI GIOVANNI MASSI DA, or **GENTILE DA FABRIANO** (1360-1428). An Italian painter; the first great master of the Umbrian school. His chief work is the ''Adoration of the Kings'' for the Church of the Trinità at Florence.

FAED, JOHN (1819-1902). A Scottish painter; born at Burley Mill; a miniature painter in Edinburgh (1841-1849); settled in London; chief works are ''The Cottar's Saturday Night,'' ''Shakespeare and his Contemporaries,'' ''The Soldier's Return,'' ''The Morning after Flodden,'' and ''An Incident of Scottish Justice.''

FAED, THOMAS (1826-1900). Brother of John Faed; born at Burley Mill; distinguished himself in his art studies at Edinburgh; went to London (1852), where his pictures of Scottish life won him a foremost place among those of his contemporaries. Among his works are ''The Mitherless Bairn,'' ''The First Break in the Family,'' ''Faults on Both Sides,'' ''In Time of War,'' and ''Annie's Tryst.''

FALGUIERE, JEAN ALEXANDRE (1831-1900). A French sculptor; pupil of Jouffroy; born at Toulouse. His chief works are ''The Winner of the Cockfight,'' ''The Young Martyr Tarcisius,'' ''St. Vincent de Paul,'' ''Lamartine,'' ''Eve,'' ''Progress Abasing Error,'' and ''Poet Holding a Lyre.''

FANTIN-LATOUR, IGNACE HENRI JEAN THEODORE (1836-1904). A French painter; born at Grenoble; friend of Ingres, Delacroix, Corot, Millet, Courbet, Leighton, and Millais; excelled as a portrait painter and in the delicate drawing of flowers. His works include ''Hommage à Delacroix,'' ''Manet's Study at Batignolles,'' ''Coin de table,'' ''Autour du piano,'' ''Scene from Tannhäuser,'' ''Temptation of Saint Anthony,'' and ''Prelude to Lohengrin.''

FARINELLI or **CARLO BROSCHI** (1705-1782). An Italian male soprano of remarkable compass and power; made his début at Rome; went to England (1734); to Spain (1738); banished by Charles III. and went to Bologna (1759).

FASSETT, CORNELIA ADELE (1831-1898). An American portrait painter; born at Owasco, N. Y.; studied in New York, Paris, and Rome; settled in Chicago (1855); member of the Academy of Design there (1873); lived in Washington, D. C., after 1875; painted portraits of such celebrities as Garfield, Chief Justice Waite, and Clara Barton. Her ''Electoral Commission in Open Session'' is in the Capitol.

FECHTER, CHARLES ALBERT (1824-1879). An Anglo-French actor; born at Paris. He excelled in *Ruy Blas, The Corsican Brothers, Hamlet, Othello, Duke's Motto,* and *No Thoroughfare*; came to the United States in 1870, where his acting was most popular, but his attempts at management were unsuccessful.

FERRUZZI, ROBERTO (-). A modern Venetian painter. His ''Madonina'' was exhibited at the International Art Exposition at Venice in 1887 and excited a great deal of admiration.

MADONINA. BY ROBERTO FERRUZZI.

FEUERBACH, ANSELM VON (1829-1880). A German painter; born at Speyer; studied at Düsseldorf, Munich, Antwerp, Paris, Vienna, and Rome. Among his works are ''Hafiz at the Well,'' ''Death of Pietro Aretino,'' ''Iphigenia in Tauris,'' ''Pietà,'' and ''The Titans,'' a ceiling design in the Museum of Modeling at Vienna.

FIELD, JOHN (1782-1837). A British composer; born in Dublin; remembered for his ''nocturnes,'' which greatly influenced Chopin.

FILDES, SAMUEL LUKE (1844-). An English artist; born at Liverpool; contributed to various magazines and illustrated books, notably Dickens's *Edwin Drood.* His most noted pictures are ''The Poor of London,'' ''The Widower,'' and ''The Doctor.''

FISKE, MINNIE MADDERN (1865-). An American actress; born at New Orleans, La.; played Françoise in *Richelieu* when only 12 years old; at 16 appeared as a star in *Fogg's Ferry*; married Harrison Grey Fiske, editor of the New York *Dramatic Mirror* (1890); played the title rôles in *Tess of the d'Urbervilles, Becky Sharp, Leah Kleschna,* and *Roshmerholm.*

FITCH, WILLIAM CLYDE (1865-1909). An American dramatist; born in New York City; was graduated at Amherst (1886); wrote *Beau Brummel, Pamela's Prodigy, The Moth and the Flame, Nathan Hale, Barbara Frietchie, The Cowboy and the Lady, The Climbers, The Last of the Dandies, Major André, The Woman in the Case,* and many adaptations.

FLAGG, GEORGE WHITING (1816-1897). An American painter; born in New Haven, Conn.; nephew

and pupil of Washington Allston; lived in London for some years; settled in New York; member of the National Academy (1861). Among his works are "Columbus and the Egg," "Haidee," "Washington Receiving his Mother's Blessing," and "Landing of the Pilgrims."

FLANDRIN (*flon-dran'*), **JEAN HIPPOLYTE** (1809-1864). A French painter; born in Lyons, France. Among his chief works are the fine series of frescoes in the churches of St. Germain-des-Près and St. Vincent de Paul, Paris, which are reckoned among the masterpieces of modern painting. He was the favorite pupil of Ingres, and his works show a mystic tendency. "Christ Going up to Jerusalem," "Christ Going to Calvary," and "Recognition of Theseus" are among his best works.

FLAXMAN, JOHN (1755-1826). An English sculptor and draughtsman; born in York. The monuments to Nelson and Howe in St. Paul's are by his hand. One of his finest productions is the "Shield of Achilles"; elected R. A. (1800); and professor of sculpture (1810).

FLOTOW, FREDERICK FERDINAND ADOLPHUS VON (1812-1883). A German composer of operas; born at Teutendorf. His best known work is *Martha*. The best among his later operas are *Indra, La veuve Grapin*, and *L'ombre*.

FOLEY, JOHN HENRY (1818-1874). An Irish sculptor; born in Dublin. The most popular of his works is a statue of Selden placed in the new palace of Westminster, considered his masterpiece. Among his other works of great merit are "Death of Abel," "Innocence," "Ino and Bacchus," "Youth at the Stream," "Caractacus," "Egeria," "O'Connell," "Goldsmith," "Burke," "Asia," and "Prince Consort." He designed the seal for the Confederate States. His last work was a bronze statue of Stonewall Jackson for South Carolina.

FONTA'NA, DOMENICO (1543-1607). An Italian architect. Under Pope Sixtus V. he erected the Egyptian obelisk in front of St. Peter's, Rome (1586), and later built the Lateran Palace, the Vatican Library, and the Royal Palace at Naples.

FOOTE, ARTHUR WILLIAM (1853-). An American musician and composer; born at Salem, Mass.; studied under Paine; settled in Boston and studied under Lang; organist of the First Unitarian Church at Boston (1878). Among his works are chorus and orchestra accompaniment to Longfellow's *Farewell of Hiawatha, Wreck of the Hesperus*, and *Skeleton in Armor*; overtures; piano music; and vocal works.

FORBES, STANHOPE ALEXANDER (1857-). An Irish painter; born in Dublin; studied under Bonnat in Paris; elected A. R. A. (1892). Among his works are "The Fish Sale," "Forging the Anchor," and "The Smithy."

FORBES-ROBERTSON, JOHNSTON (1853-). English actor; born in London; played Romeo to Modjeska's Juliet, Claudio, Launcelot, Buckingham, Lucas Cleeve in *The Notorious Mrs. Ebbsmith*, Romeo to Mrs. Patrick Campbell's Juliet, Constantine Brancomir in *For the Crown*, and *Hamlet* and *Macbeth*. Visited the United States and Canada (1909-1910).

FORREST, EDWIN (1806-1872). An American actor; born in Philadelphia, Pa. He played with remarkable success in Europe and the United States; in 1871 retired from the stage. His first appearance was at the Walnut Street Theatre in Philadelphia as young Norval in Home's *Douglas* (1820). He played Shakespearean rôles in New York with great success. In 1849 the jealousy between him and Macready culminated in the Astor Place riots, which caused the 7th Regiment to be called out, and resulted in the death of a score of people and the wounding of many more.

FORRESTER, ALFRED HENRY, or **ALFRED CROWQUILL** (1804-1872). An English artist; born in London; noted for his contributions to *Punch* and *The Illustrated London News*.

FORTUNY Y CARBO, MARIANO JOSE MARIA (1839-1874). A Spanish painter; born at Réus, Catalonia; studied at Rome. His "Mendicant," "Don Quixote," "The Hindu Snake Charmer," and "An Ecclesiastic" are in Baltimore. His "Camels at Rest," "The Serpent Charmer," and a "Lady in Black" are at the Metropolitan Museum in New York. "The Court Jester" and the "Arabian Fantasia" are in private collections in New York.

FOSTER, BENJAMIN (1852-). An American landscape and animal painter; born at North Anson, Me.; studied under Thayer in New York and with Merson and Morot in Paris; is especially strong in his hazy moonlit scenes and in seascapes; member of the National Academy (1904) and of its Council (1905).

FOSTER, STEPHEN COLLINS (1826-1864). An American song writer; born near Pittsburg, Pa. He composed the music and wrote the words of over 125 popular songs and melodies, such as "Old Folks at Home," "Nellie Bly," "Old Black Joe," "Nelly was a Lady," "Massa 's in the Cold, Cold Ground," and "Come Where My Love Lies Dreaming."

FOUCQUET, JEAN (1415-about 1485). A French painter; born at Tours; studied in Italy; court painter to Louis XI. He was a very great artist in his time. Among his works are a miniature "Adoration of the Magi" at Chantilly, portraits at Paris and Berlin, and a series of 40 miniatures for Etienne Chevalier's *Book of Hours*.

FOWLER, FRANK (1852-). An American painter; born in Brooklyn, N. Y.; studied with Edward White at Florence, with Carolus Duran and at the Ecole des Beaux-Arts in Paris; assisted Carolus Duran on a ceiling for the palace of the Luxembourg, now in the Louvre; settled in New York (1879); member of the National Academy (1899); noted for his portraits of celebrities and a decorative ceiling in the ball room of the Waldorf-Astoria.

FRANCIA or **FRANCESCO RAIBOLINI** (1450-1517). An Italian painter; born at Bologna. His best work is seen in his madonnas. He came very near to being a genius.

FRANZ, ROBERT (1815-1892). A German musician; born in Halle, Prussia. He was famous for his songs, which were of a peculiar lyric beauty and number about 250. His first published composition appeared in 1843. His later years were spent in editing the works of Bach, Handel, and others.

FREER, FREDERICK WARREN (1849-). An American artist; born at Chicago; studied in Munich; settled in New York (1880); associate of the National Academy. Among his chief works are "Souvenir of Gainsborough," "In Ambush," "Behind the Fan," "A Lady in Black," and "The Mirror"; removed to Chicago (1890) and taught in the Art Institute.

FREMIET, EMMANUEL (1824-). A French sculptor; born in Paris; nephew and pupil of Rude. Among his best works are "Joan of Arc" at Paris, "Joan of Arc" and "Condé" at Nancy, "Velasquez" at Paris, "Lesseps" at the entrance to the Suez Canal, and "Gorilla Carrying off a Woman."

DEATH AND THE YOUNG SCULPTOR. BY FRENCH. **Milmore Memorial, Forest Hills Cemetery, Boston.**

FRENCH, DANIEL CHESTER (1850-). An American sculptor; born at Exeter, N. H.; studied with J. Q. A. Ward and in Florence and Paris. Among his works are "Minute Man"; busts of Emerson, Alcott, Hunt, and John Boyle O'Reilly; groups on the St. Louis Customhouse, the Philadelphia Courthouse, the Boston Post Office, and the New York Customhouse; "The Angel of Death and the Young Sculptor," "The Republic," and "Alma Mater" at Columbia University; statues of John Harvard, Rufus Choate, Thomas Starr King, and General Cass. His "Washington" in collaboration with Potter was presented to France by the

Daughters of the Revolution. His group of "Doctor Gallaudet and his First Deaf Mute Pupil" is in Washington.

FRITH, WILLIAM POWELL (1819-1909). An English painter; born at Aldfield, Yorkshire; elected A. R. A. (1845) and R. A. (1853). Among his best works are "Ramsgate Sands," "The Derby Day," "The Railway Station," "The Marriage of the Prince of Wales," and "The Road to Ruin."

FROHMAN, CHARLES (1858-). An American theatrical manager; born in Sandusky, Ohio; began at 18 as manager of one of Haverly's minstrel troupes; leased Madison Square Theatre (1890); opened the Empire with Belasco's *The Girl I Left Behind Me* (1893); manager or lessee of six theaters in New York and interested in five in London.

FROHMAN, DANIEL (1853-). An American theatrical manager; born at Sandusky, Ohio; brother of Charles Frohman; began as manager of the Lyceum in New York (1884); leased Daly's (1898); opened the New Lyceum (1903).

FROMENTIN, EUGENE (1820-1876). A French painter and writer; born in La Rochelle. His "Crossing the Ford" and "Arabs Watering Horses" are in New York, and his "Encampment in the Atlas Mountains" is in Baltimore. His *Les maîtres d'autrefois* is the sole masterpiece of art criticism published in France in the nineteenth century.

FROST, ARTHUR BURDETT (1851-). An American illustrator; born in Philadelphia, Pa.; studied in Paris. Among his illustrations are those in Frank Stockton's *Rudder Grange* and collected volumes *Stuff and Nonsense*, *The Golfer's Alphabet*, and *Book of Drawings*.

FULLER, GEORGE (1822-1884). An American painter; born at Deerfield, Mass.; studied under Henry Kirke Brown at Albany, N. Y., and abroad; noted for his portraits. Among his other works are "A Turkey Pasture in Kentucky," "And She was a Witch," and "Winifred Dysart"; member of the National Academy (1857).

FURNESS, WILLIAM HENRY, JR. (1828-1867). An American portrait painter; born in Philadelphia, Pa.; studied in Düsseldorf under Leutze.

FURNISS, HARRY (1854-). An English caricaturist; born at Wexford; special artist on *The Illustrated London News* and on *Punch's* "Essence of Parliament."

FURSCH-MADI, EMMA (1847-1894). A French soprano singer; born at Bayonne; sang the leading soprano parts in *Aïda*, *Don Giovanni*, *Huguenots*, *Trovatore*, and others in France, England, and in the United States from 1884 till 1894.

GADE, NIELS WILHELM (1817-1890). A Danish musical composer; born at Copenhagen; studied at Leipzig and formed a friendship with Mendelssohn; with Hartmann founded the conservatory at Copenhagen (1865). His best works include *Michael Angelo*, an overture; eight symphonies; several compositions for piano and for strings; and cantatas, such as *Spring Message*, *Spring Fantasy*, *Psyche*, and *The Erl-King's Daughter*.

GADSKI (TAUSCHER), JOHANNA (1871-). A German soprano singer; born at Anclam; sang Brunhilde in the Metropolitan Opera House at New York (1896) and for several years sang leading parts there; a popular singer of German *Lieder*. She is greatest in Brunhilde in the *Ring*, Eva in *Die Meistersinger*, and Senta in *The Flying Dutchman*.

GAINSBOROUGH (*gainz'bro*), **THOMAS** (1727-1788). An eminent English landscape and portrait painter; born at Sudbury; became a fashionable portrait painter at Bath (1760); one of the 36 original members of the Royal Academy; settled in London (1774). He painted more than 300 canvases, of which 220 were portraits. The portrait of the "Duchess of Devonshire" was bought for £10,065. It was cut from the frame in the galleries of Thomas Agnew and Sons by a thief (1876) and recovered in the United States (1901). It is now in the collection of Mr. J. Pierpont Morgan of New York. "A Landscape with Figures" is in the Chicago Art Institute; and two "Landscapes," "Mr. Burroughs," and "A Child with Cat" are in the Metropolitan Museum at New York.

GALLAIT, LOUIS (1810-1887). A Belgian painter; born at Tournai; chief works are "Render unto Caesar the Things which are Caesar's," "Christ Healing a Blind Man," "Abdication of Charles V.," "Egmont Preparing for Death," "Alva Looking upon the Bodies of Egmont and Horn," "The Last Moments of Count Egmont," and "The Plague of Tournai."

GARCIA, MANUEL DEL POPOLO VICENTE (1755-1832). A noted Spanish tenor singer and composer; born at Seville. He spent his closing years in Paris as a teacher of singing, his voice being greatly impaired by age as well as fatigue. His eldest daughter was the celebrated Madame Malibran.

GARRICK, DAVID (1717-1779). A distinguished English tragedian; born at Hereford; pupil of Samuel Johnson; played Richard III. (1741); remained at Drury Lane Theatre in London for 30 years; buried in Westminster Abbey.

GAVAR'NI, PAUL (1801-1866). The *nom de plume* of **SULPICE GUILLAUME CHEVALIER**, caricaturist; born in Paris. Most of his best work appeared in *Le Charivari*, but some of his bitterest and most earnest pictures, the fruit of a visit to London, appeared in *L'Illustration*. He also illustrated Balzac's novels and Sue's *Wandering Jew*.

GAY, EDWARD (1837-). An American artist; born in Dublin, Ireland; brought to America (1848); studied under James Hart at Albany, N. Y., and under Lessing at Düsseldorf; settled in New York (1867); member of the National Academy (1870). His "Broad Acres" won the Metropolitan prize of $2,000 in 1887 and is now in the Metropolitan Museum at New York.

GAY, WALTER (1856-). An American artist; born at Hingham, Mass.; studied with Bonnat in Paris. His "Fencing Lesson" was exhibited at the Salon (1879); his "Bénédicité" was purchased by the French government and given to the Amiens museum; his "Las cigarreras" is in the Luxembourg; his "Spinners" is in the Metropolitan Museum at New York; and there are some highly representative pieces in the Tate collection in London and in the Boston Museum of Fine Arts.

GERARD, FRANCOIS PASCAL SIMON, BARON (1770-1837). A French painter; born at Rome, of French and Italian parentage. In 1795 his "Blind Belisarius" brought him to the front, while subsequent work as a portrait painter raised him above all his contemporaries. His masterpiece, "Entry of Henry IV. into Paris," brought him a barony at the hands of Louis XVIII. His historical paintings, characterized by minute accuracy of detail, include "Napoleon in his Coronation Robes" and "Battle of Austerlitz."

COFFEE HOUSE AT CAIRO. BY GEROME.
In the Metropolitan Museum of Art, New York.

GERICKE, WILHELM (1845-). A German orchestra conductor; born at Gratz, Austria; studied at the Vienna Conservatory and with Dessoff and Hans Richter; conductor at Linz (1865); second conductor at Vienna under Richter (1874); succeeded Brahms as conductor of the Gesellschaftconcerte in Vienna (1880); succeeded Georg Henschel as conductor of the Boston Symphony Orchestra (1884-1889); returned to Vienna on account of ill health until 1898, when he succeeded Emil Paur in the Boston Symphony Orchestra until his resignation in 1906.

GEROME (*zhay-rome'*), **JEAN LEON** (1824-1904). A celebrated French painter and sculptor; born at Vesoul. He studied at Paris under Paul Delaroche,

with whom he subsequently traveled in Italy. Among his most famous pictures, all characterized by vivid coloring and strong dramatic effect, are ''The Age of Augustus and the Birth of Christ,'' ''Roman Gladiators before Caesar,'' and ''Cleopatra and Caesar.'' His ''Abyssinian Chief'' and ''Sheik at Devotions'' are at the Metropolitan Museum; ''Louis XIV. and the Grand Condé'' is also in New York; ''The Duel after the Masquerade'' is in the Walters collection at Baltimore; and his ''Caesar Dead'' is in the Corcoran Art Gallery in Washington.

GHIBERTI (*ge-bair'te*), **LORENZO** (1378-1455). An Italian sculptor and designer; born at Florence. His most famous achievement, which immortalized his name, was the execution of two doors with bas-relief designs in the baptistery at Florence. He spent 21 years at this work, and so noble were the designs and so perfect the execution that Michelangelo declared them fit to be the gates of Paradise.

GHIRLANDAJO, DOMENICO DI TOMMASO CORRADI DE BIGORDI (1449-1494). An Italian painter; born at Florence. He was a painter of amazing facility, as shown by his ''Visitation'' in the Louvre; his ''Adoration of the Magi'' in the Church of the Innocents at Florence; his ''Birth of John the Baptist'' in the Church of Santa Maria Novella at Florence; and his fresco, ''The Last Supper,'' in the Church of the Ognisanti at Florence.

GIBSON, CHARLES DANA (1867-). An American artist; born at Roxbury, Mass.; studied at the Art Students' League in New York; contributor in black and white for many years to *Life*; studied in Julien's studio in Paris; developed the American girl or the ''Gibson girl.'' In 1906 he began the study of color work in Europe.

GIBSON, JOHN (1790-1866). An English sculptor; born at Gyffin, near Conway, Wales. He took to carving in wood and stone, and supported by Roscoe became a pupil of Canova and afterwards of Thorwaldsen in Rome. His best works are ''Theseus and the Robber''; ''Amazon Thrown from Her Horse''; statues of George Stephenson, Peel, and Queen Victoria; ''The Hunter and the Dog''; ''The Tinted Venus''; ''Pandora''; ''Mars and Cupid''; and ''Hero and Leander.'' The only pupil he ever had was Harriet Hosmer, the American sculptor.

GIFFORD, ROBERT SWAIN (1840-1905). An American artist; born on Naushon Island, Mass.; studied with Albert van Beest in Rotterdam, Holland; painted mostly landscapes of scenes along the coast of New England.

GIFFORD, SANFORD ROBINSON (1823-1880). An American artist; born in Greenfield, N. Y.; traveled and studied abroad. His works include ''San Giorgio,'' ''Venice,'' ''Ruins of the Parthenon,'' ''Tivoli,'' ''The Golden Horn,'' ''Morning on the Adirondacks,'' ''Sunset on the Hudson,'' and ''Mount Rainier.''

GILBERT, ANNE HARTLEY (1821-1904). An American actress; born at Rochdale, England; came to America in 1849; played Mrs. Hardcastle to W. E. Burton's Tony Lumpkin at Cleveland (1857); was most successful in ''old woman'' parts.

GILBERT, SIR JOHN (1817-1897). An English artist; born at Blackheath, London; an illustrator of books, among the number an edition of Shakespeare; illustrated also Longfellow's *Poems* (1858) and an edition of *Evangeline* (1856); contributed to the *Illustrated London News* and the London *Journal*; elected R. A. in 1876. He was a chevalier of the Legion of Honor.

GILLETTE, WILLIAM HOOKER (1855-). An American actor and playwright; born at Hartford, Conn.; played *The Private Secretary*, *The Professor*, *Esmeralda*, *A Legal Wreck*, *Held by the Enemy*, *Too Much Johnson*, *Mrs. Wilkinson's Widows*, *All the Comforts of Home*, *Because She Loved Him So*, *Clarice Morland*, *Secret Service*, and *Sherlock Holmes*, all his own plays, in which he took the leading part.

GIORGIONE or **GIORGIO BARBARELLI** (about 1478-1511). A Venetian painter; born at Castelfranco. He was one of the seven supreme colorists of the Renaissance; studied with Giovanni Bellini. His authentic works are ''The Madonna with Saints Francis and Liberale'' at Castelfranco, ''The Sleeping Venus'' at Dresden, ''Fête Champêtre'' in the Louvre, ''The Family of Giorgione,'' ''The Three Philosophers,'' and ''The Concert.''

GIOTTO (*jot'to*) **DI BONDONE** (1266-1337). A great Italian painter; born at a village near Florence; was a shepherd's boy. While tending his flock and drawing pictures of his sheep, it is said he was discovered by Cimabue, who took him home and made a pupil of him. That he was a pupil of Cimabue is now discredited. Ruskin says of him: ''His special character among the great painters of Italy was that he was a practical person; what others dreamed of he did; he could work in mosaic, he could work in marble, and paint; could build . . . built the Campanile of the Duomo, because he was then the best master of sculpture, painting, and architecture in Florence, and supposed in such business to be without a superior in the world.''

GIULIO ROMANO (*joo'le-o ro-mah'no*) (properly **GIULIO PIPPI DE' GIANNUZZI**) (1492-1546). An Italian artist; born in Rome; assisted Raphael in the execution of several of his finest works, especially in the Vatican series known as ''Raphael's Bible.'' ''The Battle of Constantine'' and the ''Apparition of the Cross'' in the Sala di Constantino are Giulio's own work.

GLUCK (*glook*), **CHRISTOPH WILLIBALD RITTER VON** (1714-1787). A German composer. He conjoined with himself in his labors the poet Ranieri di Calzabigi, and his opera, *Orpheus and Eurydice*, was received with tumults of applause. In 1774 he went to Paris and presented there successively several masterpieces, including *Alcestis*, *Paris and Helen*, *Iphigenia in Aulis*, *Armida*, *Bauci e Filemone*, and *Echo and Narcissus*.

GOLDMARK, KARL (1830-). An Austrian composer; born at Keszthely, Hungary. Among his works are *The Queen of Sheba*; his symphony, *The Country Wedding*; *The Cricket on the Hearth*; and *Merlin*.

GOMEZ, SEBASTIANO (1616-1690). A Spanish painter; a slave of Murillo, who liberated him and took him into his studio.

GOODWIN, NATHANIEL CARL (1857-). An American actor; born at Boston, Mass.; played a minor part in *Law of New York* at the Howard Athenaeum in Boston (1876), Captain Dietrich in *Evangeline*, in *Hobbies*, *The Mascot*, *Pinafore*, *Cinderella at School*, *In Mizzoura*, *David Garrick*, and *Nathan Hale;* is to be the star in *The Prodigal Father*, 1910.

GOTTSCHALK, LOUIS MOREAU (1829-1869). An American pianist and composer; born at New Orleans, La.; studied at Paris under Hallé, Stamaty, and Maleden; played with phenomenal success all over the United States after 1853. Among his 100 compositions are *Bananier*, *Cradle Song*, *Last Hope*, and a *Tarantella* for piano and orchestra.

GOUJON (*goo-zhon'*), **JEAN** (about 1515-1572). A French sculptor and architect; born in Paris. He was the author of what is considered the masterpiece of French sculpture, the ''Huntress Diana,'' now in the Louvre collection, and the ''Fontaine des Innocents.''

GOULD, THOMAS R. (1818-1881). An American sculptor; born in Boston, Mass.; studied under Seth Cheney and in Florence. Bust of ''Satan'' and of ''Christ''; portrait busts of Emerson, Booth, and John A. Andrew; and the statue of John Hancock in the town hall of Lexington are among his best works.

GOUNOD (*goo-no'*), **CHARLES FRANCOIS** (1818-1893). A French composer; born in Paris. In 1859 he produced *Faust*, his chief work, which attained European popularity, and raised its composer to the foremost rank of contemporary musicians. From 1870 to 1875 he resided in England. His other works include *Sapho*, *Messe solennelle*, *Philemon and Baucis*, *Mireille*, *Romeo and Juliet*, *Cinq Mars*, *Polyeucte*, *La rédemption*, and *Mors et vita*.

GOYA Y LUCIENTES, FRANCISCO JOSE DE (1746-1828). A Spanish painter; born near Saragossa; friend of Louis David at Rome; painted the portrait of the duke of Wellington. His etchings and aquatints are much finer than his sacred subjects. His three best styles are adequately shown by ''The Picnic,'' ''The Bewitched,'' and ''A Portrait'' in the National Gallery at London.

GOZZOLI, BENOZZO (1420-1498). An Italian painter; born at Florence; pupil of Fra Angelico; assisted Ghiberti in bronze work; painted the immense frescoes in the Church of Saint Agostino at San Gemignano, and the vast series of frescoes in the Campo Santo at Pisa.

GRAU, MAURICE (1849-1907). A German-American opera manager; born at Brünn in Moravia; brought to the United States in 1854; brought Aimée to America in 1872; formed the Clara Louise Kellogg Opera Company (1873); managed the tours of Salvini, Rubinstein, Patti, Bernhardt, Irving, Jane Hading, Mounet-Sully, and Mme. Réjane; manager of the Metropolitan Opera House at New York (1897-1903).

GUERIN, PIERRE NARCISSE, BARON (1774-1833). A French painter; born at Paris; pupil of Regnault and influenced by David; chief works are "The Return of Marcus Sextus," "Phedra Accusing Hippolytus," "Orpheus at the Tomb of Eurydice," "Andromache," "Clytemnestra," "Aeneas and Dido," and "Bonaparte Pardoning the Rebels at Cairo." He exhibited at Salons (1799-1819).

HEAD OF A YOUNG GIRL. BY GREUZE.

MATER DOLOROSA. BY GUIDO RENI.

GREENOUGH (*green'oh*), **HORATIO** (1805-1852). An American sculptor; born in Boston, Mass.; studied four years at Harvard; from 1825 spent the greater part of his life in Italy. His "Venus Victrix" is in the Boston Athenaeum, and his colossal statue of Washington, his principal work, in front of the National Capitol.

GUIDO RENI (1575-1642). An Italian painter of the school of Bologna; best known by his masterpiece "Aurora and the Hours" at Rome, painted on a ceiling; his unfinished "Nativity" at Naples; the "Crucifixion of St. Peter" in the Vatican; the "Madonna della Pietà," the "Crucifixion," and the "Massacre of the Innocents" at Bologna; and "St. Paul the Hermit" and "St. Anthony in the Wilderness" in Berlin.

AURORA. BY GUIDO RENI.
In the Rospigliosi Palace, Rome.

GREUZE, JEAN BAPTISTE (1725-1805). A French painter; born at Tournus, near Mâcon; elected to the Academy (1769). His portraits and heads are the more esteemed of his works. The Wallace collection at London has the greatest number of his works; several are in the Louvre; and some in the Metropolitan Museum at New York.

GRIEG, EDVARD HAGERUP (1843-1907). A Norwegian composer and pianist; born at Bergen, of Scottish ancestors. His works include orchestral suites, cantatas, quartets, trios, sonatas for violin and for violoncello, songs, and compositions for the piano.

HACKETT, JAMES HENRY (1800-1871). An American actor; born in New York City. He was particularly successful in impersonating Yankees and Westerners, but was best known by his Falstaff, which he played first about 1832. He wrote *Notes and Comments on Shakespeare.*

HACKETT, JAMES KETELTAS (1869-). An American actor; born at Wolf Island, Ontario; first appeared with A. M. Palmer's company (1892). His

successes have been in *The Prisoner of Zenda*, *Rupert of Hentzau*, *The Pride of Jennico*, *Don Caesar's Return*, and *The Walls of Jericho*.

HADING, JANE, or **JEANNE ALFREDINE TREFOURET** (1859-). A French actress; born at Marseilles; one of the most famous *comédiennes* of her day; accompanied Coquelin to America (1888 and in 1894); played Claire in Ohnet's *Maître de Forges*, Sapho, Frou-frou, Comtesse Sara, and in *The Second Mrs. Tanqueray*.

Ecce Homo. By Guido Reni.

HALEVY (*ah-lay-ve'*), **JACQUES FRANCOIS** (1799-1862). A French operatic composer; born at Paris; became a student at the Conservatoire; wrote a number of operas, of which *La Juive* and *L'éclair* were the best.

HALS, FRANZ, THE ELDER (1584-1666). A Dutch portrait and genre painter; born in Mechlin. He is usually regarded as the founder of the Dutch school of genre painting and the greatest portrait painter of Holland excepting Rembrandt. He died in Haarlem, Netherlands. His brother, **DIRK HALS** (1589-1656), a pupil of Abraham Bloemaert, was also an excellent genre painter. Several of Franz's sons were artists, the most celebrated being **FRANZ HALS, THE YOUNGER,** who flourished from about 1637 to 1669.

HAMILTON, JOHN McLURE (1853-). An American portrait painter; born in Philadelphia; studied with Van Lerius in Antwerp and with Gérôme in Paris; painted "The Syren," "The Heiress," and "Cerise"; then turned to portrait painting; settled in London (1878); chief portraits are a "Gladstone" in the Luxembourg at Paris and one in the Pennsylvania Academy of Fine Arts in Philadelphia along with the portrait of Richard Vaux; Mrs. Gladstone, Bismarck, Cardinal Manning, John Tyndall, Herbert Spencer, G. F. Watts, and Sir Frederick Leighton.

HANDEL, GEORGE FREDERICK (1685-1759). A German composer; born at Halle-an-der-Saale, in Lower Saxony; settled in England in 1712. *The Messiah*, the greatest of oratorios, was produced in 1741. His other important oratorios are *Esther*, *Saul*, *Israel in Egypt*, *Samson*, *Judas Maccabaeus*, and 17 others. He wrote more than 40 operas, the cantatas *Acis and Galatea* and *Alexander's Feast*, and much church and chamber music, also many odes and songs. Handel was stricken with blindness (1752), but continued to conduct his oratorios until his death.

HARDING, CHESTER (1792-1866). An American portrait painter; born in Conway, Mass.; settled in Boston (1823); went to London (1832) and painted portraits of many noblemen. Among his portraits of Americans are those of Webster, Washington Allston, John Randolph, Clay, Calhoun, Chief Justice Marshall, Presidents Madison, Monroe, and John Quincy Adams, and General Sherman.

HARDING, JAMES DUFFIELD (1798-1863). An English water-color artist; born probably at Deptford; introduced the free use of opaque colors in his work. He was also a skilled lithographer and wrote *The Principles and Practice of Art*.

HARPIGNIES, HENRI JOSEPH (1819-1906). A French landscape painter; born at Valenciennes; visited Italy with Corot (1860). Among his works are "Lisière de bois de l'allier," "Le saut de loup" (his masterpiece in the Louvre), "Evening," "Rising of the Moon," and a water color, "Garden of the Villa Medici."

HART, JOEL T. (1810-1877). An American sculptor; born in Clark County, Ky. His chief works are "Angelina," "Woman Triumphant," "Il Penseroso," statue of Henry Clay at Richmond, Va., and portrait busts of Governor Crittenden, General Taylor, and Robert Wickliffe.

HART, SOLOMON ALEXANDER (1806-1881). An English painter; born at Plymouth, of Jewish descent; elected R. A. (1840); professor of painting at the Academy (1854-1863) and librarian (1865-1881). His works include "The Elevation of the Law," "Isaac of York in the Donjon of the Castle of Front-de-Boeuf," "English Nobility Receiving the Communion of the Catholic Church," and "Lady Jane Grey on Tower Hill."

HARTLEY, JONATHAN SCOTT (1845-). An American sculptor; born at Albany, N. Y.; studied with E. D. Palmer; three years at the Royal Academy at London and one year at Berlin; professor of anatomy for the Art Students' League at New York (1878-1884); member of the National Academy of Design (1891); married the daughter of George Inness, the painter. Among his works are "The Whirlwind," "Miles Morgan," "Ericsson," "Alfred the Great," and many portrait busts.

HARVEY, SIR GEORGE (1806-1876). A Scottish painter; born at St. Ninian's, Sterlingshire. His works are of Scottish history and life.

HAUCK, MINNIE (1852-). An American mezzo-soprano; born in New Orleans, La.; studied in Europe; made her début in New York in 1868; sang Violetta in *La traviata* at the Vienna court opera (1869); made a success of Bizet's *Carmen* in London, which had not pleased on its first performance there.

HAYDN, JOSEPH (1732-1809). A German musical composer. His masterpiece, the oratorio of *The Creation*, was produced in 1798; composed 125 symphonies, including *Farewell* and *Joy*; the "Emperor's Hymn," *Gott erhalte Franz den Kaiser*; the *Seasons*, an oratorio; and 83 string quartets. Haydn is regarded as the creator of the symphony.

HAYDON, BENJAMIN ROBERT (1786-1846). An English painter; born at Plymouth; studied at the Royal Academy. Among his works are "Dentatus," "The Judgment of Solomon," "Christ's Entry into Jerusalem" (now in Cincinnati), and "The Raising of Lazarus." He suffered keenly because his work was not appreciated, and, disappointed at the rejection of his historical designs for the Houses of Parliament, he committed suicide.

HEALEY, GEORGE PETER ALEXANDER (1808-1894). An American portrait painter; born in Boston, Mass.; studied in Paris; painted "Webster's Reply to Hayne," containing 130 portraits, now in Faneuil Hall, Boston; "Franklin Presenting Claims of the American Colonists to Louis XVI."; and portraits of several of the presidents, now in the Corcoran Art Gallery in Washington.

HEEM, JAN DAVIDSZ VAN (about 1603-1683). A Dutch painter; born at Utrecht. His work in flower and fruit still life is the greatest ever produced by any of the Dutch school. He also excelled in painting glass and crystal.

HEL'LER, STEPHEN (1814-1888). A distinguished pianist and composer; born at Budapest. In 1838 he settled in Paris and gave himself to teaching and composition. He ranks beside Chopin as a master of technique. His *Etudes*, *Preludes*, *morceaux* under quaint titles, and *Pensées fugitives* are his best familiar works. His work is generally elegant in form conception.

HELST, BARTHOLOMEUS VAN DER (1613-1670). One of the greatest of the Dutch portrait painters; born at Haarlem, but spent his life in Amsterdam. His "Banquet of the Civic Guard" was considered by Sir Joshua Reynolds to be "the first picture of portraits in the world." The Metropolitan has a portrait of a "Dutch Burgomaster."

FABIOLA. BY J. J. HENNER.

HENNER, JEAN JACQUES (1832-1905). A French painter; born in Bernwiller, in Alsace; pupil of Drölling and Picot; one of the most poetic and realistic of the French school. Among his works are "St. John the Baptist," "The Evening," "The Dead Christ," "The Chaste Susanna," "An Idyl," "The Good Samaritan," "Naiad," "Magdalene," and "St. Sebastian."

HENRY, EDWARD LAMPSON (1841-). An American painter; born in Charleston, S. C.; studied at Philadelphia and in Paris; member of the National Academy (1869). Among his works are "Initial Excursion of the First Railway Ever Constructed in New York," containing about 50 figures, in the Corcoran Art Gallery; "Old Clock on the Stairs;" and "A Morning Call in 1800."

HENSCHEL, ISIDOR GEORG (1850-). A German baritone singer, composer, and conductor; born at Breslau; achieved great successes at Brussels, Cologne, and London; conducted the Boston Symphony Orchestra for its first three seasons (1881-1884); succeeded Jenny Lind as professor of singing at the Royal College of Music (1886-1888). He composed songs, vocal studies, a *Requiem Mass*, *Stabat Mater*, *Te Deum*, an opera, *Nubia*, and an operetta, *A Sea Change* or *Love's Stowaway*, to words by W. D. Howells.

HENSELT, ADOLF VON (1814-1889). A German composer; born at Schwabach, in Bavaria; court pianist and imperial instructor at St. Petersburg. Schumann and Herr von Lenz regarded him as one of the greatest pianists. His *Concerto in F minor* (Op. 16), *Frühlingslied*, *Wiegenlied*, *Impromptu in C minor*, and *La Gondola* are among his best works.

HERBERT, VICTOR (1859-). An American violoncellist, conductor, and composer; born in Dublin. His mother was a daughter of Samuel Lover, the novelist; studied in Germany; came to the United States in 1886; violoncellist in the Metropolitan Opera House and appeared as soloist under Anton Seidl and Theodore Thomas; bandmaster of the 22d Regiment Band (1894); conductor of the Pittsburg Orchestra (1898-1904); formed his own orchestra in New York (1904); composed *The Captive* for the Worcester, Mass., Festival in 1891; the comic operas, *Prince Ananias*, *The Wizard of the Nile*, *The Serenade*, *The Idol's Eye*, *Happy Land*, *It Happened in Nordland*, and *Babes in Toyland*, besides several suites. He is grandson of Samuel Lover.

HERNE, JAMES A. (1840-1901). An American actor and dramatist; born at Troy, N. Y. In the latter part of his life he appeared only in his own plays, such as *Hearts of Oak*, *Margaret Fleming*, *Shore Acres*, *Rev. Griffith Davenport*, and *Sag Harbor*. His Uncle Nat Berry in *Shore Acres* was a notable creation in American comedy.

HEROLD, LOUIS JOSEPH FERDINAND (1791-1833). A French composer; born in Paris. His three *opéras comiques*, upon which his fame chiefly rests, are *Marie*, *Zampa*, and *Le pré aux clercs*. The overture to *Zampa* has always been extremely popular.

HERRERA (*er-ray'rah*), **FRANCISCO DE** (1576-1656). A distinguished Spanish painter; founder of the Seville or new Spanish school; born at Seville. His finest paintings include the famous "St. Hermenegild in Glory" in the Seville Museum and "The Last Judgment" and a "Saint Peter," both in churches at Seville. Others are in the Louvre, Paris. They exhibit boldness of execution with faultless technique.

HERVE, FLORIMOND RONGER (1825-1892). A French composer, librettist, actor, and manager; born at Houdain, near Arras; conducted popular promenade concerts in London; composed *Babil et Bijou*, *L'oeil crevé*, *Chilpéric*, and *Le petit Faust*.

HILLER, FERDINAND (1811-1885). A German composer, conductor, and pianist; born at Frankfort-on-the-Main; studied and toured with Hummel; went to Paris (1829); popularized the works of Bach and Beethoven; musical director at Düsseldorf (1847-1850); founded the Conservatorium at Cologne (1850); composed chamber music; *The Destruction of Jerusalem*, which is the finer of his two oratorios, and six operas.

HOB'BEMA, MEINDERT (1638-1709). A famous Dutch landscape painter; born at Amsterdam. His fine, subdued pictures of woodland life and scenery are ranked among the masterpieces of Dutch landscape painting, along with those of Cuyp and Ruysdael. Among his best works are "The Avenue of Middelharnis," "Showery Weather," "Watermills and Bleacheries," "Ruins of Brederode Castle," and "The Mill."

HOFFMAN, RICHARD (1831-1909). An American pianist and teacher; born at Manchester, England; came to the United States (1847) and for 50 years was closely connected with musical activities in New York, playing with Jenny Lind, Gottschalk, Bülow, and frequently as soloist with the Philharmonic Society.

HOFMANN, HEINRICH (1824-). A German historical painter; born in Darmstadt; professor at the Academy in Dresden (1862). His best known works are scenes from the life of Christ, though his works are drawn from every department of literature. His strongest point is his ideal conception of biblical scenes.

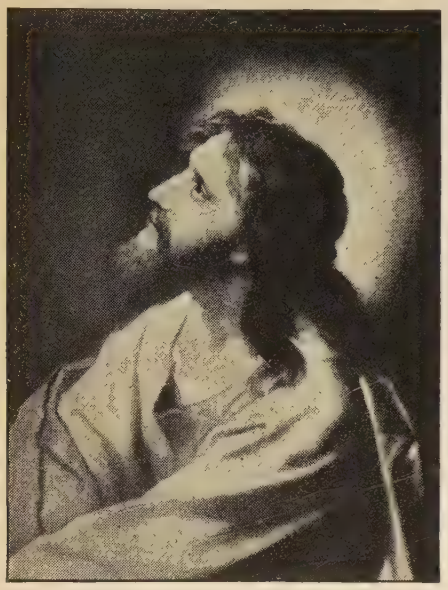
HOFMANN, JOSEF (1877-). A Polish pianist; born at Cracow; pupil of Rubinstein; made his début when only six years old. The Society for the Prevention of Cruelty to Children interrupted his concert tour in the United States in 1887, after he had given 52 concerts in two and a half months. He is among the most promising and popular of modern pianists.

HOGARTH, WILLIAM (1697-1764). Founder of the British school of painting; born in London, England; in 1718 commenced engraving arms and making designs and bookplates for the booksellers. His "Industry and Idleness" and "Marriage à la Mode" attracted universal attention. Ten of his principal pictures are in the National Gallery in London. The satire of Hogarth's works is great, but it is inspired by benevolence. The costumes are excellent and the painting good.

HOLBEIN (*hol'bine*), **HANS, THE YOUNGER** (1494-1543). A German painter; son of Hans Holbein the Elder; born at Augsburg; attracted the attention of Erasmus, who took a great interest in him, and persuaded him to go to England, and introduced him to Sir Thomas More, who in turn introduced him to Henry VIII. Here under Henry's patronage he remained, executing numerous portraits of his courtiers, till his death of the plague. His "Last Supper" and "Dance of Death" are well known. His "Virgin and Child with the Family of the Burgomaster Meyer" is at Darmstadt; his "Portrait of Erasmus" is in the Louvre; and his masterpiece in portraiture, "The Ambassadors," is in the National Gallery in London.

HOLL, FRANCIS MONTAGUE, or FRANK HOLL (1845-1888). An English portrait painter; born in London; painted "Hush" and "Hushed" in the Tate Gallery in London; "No Tidings from the Sea" for Queen Victoria; and portraits of Sir John Millais, Lord Wolsey, Gladstone, and others; R. A. in 1884.

HOLLAND, EDMUND MILTON (1848-). An American actor; born in New York City; played in Wallack's company (1867-1879), Pittacus Green in *Hazel Kirke*, Old Rogers in *Esmeralda*, Capt. Redwood in *Jim, the Penman*, Jenkins Hanby in *A Social Highwayman*, Leopold Kolditz in *Hearts are Trumps*, and Eben Holden.



Christ in Gethsemane. By H. Hofmann.

HOMER, WINSLOW (1836-). An American painter; born in Boston, Mass.; studied at the National Academy of Design and with Frederick Rondel; did book and newspaper illustrations; sent war pictures to *Harper's Weekly* from Washington during the Civil War; first oil paintings were "Prisoners from the Front," "Home, Sweet Home," and "Zouaves Pitching Quoits"; then "Cotton Pickers," "A Visit from the Old Mistress," and marine work, such as "The Life Line," "Eight Bells," "Launching the Boat," "A Northeaster," and "The Maine Coast," probably his best.

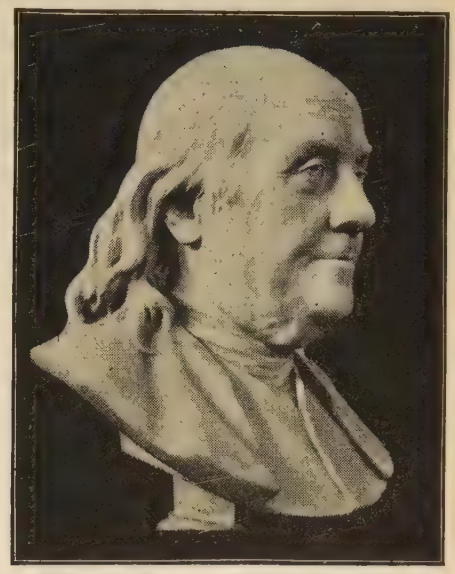
HOOK, JAMES CLARK (1819-1901). An English painter; born in London; elected R. A. in 1860. His work is especially good in Cornish landscapes and idyls of the sea.

HORSLEY, JOHN CALCOTT (1817-1903). An English painter; born at Brompton, London; painted frescoes for the Houses of Parliament (1845-1848), "Rent Day at Haddon Hall," "The Chess Players," "Youth and Age," "Under the Mistletoe," "Wedding Rings," and "The Healing Mercies of Christ."

HOSMER, HARRIET (1830-1908). An American sculptor; born at Watertown, Mass.; the only pupil Gibson ever had; studied at Rome, where she later took up her residence. Among her works are "Oenone," "Puck," "Beatrice Cenci," "Zenobia," "Sleeping Fawn," and "Waking Fawn."

HOUDON (*oo-don'*), **JEAN ANTOINE** (1741-1828). A French sculptor; born in Versailles. After studying in Italy he returned to Paris and executed the busts of Voltaire, Rousseau, Molière, Franklin, Buffon, Catherine II., and others. He was invited to the United States and carved the statue of Washington now at the Virginia State Capitol in Richmond, which is considered the most authentic likeness of "the father of his country."

HUMMEL, JOHANN NEPOMUK (1778-1837). A Hungarian composer and pianist; born at Pressburg; Mozart's most talented pupil; musical director to Prince Esterházy (1803), at Stuttgart (1816), and at Weimar (1820). Of his 127 compositions only a few are played, but in their day they were regarded by many as equaling those of Beethoven.



Bust of Franklin. By H. Houdon.

HUMPERDINCK, ENGELBERT (1854-). A German composer; born at Siegburg-on-Rhine; taught at Barcelona (1885-1886), at Frankfort-on-Main (1890-1896), and at Berlin since 1900. His fame was made by the fairy opera, *Hänsel und Gretel*, for which his sister wrote the libretto. In his operas he has drawn upon the folk song very freely.

Mary Magdalene. By H. Hofmann.

HUNT, WILLIAM HOLMAN (1827-). An English religious painter; born in London. Among his works are "Hireling Shepherd," "Awakened Conscience," "Light of the World," "The Scapegoat," "Christ Discovered in the Temple," and "The Triumph of the Innocents." Hunt was a potent force in the

pre-Raphaelite movement, to which he was drawn by his mystical and symbolical turn of mind.

THE LIGHT OF THE WORLD. BY W. HOLMAN HUNT.

HUNT, WILLIAM MORRIS (1824-1879). An American painter; born at Brattleboro, Vt.; studied in Paris under Couture; one of the discoverers of Millet, whose "Sower" he bought; established himself in Boston (1855); decorated the ceiling of the Capitol at Albany, N. Y., with "The Flight of Night" and "The Discoverer." His "Prodigal Son," "The Drummer Boy," "Charles River," and portraits of Chief Justice Shaw, Evarts, and Sumner are among his best works.

ICTINUS (fifth century B. C.). A famous architect of Greece; employed at Athens during the administration of Pericles. He designed the Parthenon, completed about 438 B. C., and, in collaboration with Carpion, it is said, wrote an architectural treatise thereon. He designed also the Temple of Apollo Epicurius at Bassae, and is mentioned by Vitruvius and Strabo as one of the architects of the Temple of Demeter and Persephone Eleusis.

IDRAC, ANTOINE (1849-1884). A French sculptor; born at Toulouse. Among his important works are "Cupid Stung by a Bee," bought by the French government, and "Mercury Discovering the Caduceus," now in the Luxembourg Museum. One of his later works, a "Salambo," received a first prize at the Munich Exposition, and secured for him the French Legion of Honor.

IFFLAND, AUGUST WILHELM (1759-1814). A noted German actor, dramatist, and director. He studied at Gotha; became director of the Berlin National Theatre in 1796; 15 years later was appointed manager of all the royal theaters. He was a fine comedian. His plays met with great success, notably *Die Jaeger*, *Dienstpflicht*, *Der Spieler*, and *Die Mündel*.

IMOLA, INNOCENZO DA, or INNOCENZO FRANCUCCI (about 1494-about 1550). An Italian painter. Among his important works are the frescoes of the "Death and Assumption of the Virgin" at San Michele, Bologna; the "Madonna in Glory" and "Madonna with Kneeling Donors" in the gallery of that city; and altarpieces in Berlin, Munich, and Faenza.

INGHAM, CHARLES CROMWELL (1796-1863). A British-American painter; born in Dublin; came to America in 1817 and became active in helping to promote an interest in art. He was successful as a painter of portraits and miniatures, and numbered many prominent men among his subjects. His best known figure paintings are "Death of Cleopatra," "Day Dream," and "White Plume." Among his portraits are those of De Witt Clinton and Lafayette. He was one of the original members of the National Academy of Design.

INGRES, JEAN AUGUSTE DOMINIQUE (1781-1867). An eminent French painter; born at Montauban. He became a pupil of David in 1796 and won the Prix de Rome in 1801. He went to Italy in 1806 and during his residence there produced many of his notable works. He supported himself for some years by portrait work. Of the latter Reinach says, "The portraits in pencil . . . must always be reckoned among the marvels of art." His historical paintings brought him much fame and many honors. Among them are "Oedipus and the Sphinx," the "Vow of Louis XIII.," "Joan of Arc," and the "Martyrdom of Saint Symphorien."

INMAN, HENRY (1801-1846). An eminent American artist; born in New York; died while at work on a commission from Congress for the historical embellishment of the Capitol. While in England he painted portraits of Wordsworth, Macaulay, Dr. Thomas Chalmers, and others. His American portraits are in the Boston Athenaeum, New York City Hall, and elsewhere. His other work includes "Rydal Water," "The Newsboy," and "Rip Van Winkle Awaking."

INNESS, GEORGE (1825-1894). An American painter; born in Newburg, N. Y.; resided in Italy from 1871 to 1875. His pictures are noted for the accuracy with which they represent the American climate and the aspects of American scenery. He was elected to the National Academy in 1868. Some of his works are "Delaware Valley," "American Sunset," "Pontine Marshes," "Niagara Falls," "Sunset—Montclair," and "Autumn Oaks."

AUTUMN OAKS. BY GEORGE INNESS.

INNESS, GEORGE, JR. (1854-). An American painter; born in New York; studied with his father in Rome and with Bonnat in Paris. Among his works are "The Ford," "Pasture at Watchung," "Roswell Smith," "Monarch of the Herd," and "After the Combat."

IRVING, SIR HENRY (1838-1905). An English actor; born in Keinton. His family name was Brodribb, which was changed to Irving by royal patent. His rôles include Mephistopheles, Hamlet, Coriolanus, King Lear, and a repertory that has been presented not only in England but in the United States, Australia, and France. He was knighted in 1895. His performance of Matthias in *The Bells* established his reputation in London. He associated with Ellen Terry; came with her to America in 1883 and several times afterward.

ISRAELS, JOZEF (1824-). A Dutch painter; born of Jewish parentage in Amsterdam. His more

noteworthy pictures are "The Frugal Meal," "The Faithful Comrades," "The Village Poor," and "The Struggle for Life." He is the interpreter of the peasants and fishermen in their daily lives.

ITTENBACH, FRANZ (1813-1879). A German painter; born at Düsseldorf; royal professor and member of the Academy at Vienna. His "Holy Family in Egypt" in the National Gallery at Berlin and "Christ and the Doctors" at Remagen are among his best works.

MORNING ON THE MEADOW. BY GEORGE INNESS, JR.

JACKSON, JOHN ADAMS (1825-1879). An American sculptor; born in Bath, Me.; studied in Paris under Suisse; lived in New York (1858-1860); then removed to Italy; chief works are a bust portrait of Wendell Phillips in the Boston Museum; one of Lyman Beecher owned by Henry Ward Beecher; "Eve and the Dead Abel;" "Cupid Stringing the Bow;" "The Culprit Fay;" a group at the southern gatehouse of Central Park in New York; and the Soldiers' Monument at Lynn, Mass.

THE CRUCIFIXION. BY ITTENBACH.

JANAUSCHEK, FRANCESCA ROMANA MAGDALENA (1830-1904). A German and American actress; born in Prague, Bohemia; leading actress at Frankfort (1848-1860); came to New York (1867), playing in German; studied English and presented Medea, Lady Macbeth, Meg Merrilies, and *The Great Diamond Robbery*.

JANSSENS VAN NUYSSEN, ABRAHAM (1567-1631). A Flemish painter; born at Antwerp; ranks next to Rubens among the Flemish masters of the seventeenth century. Among his best works are a "Madonna"; an "Adoration of the Magi"; "Scaldis," a representation of the river god of the Scheldt; an "Entombment" and "Madonna with Saints" at Antwerp; and an "Ecce Homo" and "Descent from the Cross" at Ghent. He was especially strong in torchlight effects.

JARVIS, JOHN WESLEY (1780-1840). An American artist; born in South Shields, England; nephew of John Wesley; came to Philadelphia at five years of age; encouraged in art by Malbone. His portraits of statesmen, divines, and naval heroes are in the City Hall at New York and in the New York Historical Society rooms; the pioneer of the study of anatomy in art in America.

JEANRON, PHILIPPE AUGUSTE (1809-1877). A French historical and genre painter; born at Boulogne-sur-Mer; director of the Louvre and National museums (1848), where he classified and arranged the art treasures of the Louvre; founded the Luxembourg Museum; chief works are "Little Patriots," "The Abandoned Port of Ambleteuse," "The Flight," and "The Repose in Egypt."

JEFFERSON, JOSEPH (1829-1905). An American comedian; born in Philadelphia, Pa. Jefferson was on the stage from his very infancy, appearing as Cora's child in *Pizarro* when only three years of age. In 1865 he visited London, and at the Adelphi Theatre played for the first time his world famous part of Rip Van Winkle, September 4, 1865. With this character his name is identified, and though he has shown himself an admirable comedian in many characters, to the English speaking world he will always be Rip Van Winkle.

JEHIN-PRUME, FRANTZ (1839-1899). A Belgian-Canadian violinist; born at Spa; pupil of Servais, François Prume, De Bériot, Léonard, Fétis, Vieuxtemps, and Wieniawski; toured Europe with the Rubinsteins, Jenny Lind, and Essipoff; and America with Carlotta, Patti, and Theodor Ritter (1869-1871); settled in Montreal, Canada, in 1887 and became professor at the Trafalgar Institute there.

JENSEN, ADOLF (1837-1879). A German song composer; born at Königsberg; conductor of the Posen City Theatre; two years in Copenhagen; taught in Tausig's school at Berlin (1866-1868); ranked only little below Schumann and Franz as a composer of *Lieder*.

JERICHAU, JENS ADOLF (1816-1883). A Danish sculptor; born at Assens, in Fünen; studied at home and with Thorwaldsen in Rome; professor at the Academy in Copenhagen (1849); chief works are "Hercules and Hebe," "Penelope," "The Panther Hunter," "Adam and Eve after the Fall," "Christ," "David," and the much admired monuments to Oersted and Andersen in Copenhagen.

JOACHIM, JOSEPH (1831-1907). A German violinist; born near Pressburg; regarded as the greatest performer of his time, his success extending over a period of more than 60 years. His greatest composition is his *Hungarian Concerto, Opus* 11. His other works follow Schumann's models and are grave and melancholic, but of earnest purpose and high ideal. He founded the Joachim Quartet in 1869 and it occupied a supreme position in the world of chamber music.

JOANES, VICENTE DE, or **VICENTE JUAN MACIP** (1523-1579). A Spanish painter of portraits and religious subjects; founder of the school of Valencia. His "Baptism of Christ," "Conversion of Paul," and a "Holy Family" in the Cathedral of Valencia; a "Last Supper" in the Church of St. Nicholas there; and a series of six pictures on the "Life of St. Stephen" in the Prado Museum are among his best works.

JOHNSON, DAVID (1827-1908). An American painter; born in New York City. His only instruction was a few lessons from J. F. Cropsey. Among his highly creditable work are scenes in New York state. His works are owned by private collectors.

JOHNSON, EASTMAN (1824-1906). An American painter; born in Lovell, Maine; studied at Düsseldorf, Italy, Paris, Holland, and at The Hague; member of the National Academy (1860); especially successful in pictures of American domestic and negro life. Many of his works have been reproduced. His "Card Players" and "The Savoyard" were done at The Hague; his "Old Kentucky Home" first gave him reputation; his

"Old Stage Coach" and the "Wandering Fiddler," which sold for $2,375, are among his many notable works.

JOHNSON, SAMUEL FROST (1835-). An American painter; born in New York City; studied there and in Düsseldorf, Antwerp, Paris, and with Edouard Frère. Among his important works are "The Bouquet," "Caught at It," "Study of an Interior," "Roasted Chestnuts," "Good Night," and "A Thirsty Party."

JOMMELLI, NICCOLO (1714-1774). An Italian composer; born at Aversa, near Naples; the most conspicuous among the many eminent composers of the eighteenth century. Among his available music is a *Miserere, Victimae paschali, Lux eterna, Hosanno filio, Mulieres bonae, In Monte Oliveto, Requiem,* and some scattered works in collections.

JONCIERES, VICTORIN DE, or **FELIX RUDGER ROSSIGNOL** (1839-1903). A French composer; born in Paris; studied with Elwart, Leborne, and at the Conservatoire; wrote the music for the *Hamlet* of Dumas and Paul Meurice; the grand operas *Sardanapale, Le dernier jour de Pompéi,* and *Dimitri*; a *Symphonie Romantique*; *Sérénade Hongroise*; *La Mer*; and other instrumental music.

JONES, INIGO (1573-1652). An English architect; born in London; studied in Italy, and, returning to England, obtained the patronage of James I., and became chief architect in the country. The banqueting hall at Whitehall is reckoned his masterpiece. The portico of the Church of St. Paul, London, destroyed in the fire of 1666, was from his design. His style follows Palladio of Venice. He was the principal representative of Renaissance architecture in England.

JORDAENS (*yor'dahnz*), **JAKOB** (1593-1678). A Flemish painter and engraver; born at Antwerp; was a friend of Rubens, and ranks next to him among the Flemings. Reinach calls him a "brilliant but vulgar painter, sometimes caricatures Rubens and at other times appears as his compeer in boisterous good humor." Among his works are "Christ Chasing the Money Lenders from the Temple," "The Four Evangelists," "The Entombment of Christ," "The Last Supper," "Diogenes Seeking an Honest Man," and a "Holy Family" which is in New York.

JOSEFFY, RAFAEL (1852-). An Hungarian-American pianist, teacher, and composer; born at Miskolcz; studied under Brauer, Wenzel, Moscheles, and Carl Tausig. After a successful career in Europe he came to America in 1879; played with the Philharmonic Orchestra and with Theodore Thomas and his orchestra; revealed Brahm's pianoforte beauties; composed the important *School of Advanced Piano Playing.*

JOUVENET, JEAN (1644-1717). A French painter; born at Rouen; assisted Le Brun on the decorations of Versailles and succeeded him as the head of the French school; one of the best French academic painters. His "Descent from the Cross" in the Louvre is his great work.

JUCH, EMMA (1863-). An American dramatic soprano singer; born of American parents in Vienna, Austria; studied under Madame Murio-Celli; made her début in London (1881); prima donna with Theodore Thomas (1884); sang Marguerite in *Faust,* Elsa in *Lohengrin,* Senta in *The Flying Dutchman,* Crysa in *Nero,* and Eurydice in *Orfeo et Eurydice;* prima donna of American Opera Company.

KALTENBORN, FRANZ P. (1865-). An American musician; born at Hamburg; brought to America in 1870; first violin at the Metropolitan Opera House in New York and, later, in the Philharmonic and in Seidl's orchestras; organized the Kaltenborn Quartet (1896) and his orchestra of 50 musicians in 1900.

KAUFFMANN, MARIA ANGELICA (1741-1807). A Swiss painter; born at Coire; studied in Italy; passed some years in England; married Zucchi, the Italian painter (1781), and spent the rest of her life in Rome; one of the first members of the Royal Academy.

KAULBACH, WILHELM VON (1805-1874). A German painter; born at Arolsen; studied with Cornelius; painted "The Battle of the Huns," "The Destruction of Jerusalem," and several frescoes into which he introduced the free use of profane subjects.

KEAN, EDMUND (1787-1833). A distinguished English tragedian; born in London. His first success was Shylock in the *Merchant of Venice* in 1814, and the representation of it was followed by equally famous representations of Richard III., Othello, and Sir Giles Overreach. He led a very dissipated life, and under the effect of it his constitution gave way. He broke down one evening beside his son as Iago, as he was playing the part of Othello, was carried off the stage, and never appeared on the boards again.

KELLOGG, CLARA LOUISE (1842-). An American soprano; born at Sumterville, S. C.; educated in New York; sang in the United States (1868-1872), in London, and in Italian opera in the United States; organized her own company (1874), for which she made her own translations, libretti, and was stage and chorus manager; married Carl Strakosch in 1887.

KELLY, JAMES EDWARDS (1855-). An American sculptor; born in New York City; studied at the National Academy; at first a wood engraver, then an illustrator, and since 1881 a sculptor. From his well executed historical subjects he has been called "the sculptor of American history." His bronze "Sheridan's Ride"; "General Buford;" the 6th New York Cavalry Monument on the field of Gettysburg; and "The Call to Arms," a 17-foot figure of Columbia on the Soldiers' Monument at Troy, N. Y., are among his best works.

KEMBLE, CHARLES (1775-1854). An English actor; born at Brecon; appeared first at Sheffield as Orlando in 1792, and two years later went to London, where he continued playing till 1840, when he was appointed examiner of plays. Macready called him "a first-rate actor in second-rate parts"; made a sensation in the United States on his visit with his daughter Fanny (1832-1834).

KEMBLE, FRANCES ANNE or **FANNY** (1809-1893). Daughter of Charles Kemble; born in London; made her début in 1829, and proved a queen of tragedy; in 1832 came to America, where, in 1834, she married a planter, from whom she was divorced in 1849. Resuming her maiden name, Fanny Kemble, she gave Shakespearean readings for 20 years.

KEMBLE, JOHN PHILIP (1757-1823). An English actor; born at Prescott, Lancashire; son of Roger Kemble and brother of Mrs. Siddons; appeared first at Wolverhampton in 1776. After touring in Yorkshire and Ireland he went to London in 1783, playing Hamlet at Drury Lane; became manager of that theater in 1788; in 1802 transferred himself to Covent Garden. He retired in 1817. He was a great tragedian and a man of character.

KEMEYS, EDWARD (1843-1907). An American sculptor; born at Savannah, Georgia; removed early to New York; served in the Civil War; did his first work in sculpture as a member of the civil engineering corps of Central Park; made a specialty of Indians and wild animals. His "Bison and Wolves," "The Still Hunt" in Central Park, "Wolves" in Fairmount Park at Philadelphia, "Panther and Deer," "Raven and Coyote," and "Panther and Cubs" are among his chief works.

KENDAL, MR., or **WILLIAM HUNTER GRIMSTON** (1843-). An English actor; born in London. With his wife (Margaret or "Madge" Robertson Grimston), whom he married in 1869, he led a successful English career. They came to America in 1889 and presented *A Scrap of Paper* and in 1893 *The Second Mrs. Tanqueray.*

KEYSER, EPHRAIM (1850-). An American sculptor; born in Baltimore, Md.; studied in Munich under Widman and in Berlin. Among his works are a "Memorial to Chester A. Arthur" in Albany, a statue of De Kalb at Annapolis, a "Stein Memorial," "Psyche," and "The Toying Page."

LABLACHE, LUIGI (1794-1858). An Italian operatic basso; born at Naples. He had a voice of extraordinary volume and quality, compassing two octaves from E below the bass staff to E above. He created the part of Dr. Bartolo in *Il barbiere.* Bellini wrote *I Puritani* for him; Mercadante, *Elisa e Claudio*; and Donizetti, *Don Pasquale.*

LA FARGE, JOHN (1835-). An American painter; born in New York City; studied in Paris with Couture, at the Louvre, and in this country with William M. Hunt. Among his works are "St. John," some excellent drawings on wood, a notable series of flower pictures, decorations of Trinity Church at Boston, frescoes in St. Thomas's at New York, and lunettes in the State Capitol of Minneapolis; revolutionized stained glass work.

LANDSEER, SIR EDWIN HENRY (1802-1873). An English painter; born in London. He began to draw animals when a mere child; exhibited regularly at the Academy; took the very highest rank among animal painters, and, though he was criticised for introducing too human a sentiment and expression into some of his animals, the humor and pathos of animal nature has had no finer exponent. Among his works are the famous bronze lions on Trafalgar Square, "The Shepherd's Chief Mourner," "The Return from Deer Stalking," "Dignity and Impudence," "Piper and Pair of Nutcrackers," and "Oxen at the Tank."

MADAME LE BRUN AND DAUGHTER. PAINTED BY HERSELF.

LANGTRY, MRS. LILLIE (1852-). An English actress; born in Jersey; made her début (1881) in London as Blanche Haye in *Ours*. Kate Hardcastle in *She Stoops to Conquer*, Rosalind in *As You Like It*, Pauline in the *Lady of Lyons*, and the leading rôle in *The Crossways* are among her more important parts; married Hugo Gerald de Bathe in 1899.

LE BRUN, CHARLES (1619-1690). A celebrated French painter; born in Paris; studied in Rome; settled in Paris. He exercised for about 40 years a great influence on the art of the period. He decorated Versailles, and has many works in the Louvre. His reputation was greater in his own day than now.

LE BRUN, MARIE LOUISE ELISABETH VIGEE (1755-1842). A French painter; born in Paris; married a grandnephew of Charles Le Brun (1776); painted portraits of many celebrities.

LEECH, JOHN (1817-1864). An English artist and humorist; born in London. His political cartoons in *Punch*, his illustrations of Gilbert A'Becket's *Comic Histories*, of Hood's *Comic Annual*, and of Dickens's works are the basis of his great reputation.

LEHMANN, LILLI (1848-). A German soprano singer; born at Würzburg. Her mother was a celebrated harp player and prima donna; made her début in Berlin (1870); appointed an imperial chamber singer (1876); sang in the Nibelungen trilogy at Baireuth; took Wagnerian parts in London; leading soprano in Wagnerian opera at the Metropolitan Opera House in New York.

LEIGHTON (*lay'ton*), **SIR FREDERICK, BARON LEIGHTON OF STRETTON** (1830-1896). An English artist; born in Scarborough. Among his works are "Cimabue's Madonna Carried in Procession Through Florence," "Daphnephoria," "Phryne," "The Garden of the Hesperides," and "Captive Andromache."

LELY, SIR PETER, or PIETER VAN DER FAES (1618-1680). An Anglo-Dutch painter; born in Soest, Westphalia; went to England after the death of Van Dyck (1641); painted portraits of Charles I.; knighted by Charles II. Much of his work is in Hampton Court and the National Portrait Gallery.

LENBACH, FRANZ (1836-1904). A German portrait painter; born in Munich; studied there under Piloty. Among his portraits are those of Bismarck, Gladstone, Wagner, and Heyse, in which the character and personality of the subject is magnificently brought out. Other important works are "Shepherd Boy" and "Peasants Taking Refuge from the Weather."

LACHRYMAE. BY SIR FREDERICK LEIGHTON.

LEO, LEONARDO (about 1694-1746). An Italian composer; born near Brindisi; studied at Naples and Rome; choirmaster and director of the school of San Onofrio in Naples (1717); wrote the oratorios *Santa Elena* and *La morte d'Abele*; the operas *Sofonisbe*, *Olimpiade*, *La clemenza di Tito*, and *Achille in Sciro*; and church music, including masses, the well-known *Miserere*, introits for Lent, and sacred solos.

LEONARDO DA VINCI (1452-1519). An Italian painter, sculptor, and architect; born at Vinci, between Pisa and Florence; studied with Andrea del Verrocchio and Ludovico Sforza. He holds a supreme place as an artist; but few of his paintings have endured. His "Last Supper," painted on the wall of the refectory of the Convent of Santa Maria delle Grazie at Milan has been frequently "restored" because of the injury from the dampness of the wall; yet it remains one of the world's masterpieces. His "Mona Lisa," a half-length portrait of a woman with a mysterious smile, is

his most celebrated easel picture. It, with "The Virgin of the Rocks" and "The Virgin and Child with Saint Anne," is in the Louvre. Da Vinci and Michelangelo are the giants of the Florentine Renaissance.

LEONCAVALLO, RUGGIERO (1858-). An Italian composer; born at Naples; studied there with Cesi, Ruta, and Rossi. After a life of hardship and discouragement he wrote his two-act opera *Pagliacci*, which was first produced at Milan in 1892. This opera has been vastly more successful than his *Medici*, *Savonarola*, *Zaza*, or *Der Roland*.

LEUTZE, EMANUEL (1816-1868). An American artist; born in Gmünd, Württemberg; was brought to the United States in infancy. Among his works are scenes from the life of Columbus, from English history, and "Washington Crossing the Delaware."

LIND, JENNY, or **MADAME GOLDSCHMIDT** (1820-1887). A distinguished vocalist; born at Stockholm; made her first appearance in 1838 as Agatha in *Der Freischütz*; studied in Paris under Garcia; made a tour of America (1849-1852) and with the proceeds she endowed musical schools and charities in Sweden. She retired from the stage on her marriage to Otto Goldschmidt (1852) and resided in London. Her last appearance was at Düsseldorf in 1870.

LAST SUPPER. BY DA VINCI.
The Refectory of Santa Maria delle Grazie, Milan.

LIPPI, FILIPPINO (about 1458-1504). An Italian artist; born at Florence; son of Fra Filippo Lippi and pupil of Botticelli; noted for his frescoes in churches in Florence and Rome and for "The Virgin and Saints," "The Adoration of the Magi" in the Uffizi at Florence, "The Virgin Appearing to St. Bernard" in the Church of the Badia at Florence, and "The Vision of St. Francis."

LIPPI, FRA FILIPPO, or **LIPPO LIPPI** (1412-1469). An Italian painter; born in Florence. His greatest works are on the walls of the choir of Prato Cathedral and the "Coronation of the Virgin" in the Academy at Florence.

LISZT (*list*), **FRANZ** (1811-1886). An eminent Hungarian pianist and musician; born at Raiding, near Oedenburg; studied at Vienna and Paris; brought out Wagner's *Lohengrin* and Berlioz's *Benvenuto Cellini* at Weimar, which became the musical center of Germany; took minor orders in the Catholic Church (1865) and was consequently known as Abbé. He was unapproachable as a pianist, both by reason of his supreme command of technique and the poetic quality of his playing. His compositions for the pianoforte are enormous in number. His 12 symphonic poems, one or two masses, and the "Legend of St. Elizabeth" form the body of his religious and other works.

LOW, WILL HICOCK (1853-). An American artist and illustrator; born at Albany, N. Y.; studied in Paris with Gérôme and Carolus Duran; joined the Barbizon school; painted "Day of the Dead"; returned to New York (1877); taught the life class at Cooper Union (1882-1885); at the National Academy (1889-1892); elected N. A. (1890); did much mural decoration; painted the portrait of Mme. Albani, "Lady of the Empire," "Telling the Bees," "Aurora," and "Spring."

LUCAS, JOHN SEYMOUR (1849-). An English painter; born in London; elected R. A. (1898). Among his important works are "The Armada in Sight," "After Culloden," "Flirtation," and an excellent fresco in the Royal Exchange at London.

LUINI or **LOVINO, BERNARDINO** (about 1477-1533). An Italian painter; supposed to have been born in the village of Luino, near Lake Maggiore, but it is only known for certain that his works were mostly executed between 1520 and 1530. He is one of the five painters of whose supremacy Ruskin was most certain. He was the most popular of the disciples of Leonardo da Vinci at Milan. Among his works are "The Marriage of the Virgin" and "The Nativity," two frescoes in the Church of Saronno.

McCHESNEY, CLARA T. (1861-). An American painter; born at Brownsville, Cal.; studied in Paris under Courtois and Girardot and at New York under Mowbray and Beckwith. She excelled in the drawing of children and in water-color work; received many medals and much public recognition.

MacDOWELL, EDWARD ALEXANDER (1861-1908). An American composer and pianist; born in New York City; studied in Paris and Germany from 1876 until 1887. He returned to America, established himself in Boston, and engaged in teaching and concert work; appointed to the chair of music in Columbia University, New York City, in 1896; resigned in 1904. His musical career was terminated by ill health in 1905. Among his works are a number of beautiful compositions for the pianoforte, songs, choruses, and orchestral works. He ranks among the best of contemporary composers.

MACKAYE, JAMES STEELE (1842-1894). An American dramatist; born at Buffalo, N. Y.; studied in Paris under Delsarte and became his American exponent; wrote *Hazel Kirke*, produced as a "stop-gap" at Madison Square Theatre (1880), which ran for 386 performances.

McKIM, CHARLES FOLLEN (1847-1909). An American architect; born in Chester County, Pa.; studied at Harvard and at L'Ecole des Beaux-Arts in Paris; settled in New York (1872) and formed a partnership with William R. Mead (1877) and with Stanford White (1879). The work of this firm produced a renaissance in American architecture. Buildings with which they are associated are Boston Public Library, Columbia Library, Century Club in New York, J. Pierpont Morgan's Library, War College at Washington, the new Pennsylvania depot in New York, Bellevue Hospital, and the Madison Square Presbyterian Church.

MACMONNIES, FREDERICK (1863-). An American sculptor; born in Brooklyn, N. Y.; studied with St. Gaudens and with Falguière in Paris. Among his important works are "Diana," "Nathan Hale" in the City Hall Park in New York, the huge fountain at the Columbian Exposition in Chicago, "Bacchante" and "Sir Henry Vane" in the Boston Public Library, "Victory" at West Point, "Shakespeare" and the bronze doors in the Congressional Library, and groups on the Memorial Arch in Prospect Park in Brooklyn.

MacNEIL, HERMON ATKINS (1866-). An American sculptor; born at Chelsea, Mass.; studied in Paris under Falguière and Chapu; for three years instructor at the Chicago Art Institute; assisted Martiny in his work for the Columbian Exposition; studied in Rome for four years. His notable works include "The Moqui Runner," "A Primitive Chant," "The Sun Vow," "The Fountain of Liberty" at the St. Louis Exposition, "Coming of the White Man" in Portland, Ore., and the "McKinley Memorial" at Canton, Ohio.

MACREADY, WILLIAM CHARLES (1793-1873). An English tragedian; born in London. In 1826 he made his first visit to America, and in 1828 played in Paris, with great success in both countries. He did much to reform the stage and cultivate the public taste for Shakespearean drama; revisited the United States in 1849; returned to England; gave a series of farewell performances and finally retired from the stage in 1851. The Astor Place Riot (May 10, 1849) was caused by the rivalry and ill feeling between Macready and Forrest.

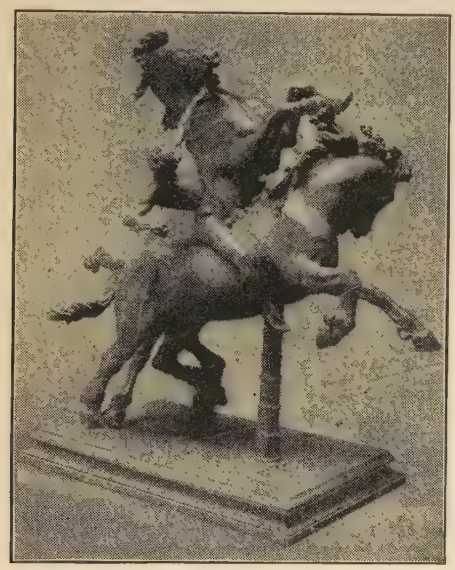
MacWHIRTER, JOHN (1839-). A Scottish painter; born at Slateford, near Edinburgh; elected R. A. in 1894. Among his notable works are "Nature's Archway," "June in the Austrian Tyrol," "The Lord of the Glen," "The Track of the Hurricane," "The Silver Strand," and "Loch Katrine."

MAKART, HANS (1840-1884). An Austrian painter; born at Salzburg; studied with Piloty at Munich (1861-1865); settled in Vienna (1869); professor of the Art Academy (1879); chief works are "Amorettes," "The Seven Deadly Sins," "The Homage of Venice to Catherine Cornaro," "Cleopatra on

the Nile,'' ''Entrance of Charles V. into Antwerp,'' ''Death of Cleopatra,'' ''The Spring,'' and ''Diana's Hunting Party,'' which is in the Metropolitan Museum at New York.

MALIBRAN, MARIA FELICITA (1808-1836). A French mezzo-soprano and actress; born at Paris; daughter of Manuel Garcia; made her début in London in 1825, and soon her reputation extended over Europe. She married M. Malibran, a French merchant, who soon became bankrupt. She then returned to the stage, and was received with great enthusiasm in France, England, Germany, and Italy. Her first marriage having been dissolved, she married M. de Bériot, a famous violinist, in 1836. She was one of the greatest of operatic singers.

MALONE, JOHN (1854-1906). An American actor; born at Westfield, Mass.; appeared in San Francisco (1880); played with Edwin Booth (1886-1887), Mrs. Langtry (1888), Salvini (1889-1890), Modjeska (1897), and with Mansfield. After 1900 he wrote theatrical newspaper criticisms in New York.



Bronze Horses. By Macmonnies.
Prospect Park, Brooklyn, N. Y.

MANET, EDOUARD (1832-1883). A French painter; born at Paris; studied under Couture. He was a realist, and his treatment of ''open air light'' paved the way for the impressionists or ''pleinairists.'' Among his works are ''Olympia'' in the Luxembourg and ''The Boy with the Sword'' in the Metropolitan in New York.

MANSARD. The name of two French architects; born in Paris—**FRANCOIS** (1598-1666), who constructed Hotel Toulouse, now the Bank of France, and **JULES HARDOUIN** (1645-1708), his grandnephew, architect of the dome of the Invalides and of the palace and chapel of Versailles.

MANSFIELD, RICHARD (1857-1907). An American actor; born in the island of Heligoland, Germany; in business in Boston, Mass., for some years; went to England and played small parts in comic opera; came to the Standard Theatre in New York (1882); made a great success as Baron Chevrial in the *Parisian Romance* (1883); played in American cities in a number of rôles, from Ko-Ko in *The Mikado* to Richard III. and Shylock (1883-1890). He played Dr. Jekyll and Mr. Hyde, Prince Karl, Richard III., Beau Brummel, Dimmesdale in his own *Scarlet Letter*, Shylock, Bluntschli in *Arms and the Man*, Dick Dudgeon in *The Devil's Disciple*, Cyrano de Bergerac, and numerous other parts.

MANTEGNA (*man-tane'yah*), **ANDREA** (1431-1506). An Italian painter; born in Vicenza, Italy; pupil and adopted son of Squarcione. Mantegna excelled in perspective, which was then a rare merit. He introduced the art of engraving on copper into Upper Italy; painted nine tempera pictures representing the ''Triumph of Caesar,'' now in Hampton Court. Among his frescoes are ''The Martyrdom of St. James'' in the Eremitani at Padua and ''Barbara of Brandenburg, Marchesa di Gonzaga, and her Court'' in the Palace at Mantua. It is probable that the highest qualities of the great Venetian art of the fifteenth century were derived from Mantegna.

MARA, GERTRUDE ELISABETH (1749-1833). A celebrated German singer; born at Cassel; died at Revel; in childhood a student of the violin. She appeared successfully in public, but gave up the violin to cultivate her voice under the instruction of Paradies. Later she entered the music school of Hiller in Leipzig, where she remained until 1771; employed shortly afterward by Frederick II. as court singer. She appeared in London in 1784.

MARCELLO, BENEDETTO (1686-1739). An eminent Venetian composer. He was also a student of law, and in his early life held several important government posts. His great work, *Estro poetico-armonico, Parafrasi sopra i primi 50 psalmi, Poesia di Girolamo Giustiniani*, appeared in two parts (1724-1727). They are composed for one, two, three, and four voices, and for expression, it is said, far surpass any other work of the kind. Among his other compositions are instrumental concertos; an opera, *La Fede riconosciuta*; and an oratorio, *Giuditta*. Marcello was also a poet of much distinction.

MAROCHET'TI, CARLO, BARON (1805-1868). An Italian sculptor; born in Turin; after working in Paris went to England in 1848 and executed several public statues, one of Queen Victoria among others.

MASCAGNI (*mas-kan'yee*), **PIETRO** (1863-). An Italian composer; born in Leghorn, Tuscany. He produced a one-act opera, *Cavalleria Rusticana*, in competition for a prize; also *L'amico Fritz, I Rantzau, Nerone, William Ratcliff*, and *Zanetto*; director of the Conservatorium at Pesaro in 1896.

The Sun Vow. By MacNeil.

MASSYS or **MATSYS, QUENTIN** (1466-1530). A Flemish painter; born at Louvain; settled in Antwerp in 1491. His greatest works are ''The Burial of Christ'' and ''The Martyrdom of the Two Johns'' at Antwerp, ''The Enthroned Virgin'' in Berlin, and ''Virgin in Glory'' in St. Petersburg.

MATTESON, TOMPKINS HARRISON (1813-1884). An American painter; born at Peterborough, N. Y.; best known by his ''Spirit of '76,'' often reproduced; elected N. A. in 1874.

MATTHEWS, JOHN (? -1905). An Anglo-American actor; trained in England; joined A. M. Palmer's stock company at the Union Square Theatre in New York; played in Laura Keene's company in Ford's Theatre in Washington on the night Lincoln was assassinated. On account of his friendship for Booth he was arrested, but his innocence of any knowledge of Booth's plans was soon made clear.

MAX, CORNELIUS GABRIEL (1840-). A German historical painter; born at Prague; son of Joseph Max, sculptor, and pupil of Piloty at Munich; professor at the Academy at Munich (1879-1883); chief works are "The Anatomist," "The Last Token," "Nydia," and "The Lion's Bride."

EIN GRÜSS—A TOKEN. BY GABRIEL MAX.

MAY, PHIL (1864-1903). An English caricaturist; born at Leeds; one of the most powerful masters of "line" drawings; contributed to the *Graphic*. A few years before his death he was permanently placed on the staff of *Punch*. He illustrated *Phil May's Annuals*.

MAYNARD, GEORGE WILLOUGHBY (1843-). An American painter; born in Washington, D. C.; studied under Edwin White in Italy, at the Antwerp Academy, and in Paris; painted portraits of Kate Field and of Frank D. Millet; settled in New York (1885). One of the earliest of American mural decorators, his work on the Agricultural Building at Chicago (1893), on the Congressional Library, the Waldorf-Astoria, and other buildings is of a high order. His "In Strange Seas" is in the Metropolitan Museum in New York.

MAYO, FRANK (1839-1896). An American actor; born in Boston, Mass.; first appeared in San Francisco; played frequently with Edwin Booth; appeared in Boston (1865) as Othello, Hamlet, Macbeth, and D'Artagnan. He is remembered for his Davy Crockett and Pudd'n-Head Wilson.

MEAD, LARKIN GOLDSMITH (1835-). An American sculptor; born in Chesterfield, N. H.; studied under Henry K. Brown. His colossal "Vermont" for the dome of the State Capitol at Montpelier; his "Ethan Allen"; the National Lincoln Monument at Springfield, Ill.; the Soldiers' Monument at St. Johnsbury, Vt.; the pediment, "Return of Proserpine," over the Agricultural Building at Chicago in 1893; the colossal "Mississippi River"; the marble group of the Stanford family at Stanford University in California (injured by the earthquake) are among his best works.

MEAD, WILLIAM RUTHERFORD (1846-). An American architect; born at Brattleboro, Vt.; a brother of Larkin G. Mead; studied with Russell Sturgis in New York and in Europe; joined Charles F. McKim in 1877; was graduated from Amherst College (1867); honorary LL.D. in 1902.

MEHUL, ETIENNE NICOLAS (1763-1817). A French musical composer; born in Ardennes; settled in Paris in 1778; composed 24 operas, including *Euphrosine et Coradin*, *L'irato*, *Joseph*, and *La journée aux aventures*; several symphonies; and numerous songs, including "Chant du départ," "Chant de victoire," and "Chant du retour," popular with French Revolutionary soldiers.

MEISSONIER (*may-so-ne-a'*), **JEAN LOUIS ERNEST** (1815-1891). A French painter; born in Lyons. All his works were painted with Flemish care and finish, but were thoroughly original in their treatment. His pictures, though of small size, sold for large sums, especially his "Napoleon I." and "Friedland, or 1807"; illustrated *Paul and Virginia* and the *Chaumière Indienne*.

MELBA, MADAME, or **HELEN PORTER ARMSTRONG** (1865-). An Australian soprano operatic singer; born near Melbourne; performed publicly at six; appeared in London (1886); took Brussels and Paris by storm (1887 and 1889); sang in *Lucia di Lammermoor* at Covent Garden in London (1888); most successful in *Romeo and Juliet*; first appeared in New York in 1893 in *Lucia di Lammermoor*, where she has appeared every season since; sang at the World's Fair in Chicago (1893); one of the most celebrated *prime donne* of our time. Her stage name "Melba" is taken from the city of Melbourne.

MELCHERS, GARI (1860-). An American painter; born at Detroit, Mich.; studied at Düsseldorf and at Paris under Lefebvre and Boulanger; spent some time in Holland; noted for his Dutch scenes and figures; one of the decorators of the Columbian Exposition and of the Congressional Library. His best portraits are those of President Harper of the University of Chicago and Donald G. Mitchell or "Ik Marvel."

MEMLING or **MEMLINE, HANS** (about 1430-1495). A Flemish painter; born at Mainz on the Rhine; settled in Bruges. He was the Raphael of Flemish art. Reinach asks, "Is there a more fascinating achievement in all the domain of painting than the 'Shrine of St. Ursula' at Bruges? If we except those of Van Eyck, what portraits are superior to Memling's?"

MEN'DELSSOHN-BARTHOL'DY, FELIX (1809-1847). A celebrated German composer; born in Hamburg. His compositions consist of symphonies, operas, oratorios, and church music. His oratorios of *St. Paul* and *Elijah* are enduring monuments of his genius.

MENZEL, ADOLF (1815-1905). A German painter; born at Breslau; best known for his historical pictures and drawings illustrating the times of Frederick the Great and William I.

MERCADANTE, SAVERIO (1797-1870). An Italian composer; born at Altamura, in Apulia; studied in Naples; musical director of the Cathedral of Novara and of the Conservatorium at Naples (1840-1870); blind after 1862; composed *I briganti*, *Il giuramento*, *L'apoteosi d'Ercole*, and *Elisa e Claudio* (written for Lablache).

DIX-HUIT-CENT-QUATORZE (1814). BY MEISSONIER.

MERCIE, ANTONIN (1845-). A French sculptor; born at Toulouse; won the Prix de Rome (1868). Among his best works are the famous statue of Napoleon on the Vendôme Column; his "Gloria Victis," bought by the French government; "William Tell" at Lausanne; monument of Thiers in Père la Chaise; and "Jules Ferry" at St. Dié.

MESDAG, HENDRIK WILLEM (1831-1905). A Dutch painter; born at Groningen; studied at Brussels;

settled at The Hague (1869); a distinguished interpreter of marine views.

METSU or **METZU, GABRIEL** (1615-1667). A Dutch painter; born at Leyden; pupil of Gerard Dow; lived in Amsterdam; a master of domestic scenes and a better draughtsman than Dow.

MEULEN, ANTON FRANS VAN DER (1634-1690). A Flemish painter; born at Brussels; classed with the French school; painted the battle scenes and sieges for Louis XIV., to whom Colbert appointed him court painter. His works are in Versailles and at the Louvre.

MEUNIER, CONSTANTIN (1831-1905). A Belgian sculptor; born at Brussels; studied painting under Degroux. At 50, under the influence of Rodin, he began sculpture, taking as his subjects the mining poor of Belgium. His "Ecce Homo," "An Old Colliery Horse," "The Shingler," and "Fire Damp" are among his best.

MEYERBEER, GIACOMO (JAKOB MEYER-BEER) (1791-1864). A German musical composer. Among his works are *Robert le diable*, the *Huguenots*, and *L'Africaine*, all successful operas.

MICHAEL ANGELO (MICHELANGELO BUONAROTI) (1475-1564). An Italian painter, sculptor, architect, and poet; "the Dante of the arts;" patronized by Lorenzo the Magnificent; went to Rome, where he designed the decorations for the Church of St. Peter; became architect of that magnificent structure in 1547, and devoted the rest of his life almost exclusively to its completion. Among his works are "Battle of the Centaurs," "Madonna," "Cupid," "Pietà," "David," "The Holy Family of the Tribune," the "Manchester Madonna," the sublime statue of "Moses," and his last picture, "The Last Judgment."

Gloria Victis. By Mercie. Hotel de Ville, Paris.

MILLAIS, SIR JOHN EVERETT (1829-1896). An English painter; born in Southampton. In portraiture he held the foremost rank, and painted a number of the most distinguished men of his day. Many of the works of Millais are well known by engravings. He was markedly influenced by Dante Gabriel Rossetti and Holman Hunt in the pre-Raphaelite Brotherhood movement as well as by Ruskin.

MILLER, CHARLES HENRY (1842-). An American landscape painter; born in New York City; studied medicine; studied art in Munich, Dresden, and Berlin for several years; settled in New York (1870); member of the National Academy (1875). His best works include "Sunset—East Hampton," "Old Oaks at Creedmoor," "An Autumnal Day," and "A Grey Day on Long Island"; wrote *The P'ilosophy of Art in America* as "Carl de Muldor."

MILLET (*mil-lay'*), **AIME** (1819-1891). A French sculptor; born in Paris. His "Ariadne" (1857) was bought for the Luxembourg. His masterpiece is the colossal "Vercingétorix" at Alise-Ste.-Reine in Côte d'Or. "Apollo" at the Grand Opera and "Mercury" at the Louvre are well known.

MILLET (*mil'let*), **FRANCIS DAVIS** (1846-). An American artist and author; born at Mattapoisett, Mass.; studied at Harvard; studied art at Antwerp; war correspondent in the Russo-Turkish War (1877-1878) for the New York *Herald*, London *Daily News*, and *Graphic*, and for London and New York papers at Manila (1898); director of decorations at the World's Fair (1893); studied mural work under La Farge; helped to decorate Trinity Church, Boston; best work is "Between Two Fires" in the National Gallery, London.

The Princes in the Tower. By Millais.

MILLET (*mil-lay'*), **JEAN FRANCOIS** (1814-1875). A French painter. In 1849 he settled among the peasants of Barbizon, on the edge of Fontainebleau forest, and devoted himself to transferring their simple everyday life to his canvases, which he did with great truth of sentiment and subdued poetic charm. Of his paintings "The Angelus" was sold by auction in Paris, in 1889, for about $115,000. His "Sower," "Peasants Grafting," "The Gleaners," "Waiting," "The Sheep Shearers," "The Man with the Hoe," "Women Carding," and "The Shepherdess and Flock" are his chief productions.

MILMORE, MARTIN (1845-1883). An American sculptor; born at Sligo, Ireland; studied sculpture with Thomas Ball in 1860; made several statues for Boston Horticultural Hall: modeled the Soldiers' Monument for Roxbury, Mass. (1867); the Soldiers' and Sailors' Monument for Boston Common (1877); busts of Pope Pius IX., Wendell Phillips, Emerson, Sumner (in the Metropolitan Museum at New York), Grant, Lincoln, and Webster; and, with his brother, the granite sphinx in Mount Auburn Cemetery, Cambridge, Mass.

MILLS, CLARK (1815-1883). An American sculptor; born in Onondaga County, N. Y. Charleston, S. C., bought his bust of Calhoun for the City Hall (1846); cast the statue of General Jackson for Lafayette Square at Washington (1852). The colossal equestrian statue of Washington was bought by the government for $50,000 (1860); cast Crawford's colossal statue of Liberty for the dome of the Capitol (1863).

MINOR, ROBERT CRANNELL (1840-1904). An American landscape painter; born in New York City; studied in New York, in Barbazon under Diaz, and at Antwerp; settled in New York in 1872; painted much

of the Hudson valley, including his effective ''Twilight'' in the Metropolitan Museum at New York; elected N. A. in 1897.

MITCHELL, MARGARET JULIA, or ''MAGGIE MITCHELL'' (1832-). An American actress; born in New York City; began acting at five; appeared as Julia in *The Soldier's Daughter* (1851). Her best rôles were Jane Eyre, Mignon, and Fanchon in *Fanchon the Cricket*, which last she played more than 2,000 times.

MODJESKA, HELENA (1844-1909). A Polish actress; born in Cracow. She began to act in a traveling company in 1861. Four years later she made a great name at Cracow. She settled with her second husband near Los Angeles, Cal., to try farming, but the enterprise not succeeding she returned to the stage and won a complete triumph at San Francisco in 1877 as Adrienne Lecouvreur in English. Among her most successful rôles were Juliet, Rosalind, Beatrice, and the leading part in the *Dame aux camélias*. She returned to farming in California in 1895.

The Gleaners. By J. F. Millet.

MOELLER, LOUIS CHARLES (1856-). An American painter; born in New York City; studied decorative painting with his father, at the National Academy, and with Duveneck and Dietz at Munich; settled down to genre painting in New York and was elected N. A. in 1895.

MOLLENHAUER, EDWARD (1827-). An American violinist; born in Erfurt, Prussia; studied with Ernst in London and with Spohr in Cassel; first violin in Jullien's band in London (1850); settled and taught in New York (1853); composed much chamber music and the operas *The Corsican Bride*, *Breakers*, and *The Masked Ball*.

MONET, CLAUDE (1840-). A French painter; born at Paris; noted for his ''Seine Pictures,'' his impressionism, and ''open-air'' landscape work; fought the mannerisms and academical conventionality and did much to secure greater freedom to the artist in treatment of his subjects; much influenced by the work of Corot, Millet, Manet, Degas, and Turner.

MOORE, ALBERT JOSEPH (1841-1893). An English painter; born in York; brother of Henry Moore. Has been called ''the poet of drapery.''

MOORE, HARRY HUMPHREY (1844-). An American painter; born in New York City; studied with Gérôme in Paris and with Fortuny. Among his gorgeously colored pictures of oriental life are ''The Gypsy Encampment,'' ''Grenada,'' ''Moorish Water Carriers,'' and ''A Moorish Bazaar.''

MOORE, HENRY (1831-1896). An English marine painter; born at York; noted for his ''wild blue wastes'' of sea and sky; elected R. A. in 1893; won the Grand Prix at Paris with his ''Clearness after Rain'' in 1889. The Tate Gallery has his ''Catspaw off Land.''

MORAN, EDWARD (1829-1901). An American painter; born at Bolton, England; came to America in 1844 and settled finally in Philadelphia; studied under James Hamilton and Paul Weber, then in London; noted for his marine work; elected A. N. A. (1873). Among his works are ''Launching of the Life-Boat,'' ''Relief Ship Entering Havre,'' ''On the Narrows,'' ''Nations Paying Tribute to Liberty,'' and 13 marine historical paintings, concluding with ''Return of Admiral Dewey.''

MORAN, PETER (1842-). An American etcher and painter; born at Bolton, England; brother of Edward Moran; studied with his brothers and in London; one of the founders of the New York Etching Club (1877); president of the Society of Etchers in Philadelphia. His works include ''The Return of the Herd,'' ''Going to the Hunt,'' ''The Challenge,'' ''Wolves on the Buffalo Trail,'' and ''The Stable Door.''

MORAN, THOMAS (1837-). An American painter; born at Bolton, England; brother of Edward and Peter Moran; studied with James Hamilton; visited England to study Turner's works; studied in France and Italy; noted for his marvelous colorings of a series of paintings of the Yellowstone and Colorado, including ''Grand Cañon of the Yellowstone'' and ''The Chasm of the Colorado,'' bought by Congress and now in the Capitol; also ''The Mountain of the Holy Cross,'' ''Ponce de Leon,'' ''San Juan Abajo,'' and ''A Storm on the Coast of Easthampton.''

MOREAU, GUSTAVE (1826-1898). A French painter; born in Paris; a French exponent of pre-Raphaelism. His ''Oedipe et le sphinx,'' ''Orpheus,'' and ''L'apparition'' are among his best works.

MORETTO, IL, or ALESSANDRO BONVICINO (about 1498-about 1555). An Italian painter; born at Brescia; studied with Titian in Venice. His ''Assumption'' in the Church of San Clemente in Brescia is regarded as his masterpiece.

MORLAND, GEORGE (1763-1804). An English painter; born in London. Among his noted works are ''The Gypsies,'' ''The Tea Garden,'' ''Inside of a Stable,'' ''Old Sportsman,'' and ''Dogs Fighting,'' owned by the New York Historical Society; ''Midday Meal'' and ''Weary Wayfarers'' in the Metropolitan Museum of New York.

MORRIS, CLARA (1849-). An American actress; born in Toronto, Canada; settled in Cleveland, Ohio; trained by John Ellslers; played in Cincinnati (1869); with Augustin Daly (1870); played Annie Sylvester in *Man and Wife*, her first success (1871); has done much literary work during her forced retirement from the stage through illness; married Frederick C. Harriot in 1874. Wrote reminiscences.

MORRIS, WILLIAM (1861-). An American actor; born in Boston, Mass.; played (1875) with the Boston Museum stock company; acted with Augustin Daly, Madame Modjeska, and as Lieutenant Hawksworth in *The Girl I Left Behind Me*; in *The Lost Paradise* and *Under the Red Robe*; in partnership with Edward E. Rice (1901) in *When We were Twenty-one*, by H. V. Esmond.

MOSCHELES, IGNAZ (1794-1870). An Hungarian pianist and composer; born at Prague, of Jewish parents; taught at the London Academy of Music (1825); at the Leipzig Conservatory (1844-1870).

MOUNT, WILLIAM SYDNEY (1807-1868). An American genre painter; born in Long Island, N. Y.; successful in delineation of farm life and of negro character. Among his works are ''Dance of the Haymakers'' and ''Music Hath Charms.''

MOZART (*mo-zart'*; *Ger.*, *mo'tzart*), **JOHANN CHRYSOSTOMUS WOLFGANG AMADEUS** (1756-1791). A German composer; composed short pieces at the age of six, and at seven gave concerts in Paris and London; distinguished for the universality of his genius. He gave artistic form to opera. His *Marriage of Figaro*, *Don Giovanni*, *The Magic Flute*, and *The Requiem Mass* are among the most successful of his 624 compositions. His C major or *Jupiter*, G minor, and E flat symphonies are the best of his 41 symphonies.

MOZIER, JOSEPH (1812-1870). An American sculptor; born in Burlington, Vt.; settled in New York as a merchant until 1845; went to Rome. Among his works are ''The Prodigal Son'' in the Pennsylvania Academy, ''The Wept of Wish-ton-Wish,'' ''Tacite and Truth,'' ''The Peri,'' ''Pocahontas,'' ''Rebecca at the Well,'' and ''Il Penseroso.''

MULLER, WILLIAM JOHN (1812-1845). An English landscape painter; born at Bristol; noted for his fine color in his Oriental studies.

MULREADY, WILLIAM (1786-1863). An Irish painter; born in Ennis, County Clare. Among his works are ''Old Kaspar,'' ''The Rattle,'' ''The Carpenter's Shop and Kitchen,'' ''Idle Boys,'' ''Fight Interrupted,'' ''The Sonnet,'' ''Choosing the Wedding Gown,'' and ''The Seven Ages''; elected R. A. in 1816,

MUNKAC'SY or LIEB, MICHAEL (1846-1900). A Hungarian painter; born in Munkacs. In 1872 he settled in Paris. He visited New York in 1886. Except a few portraits, "Milton Dictating Paradise Lost," "Christ before Pilate," and "Mozart's Last Moments," his works are nearly all genre pictures.

THE DIVINE SHEPHERD. BY MURILLO.
Prado Museum, Madrid.

MURIL'LO, BARTOLOME ESTEBAN (1617-1682). A celebrated Spanish painter; born at Seville. His subjects were drawn partly from low life and partly from religious or scripture themes, such as the "Immaculate Conception" and the "Assumption of the Virgin," as well as "Moses Smiting the Rock" and the "Miracle of the Loaves and Fishes"; died from a fall from a scaffold while painting an altarpiece at Cadiz.

MURPHY, JOHN FRANCIS (1853-). An American painter; born in Oswego, N. Y.; elected N. A. in 1887; won the second Hallgarten Academy prize with his "Tints of a Vanished Past" in 1885, and the Webb prize for the best landscape at the Society of American Artists in 1887. His "Autumn" in the Metropolitan Museum is considered his best. His "Uplands—Morning" is noted for its color.

MYRON (born about 480 B. C.). A Greek sculptor; born at Eleutherae, in Boeotia; famous for his bronzes, especially the "Cow" and the "Discobolus" or disc thrower.

NAEGELE, CHARLES FREDERICK (1857-). An American portrait painter; born in Knoxville, Tenn.; studied in New York under C. Myles Collier, William Sartain, and William Merritt Chase; won the Columbian medal design prize (1892), the George Inness diploma prize, the Proctor diploma prize, and the seat of the Salmagundi Club prize. His most noted portraits are of Charles L. Tiffany, Roswell P. Flower, John W. Gates, Waldo Hutchins, and Mrs. Frederick S. Flower.

NASH, JOHN (1752-1835). An English architect; born in London; was the architect of Buckingham Palace and the Pavilion at Brighton.

NAST, THOMAS (1840-1902). An American artist; born in Landau, Bavaria. He is best known for his political cartoons, which were of great influence in the various political campaigns, and were effective in the exposure of the "Tweed ring." In 1902 he was appointed United States consul at Guayaquil, where he died of yellow fever.

NAUJOK, G. (·). A contemporary German artist; born in Königsberg. His world-wide fame rests upon his "St. Cecilia," which was painted in 1891 and excited popular interest when it was first exhibited at Dresden.

NEAGLE, JOHN (1799-1865). An American painter; born in Boston, Mass.; married the daughter of Thomas Sully, painter. His "Patrick Lyon at the Forge" in the Pennsylvania Academy is his best known. Among his portraits are those of Henry Clay, Dr. Thomas Parke, George Washington, and Gilbert Stuart.

NEAL, DAVID DAHLHOFF (1837-). An American painter; born at Lowell, Mass.; studied in Munich under Ainmüller (his father-in-law) and with Piloty and Wagner. Among his works are "The First Meeting of Mary Stuart and Rizzio," "Cromwell Visits Milton" (in the Public Library at Cleveland), "Nuns at Prayer," and portraits of Adolph Sutro, Rev. Mark Hopkins (at Williams College), and Whitelaw Reid.

NEILSON, LILIAN ADELAIDE (1848-1880). An English actress; born at Leeds; a brilliant and beautiful tragedienne; played five times in the United States (1872-1880).

NETHERSOLE, OLGA (1870-). An English actress; born in London; first appeared at Brighton (1887); lessee and manager of the Court Theatre in London (1894) and of Her Majesty's (1898); chief rôles are Sapho, Janet Preece in *The Profligate*, and the heroine in *La Tosca*; first appeared in America in 1894. Her most popular rôle was Paula in *The Second Mrs. Tanqueray* (1899).

NETTLETON, WALTER (1861-). An American painter; born in New Haven, Conn.; was graduated at Yale; studied in Paris under Lefebvre, Duran, Boulanger, and Harrison; settled in Stockbridge, Mass.; noted for his Breton landscapes and for his New England snow scenes.

NEUVILLE', ALPHONSE DE (1836-1885). A French painter of battle scenes; born at St. Omer. He was an illustrator of books, among others Guizot's *Histoire de France*. His "Rorke's Drift," "Bivouac before Le Bourget, 1872," and "Tel-el-Kebir" are well-known paintings.

THE VEIL OF ST. VERONICA. BY MURILLO.

NEVADA (WIXON), EMMA (1861-). An American soprano singer; born in Austin, Nevada; pupil of Marchesi in Vienna; made her début in London in *La sonnambula*; sang in *Lucia*, *Mignon*, *Martha*, and *Rigoletto*; made a tour of the United States in 1885; married Raymond Palmer, an English surgeon; lived in England since.

NEVIN, ETHELBERT (1862-1901). An American composer; born in Vineacre, near Pittsburg, Pa.; studied in Dresden under Von Böhme; returned and taught in Pittsburg; studied in Berlin under Klindworth

and with Bülow; taught in the music department of Yale University (1900). His *Water Scenes*, including the universally popular *Narcissus*; the suite *En Passant*; the *Tuscan* suite; and his songs "Lehn' deine Wang' an meine Wang'," "Rosemary," "I' the Wondrous Month of May," "'T was April," "Boris," and "In Winter I Get up at Night."

NEWELL, PETER, or **"SHEAF HERSEY"** (1862-). An American illustrator; born near Bushnell, Ill.; studied at the Art Students' League in New York; noted for his humorous drawings collected in *Topsys and Turvys*, *A Shadow Show*, and *Peter Newell's Pictures and Rhymes*. He illustrated Stockton's *The Great Stone of Sardis*, Twain's *Innocents Abroad*, and Bangs's *House-Boat on the Styx*.

NICOL, ERSKINE (1825-1904). A Scottish painter of Irish life and character; born in Leith; lived in Dublin (1845-1849); settled in London (1862). Among his popular works are "Among the Old Masters," "Both Puzzled," "Paying the Rent" in the Vanderbilt collection in New York, "The Trio," "Paddy's Mark" in the Corcoran Gallery, and "Interviewing their Member."

NICOLINI, ERNESTO, or **ERNEST NICOLAS** (1834-1898). A French tenor singer; born at St. Malo; settled in Italy (1859) and studied grand opera; sang *Faust* in London (1872); joined Patti's company as principal tenor, and sang with her in Europe and America for several years. After Patti's divorce from the marquis de Caux, Nicolini married her (1886).

St. Cecilia. By Naujok.

NICOLL, JAMES CRAIG (1847-). An American marine painter; born in New York City; studied with M. F. H. de Haas and Kruseman van Elten; one of the jury at the St. Louis Exposition (1904); elected N. A. in 1885; noted for his surf pictures. Among his best are "Squally Weather," "On the Newport Rocks," "Sunlight on the Sea," and "A Summer Surf."

NIEHAUS, CHARLES HENRY (1855-). An American sculptor; born in Cincinnati, Ohio; studied at the McMicken School of Design there and at Munich, where he won a first prize with his "Fleeting Time." Among his works are a statue of Washington on Race Street, Cincinnati, and another in the rotunda of the National Capitol; lived in Rome for a few years, where he did "The Scraper, or Greek Athlete Using a Strigil," "Caestus," and "Silenus"; lived in New York after 1885, where he executed a statue of William Allen for the National Capitol. Among others are those of Thomas Hooker, John Davenport, Moses, Gibbon, Lincoln, Farragut, McKinley, Hahnemann, and the Astor Memorial Doors of Trinity Church in New York.

NIKISCH, ARTHUR (1855-). An Hungarian conductor; born at Lebény Szent Miklós; studied at Vienna under Dessoff and Hellmesberger; conductor at Leipzig (1878); director of the Boston Symphony Orchestra (1889-1893); director at Budapest; conductor of the Philharmonic concerts in Berlin (1895) and of the Gewandhaus concerts in Leipzig, where he succeeded Reinecke; professor of the Leipzig Conservatory (1901); director of the Leipzig Opera (1905). He has composed a symphony and much chamber music.

NIKITA, LOUISE, or **LOUISA MARGARET NICHOLSON** (1872-). An American soprano singer; born in Philadelphia; studied with M. Le Roy in Washington; connected with an opera troupe for a time; studied in Paris under Maurice Strakcsch; made her début in grand opera as Zerlina in *Don Giovanni* in Paris (1889); prima donna soprano at the Paris Opéra (1894).

NILSSON, CHRISTINE (1843-). A Swedish soprano singer; born at Wexiö; studied at Stockholm and Paris; made her début in Paris (1864) as Violetta in *La Traviata*, and became one of the foremost soprano singers; frequently visited the United States. Ophélie, Violetta, Elsa, Margaret, Mignon, Donna Elvira, and the Countess were her most famous rôles.

NOLLEKENS, JOSEPH (1737-1823). An English sculptor; born in London; lived for many years at Rome, where he executed his "Timocles before Alexander" and "Mercury and Venus Chiding Cupid," and the busts of Garrick and Sterne; elected R. A. in 1772. Among his other works are Mrs. Howard's monument, statue of Venus, and the monuments of Captains Manners, Bayne, and Blair in Westminster Abbey.

NORDICA, MADAME LILLIAN (1850-). An American soprano; born in Farmington, Me.; studied at the Boston Conservatory and in Italy; sang at the Crystal Palace, London, and at the Trocadero in Paris (1873); studied under Sangiovanni at Milan and appeared in *La traviata* at Brescia (1880). Her chief parts have been in *Faust*, *Robert le diable*, *Rigoletto*, *Lucia*, *L'Africaine*, *Aïda*, *Les Huguenots*, *Don Giovanni*, and the Wagner rôles; sang at Baireuth (1894). At the Metropolitan Opera House in New York in recent years she has appeared as Isolde, Elsa, Brünnhilde, Elisabeth, and Kundry.

NOVELLO, VINCENT (1781-1861). An English composer and musical editor; born in London; for many years an organist; edited the works of Haydn, Mozart, and others; founded the musical publishing house which is now Novello, Ewer & Co.

O'BRIEN, LUCIUS RICHARD (1832-). A Canadian painter; born in Ontario; president of the Royal Canadian Academy of Arts (1880-1890). Among his works are many illustrations in *Picturesque Canada*, "Sunrise on the Saguenay" at Ottawa, and "A Portage on the Peribonea" in the Canadian Club of New York.

OCHTMAN, LEONARD (1854-). An American landscape painter; born in Zeeland, Holland; came to America in 1866; studied at the Art Students' League; won the landscape prize at the Brooklyn Art Club (1892), a medal at the World's Fair (1893), silver medals at the Pan-American (1901) and Charleston (1902), the Shaw prize at the Society of American Artists (1902), the Inness gold medal (1903), the Webb prize (1904), two gold medals at St. Louis (1904), and second prize at the Corcoran Gallery (1905); elected N. A. in 1904.

OFFENBACH, JACQUES (1819-1880). A musical composer, born at Cologne of Jewish parents. Conducted the Théâtre Français orchestra at Paris (1848-1855), and the Théâtre Comique in 1855. Wrote *Orphée aux enfers*, *La belle Hélène*, *Madam Favart*, and *Les contes d'Hoffman*, which was produced in New York in 1908 by Hammerstein.

OLMSTED, FREDERICK LAW (1822-1903). American landscape architect of Hartford, Conn. Prepared the general plan of Central Park, New York, in collaboration with Calvert Vaux. Also consulting designer of the Capitol grounds at Washington and of other parks.

O'NEIL, JAMES (1849-). An American actor; born in Kilkenny, Ireland; brought to Buffalo (1850); studied acting in Cincinnati; appeared there and in St. Louis; noted for his presentations of Othello and other Shakespearean rôles. Later he excelled as Edmond Dantes in *Monte Cristo*, Virginius, Hamlet, and D'Artagnan in *The Three Musketeers*.

OPIE, JOHN (1761-1807). An English painter; born at St. Agnes, near Truro. His most noted works

are "Murder of James I. of Scotland," "Slaughter of Rizzio," "Jephtha's Vow," "Presentation in the Temple," "Arthur and Hubert," "Belisarius," and "Juliet in the Garden."

OPPER, FREDERICK BURR (1857-). An American illustrator; born in Madison, Lake County, Ohio; obtained a position as humorous illustrator with Frank Leslie in New York; on *Puck* for nearly 20 years; joined the New York *American* (1902). His works include "Our Antediluvian Ancestors," "Happy Hooligan," and "John Bull."

ORCAGNA, or **ARCAGNOLO**, or **ANDREA DI CIONE** (about 1316-about 1376). An Italian painter and sculptor who succeeded Giotto as the leading painter at Florence. His frescoes in the chapel of Santa Maria Novella at Florence; "St. Zenobius Enthroned;" "Crowning of the Virgin;" the architecture of the chapel of the Or San Michele at Florence; and a beautiful marble tabernacle in it are his chief works.

ORCHARDSON, WILLIAM QUILLER (1835-). A British painter; born in Edinburgh. Among his works are "The Challenge," "The Duke's Antechamber," "The Protector," "The Bill of Sale," "Queen of the Swords," "Hard Hit," "On Board H. M. S. Bellerophon," "Mariage de Convenance," "After," "Salon of Madame Récamier," "The First Cloud," "Her Mother's Voice," "The Young Duke," and "Reflections." He is a most refined painter of genre and history.

OSTADE, ADRIAEN VAN (1610-1685). A Dutch painter and engraver. His masterpiece is the "Schoolmaster" in the Louvre. He was a worthy pupil of Franz Hals.

OULESS, WALTER WILLIAM (1848-). An English portrait painter; born at St. Helier, Jersey. His best known portraits are those of Darwin, Gladstone, Bright, Lord Roberts, Newman, and Manning.

OVERBECK, JOHANN FRIEDRICH (1789-1869). A German painter; born at Lübeck; studied at Vienna; settled in Rome. Among his works are a "Madonna," five fresco compositions from Tasso's *Jerusalem Delivered*, "The Vision of St. Francis," "Christ's Entry into Jerusalem," "Christ's Agony in the Garden," "Lo Sposalizio," "The Triumph of Religion in the Arts," and the "Incredulity of St. Thomas."

PACHMANN, VLADIMAR DE (1848-). A Russian pianist; born at Odessa; first appeared in 1869; visited the United States in 1900 and several times since. His work is noted for his control of the *pianissimo* and for his excellent interpretations of Chopin.

PADEREW'SKI, IGNACE JAN (1859-). A celebrated Polish pianist; born at Podolia, in Russian Poland; made his début in 1887 with instant success. His first appearance created quite a furore in Paris and London; has several times visited the United States; professor at the Conservatoire at Warsaw (1878) and at the Strassburg Conservatoire (1884). He has composed for the piano, for the voice, and for the piano and orchestra.

PAGANI'NI, NICOLO (1784-1840). A phenomenal Italian violinist; born at Genoa; gave his first concert in 1793; began his professional tours in 1805. His success was unbounded in Austria, Germany, London, and Paris.

PAGE, WILLIAM (1811-1885). An American artist; born at Albany, N. Y.; studied art under James Herring and S. F. B. Morse; became a portrait painter at Albany and, later, in New York; elected N. A. in 1836 and president of that society (1871-1873); resided in Boston (1844-1847) and in Florence and Rome (1849-1860); painted portraits of the Brownings; settled in New York (1860) and made portraits of Beecher, Wendell Phillips, Lowell, Charlotte Cushman, Grant, Sumner, and the painting of Farragut in Mobile Bay, which was presented to the czar of Russia. His other works include "Venus," "Moses and Aaron on Mount Horeb," "The Holy Family," and "The Infancy of Henry IV."

PAINE, JOHN KNOWLES (1839-1906). An American composer; born in Portland, Me.; was educated by Hermann Kotzschmar in Boston and by Haupt in Berlin; instructor in music at Harvard University (1872); professor of music there (1876). Theodore Thomas played his first symphony (1876). His symphony *Spring* has been played many times. His *Oedipus Tyrannus*; overtures for *The Tempest* and *As You Like It*; the music for Whittier's *Centennial Hymn* (1876); the *Columbus March* for the World's Fair (1903); the *Hymn of the West* for St. Louis Exposition (1904); an opera, *Azara*; a mass; an oratorio, *St. Peter*; several cantatas; some chamber music; and piano and voice compositions are his chief works.

PALESTRI'NA, GIOVANNI PIERLUIGI DA (1524-1594). A celebrated Italian composer of sacred music; surnamed "the Prince of Music"; born at Palestrina; produced a number of masses which at once raised him to the foremost rank among composers; was the author of the well known *Dies Sanctificatus*.

PALLA'DIO, ANDREA (1518-1580). An Italian architect; born at Vicenza, of poor parents; was precursor of the modern Italian style of architecture. His works, which are masterpieces of the Renaissance, consist principally of palaces and churches.

PALMA, JACOPO, or **PALMA VECCHIO** (about 1480-1528). An Italian painter; born in Venice; the foremost of the second class of great Venetian artists. His "Adoration of the Shepherds" in the Louvre is one of the most charming idyls of Venetian art.

PALMER, ALBERT MARSHAM (1838-1905). An American theatrical manager; born at North Stonington, Conn.; studied law and practised for less than one year; librarian of the New York Mercantile Library (1869-1872); manager of the Union Square Theatre (1872-1882), and presented there *Agnes*, *The Two Orphans*, *Rose Michel*, *The Danicheffs*, *Miss Multon*, *A Parisian Romance*, *The Banker's Daughter*, and *My Partner*; manager of the Madison Square Theatre (1884-1888), presenting such plays as *Jim the Penman*, *A Pair of Spectacles*, and *Saints and Sinners*; bought Wallack's Theatre, which he renamed Palmer's Theatre. It was not successful; originated (1882) and was president for 14 years of the Actors' Fund of America.

PALMER, ERASTUS DOW (1817-1904). An American sculptor; born at Pompey, N. Y.; began to cut cameos in Albany, N. Y. (1846); exhibited his marble bust, "Infant Ceres" (1851), followed by "Faith," "Mercy," portrait busts of Alexander Hamilton and Washington Irving, and statues of the "Sleeping Peri," "The White Captive," and "The Angel of the Sepulchre" in the Rural Cemetery at Albany.

PALMER, WALTER LAUNT (1854-). An American landscape painter; born in Albany, N. Y.; son of Erastus Dow Palmer; studied under F. E. Church and in Paris under Carolus Duran; won the second Hallgarten prize (1887), a medal at the World's Fair (1893), honorable mention at Paris (1900), silver medal at the Pan-American (1901) and at St. Louis (1904); elected N. A. (1897); noted for his snow scenes. His "Across the Fields" and "Lake George" are typical pictures.

PARE'PA-ROSA, MADAME, or **EUPHROSYNE PAREPA DE BOYESKU** (1836-1874). A British operatic singer; born in Edinburgh; first appeared in England in 1857 and in the United States in 1865. Her voice was a soprano of great power and compass and she was greatly admired in oratorio singing.

PARKER, HORATIO WILLIAM (1863-). An American composer; born in Auburndale, Mass.; studied with Emery and Chadwick and with Rheinberger at Munich; professor of music at St. Paul's School, Long Island (1888); Battell professor of music at Yale University (1894). His oratorio, *Hora Novissima*, has been sung on many important choral occasions in America and at Chester and Worcester in England—the first American composition heard there. His *Wanderer's Psalm* was sung at the Hereford festival in England in 1900. His other works comprise cantatas, songs, hymns, and organ and piano music.

PARMIGIANO, FRANCESCO MAZZUOLI (1504-1540). An Italian painter; born at Parma; studied in Rome; lived for a time in Bologna, then returned to Parma. Among his works are "Baptism of Christ," "St. Margaret," "Cupid Fashioning his Bow," and "Vision of St. Jerome."

PARRATT, SIR WALTER (1841-). An English organist and composer; born at Huddersfield; professor of the organ at the Royal College of Music in London (1883); organist to St. George's Chapel at Windsor (1882); conductor of the Windsor Madrigal Society; one of the foremost organists and one of the greatest exponents of Bach.

PARRHASIUS (*par-ray'she-us*) (flourished 400 B. C.). A gifted painter of ancient Greece; born at

Ephesus; went to Athens and became the rival of Zeuxis. He was the contemporary of Socrates.

PARRISH, MAXFIELD (1870). An American painter and illustrator; born in Philadelphia; studied at the Pennsylvania Academy of Arts and with Howard Pyle. He is first in designing magazine covers; received honorable mention at the Paris Exposition (1900) and a silver medal at the Pan-American (1901).

PARSONS, ALBERT ROSS (1847-). An American musician and archaeologist; born at Sandusky, Ohio; studied at the Leipzig Conservatory and with Kullak, Moscheles, and Tausig. His songs "Night has a Thousand Eyes" and "Three Fishers" have been very popular. His contributions to musical literature include a translation of Wagner's *Beethoven, The Science of Pianoforte Practice, The Secret of Wagner's Genius,* and an essay on *Parsifal.*

PARSONS, ALFRED WILLIAM (1847-). An English painter; born at Beckington, Somersetshire. His chief work is of English landscapes in water color. The nation purchased through the Chantrey Bequest his "When Nature Painted All Things Gay." He illustrated Wordsworth's *Sonnets, The Warwickshire Avon,* and *The Danube from the Black Forest to the Black Sea* (with F. D. Millet).

PARTRIDGE, JOHN (1790-1872). An English portrait painter. His works are numerous and rank in the second class of portrait productions; painter in extraordinary to the queen.

Madonna and Child. By Partridge.

PARTRIDGE, WILLIAM ORDWAY (1861-). An American sculptor; born in Paris, France; studied in Florence under Galli; came to the United States (1885) and was an actor and public reader; studied in Paris under Welonski. Among his works are a "Shakespeare" in Lincoln Park at Chicago, an "Alexander Hamilton" for the Hamilton Club in Brooklyn, a "General Grant" for the Union League Club of Brooklyn, and a series of portrait busts of the poets, including Shelley, Tennyson, and Whittier (in the Boston Public Library).

PAS'TA, JUDITH (1798-1865). A famous Italian operatic singer; born near Milan, of Jewish birth. Her celebrity lasted from 1821 to 1832, after which she retired into private life. She had a voice of great compass.

PAT'TI, ADELINA MARIA CLORINDA (1843-). A popular operatic singer of Italian extraction; born in Madrid, Spain; made her début in New York as Lucia in 1859, and she was ever afterward looked upon as one of the first singers of the day. Her voice was an unusually high, rich, ringing soprano.

PAUER, ERNST (1826-1905). An Austrian-English pianist; born in Vienna; studied there under Sechter; went to London in 1851; professor of the Royal Academy of Music (1859); in the National Training School (1867) and in the Royal College of Music (1883-1896). His lectures on music made him widely known. His compositions comprise three operas, a symphony, several songs, and some chamber music.

PAUR, EMIL (1855-). An Austro-American conductor; born at Czernowitz; studied in Vienna and under Hellmesberger and Dessoff; first violin at the Vienna Opera House; conductor at Cassel (1876-1880), at Mannheim (1880-1888), and at Leipzig (1888-1893); director of the Boston Symphony Orchestra (1893-1898); conductor of the Philharmonic Society of New York (1898-1900); conductor of the German works at the Metropolitan Opera House (1900-1902); director of the orchestra at Pittsburg since 1904.

PAYNE, JOHN HOWARD (1791-1852). An American actor and dramatist; born in New York City; made his début at the Park Theatre in New York (1809) as Young Norval in Home's *Douglas*; visited England in 1813, where he remained until 1832; wrote his *Brutus; or the Fall of Tarquin,* in which Edmund Kean took the principal part (1818). His opera, *Clari; or the Maid of Milan,* in which "Home, Sweet Home" occurs, was produced at Covent Garden (1823), sung by Miss M. Tree. Charles Kemble appeared in his *Charles II. Procrastination* and *The Spanish Husband* are also his plays; lived in Washington after 1832; appointed United States consul to Tunis by President Tyler and died there. He is best known as the author of "Home, Sweet Home."

PEALE, CHARLES WILSON (1741-1827). American writer and artist; born in Maryland. He attained distinction as a portrait painter and naturalist.

PEALE, REMBRANDT (1778-1860). An American artist; born in Bucks County, Pa.; when 17 years old executed a portrait of Washington, from whom he had three sittings. A later portrait was purchased by Congress.

PEEL, PAUL (1860-1892). A Canadian figure painter; born in London, Ontario; studied at the Pennsylvania Academy and in Paris under Gérôme and Constant. His gold medal picture "After the Bath" was bought by Hungary for the gallery at Budapest. His "Two Friends" is in Buckingham Palace in London.

PENFIELD, EDWARD (1866-). An American artist; born in New York City; studied at the Art Students' League; an impressionist on poster work; art editor for the Harper publications (1891-1901); designed many advertising posters; devised many methods for printing and illustrating magazine articles in color; originator of the poster in America.

PENNELL, JOSEPH (1860-). An American illustrator, etcher, and author; born in Philadelphia; studied there; illustrator on the *Century* magazine for many years since 1881; visited Italy in 1883 to make illustrations for Mr. Howell's *Tuscan Cities*; married Elizabeth Robbins (1884), who has collaborated with him in a number of books, such as *A Canterbury Pilgrimage, Our Sentimental Journey through France and Italy, Two Pilgrims' Progress, Our Journey to the Hebrides,* and a *Life of James McNeil Whistler* at his own request. Since 1884 Mr. Pennell has resided chiefly in London.

PERRAULT, LEON BAZELE (1837-). A French genre painter; born at Poitiers; pupil of Picot and Bouguereau; won medals at Paris (1864) and Philadelphia (1876); chief works include "The Bather," "Repose," "Christ in the Tomb," and "Maternal Tenderness."

PERUGINO (*pay-roo-je'no*), **PIETRO,** or **PIETRO VANNUCCI** (1446-1524). An Italian painter; born in Città della Pieve. He was employed for 10 years in the Sistine Chapel and the Stanze of the Vatican, and on his return to Perugia opened a school and had Raphael among his pupils. His best works are the "Pietà" in the Pitti Palace and "Christ Giving the Keys to Peter" in the Sistine Chapel (the rest of his frescoes there being destroyed to make way for Michelangelo's "Last Judgment"). His fresco in the Stanze of the Vatican, "Stanza del Incendio," was the only one spared by Raphael when he repainted the walls.

PERUZZI, BALDASSARE (1481-1536). An Italian architect and painter; born at Accajano, near Siena; designed the Villa Farnesina; succeeded Raphael as the

architect of St. Peter's; city architect of Siena and designed the fortifications and executed "The Sibyl Announcing the Nativity to Augustus"; returned to Rome in 1532 and designed the palaces of the Orsini, Massimi, and Vidoni.

MADONNA. BY LEON PERRAULT.

PHIDIAS (490-432 B. C.). The greatest of Greek sculptors and architect of the Parthenon. He was never excelled in expressing the ideal majesty of the human form, and his "Zeus" at Olympia is counted among the wonders of the world.

PHILLIPS, ADELAIDE (1833-1882). An American contralto; born at Stratford-on-Avon, England; brought to Boston, Mass., at seven; appeared at the Boston Museum (1843) as Little Pickle. Through the efforts of Jenny Lind she was sent to Italy to study singing; made her début at Brescia in *Semiramide*; returned in 1854; appeared as Azucena in *Il trovatore* (1856) and for 20 years was the leading contralto operatic singer in America.

PICKNELL, WILLIAM LAMB (1852-1897). An American painter; born at Hinesburg, Vt.; studied at Rome, Paris, and in Brittany under Inness, Gérôme, and Wylie; came back in 1882. His works include "Route de Concarneau," "Coast of Ipswich," "Bleak December," "Among the Olives," and "Route de Nice."

PINERO, ARTHUR WING (1855-). An English dramatist; born in London; studied law; acted in London theaters; noted for a series of comedies, including *The Magistrate, The Schoolmistress, Dandy Dick, The Cabinet Minister, The Amazons, Sweet Lavender, The Profligate, Lady Bountiful, The Second Mrs. Tanqueray,* and *The Notorious Mrs. Ebbsmith.*

PINSUTI, CIRO (1829-1888). An Italian composer; born near Siena; taught singing in England (1848); at the Royal Academy of Music at London (1858-1885); wrote the operas *Il mercante di Venezia* and *Mattia Corvino,* a *Te Deum,* nearly 300 songs, and numerous pianoforte compositions.

PISANO, ANDREA (1270-about 1349). An Italian sculptor; apprentice to Giovanni; worked on the Campo Santo; made the bronze door of the baptistery of Florence; and completed Giotto's bas-reliefs for the Campanile.

PISANO, GIOVANNI (1240-1320). An Italian sculptor and architect; son of Niccola Pisano; built the beautiful Campo Santo Cemetery at Pisa and the tomb of Pope Benedict XI. at Perugia.

PISANO, NICCOLA (1206-1278). An Italian sculptor and architect; born at Pisa; designed the basilica of St. Anthony at Padua; built the Santa Trinità at Florence and the San Domenico at Arezzo.

PLANQUETTE, ROBERT (1850-1903). A French composer; born in Paris; wrote the popular operas *Cloches de Corneville* or *Bells of Corneville, Le chevalier Gaston, Rip Van Winkle, The Old Guard, Paul Jones, Le Talisman,* and *Mam'zelle Quat'sous.*

PLATT, CHARLES ADAMS (1861-). An American painter, etcher, and architect; born in New York City; studied there and with Boulanger and Lefebvre in Paris. His works include the landscapes "Early Spring," "Clouds," and "Snow," and the etchings "The Market Slip at Low Tide in St. John, N. B.," "On the Connecticut River," and many Dutch scenes.

PLOCKHORST, BERNHARD (1825-). A German painter; born in Brunswick; studied in Munich with Piloty; professor at the Weimar Art School (1866-1869). His works are confined to religious and historical subjects.

POLLAIUOLO, ANTONIO (1429-1498). An Italian painter and sculptor; born at Florence. In metal work he did "The Feast of Herod" and "The Dance of Herodias's Daughter"; in painting, "Battle of the Nudes," "Hercules Strangling Antaeus," and St. Christopher and the Infant Christ" (in the Metropolitan Museum at New York); one of the first to study anatomy in connection with drawing.

THE CONSOLING CHRIST. BY PLOCKHORST.

POLYCLITUS (about 480-about 410 B. C.). A Greek sculptor; born at Sicyon and lived in Argos; studied along with Myron and Phidias. Among his chief works is the "Doryphorus" or spear bearer, known as the "Canon" or chief type of a perfect male figure. A copy of it found in Pompeii is now in Naples. His "Diadumenos," an athlete binding a fillet around his head, is revealed to us by a copy now in the British Museum. His gold and ivory statue of Hera was made for the Heraeum at Argos. He designed the theater at Epidaurus.

POORE, HENRY RANKIN (1859-). An American painter; born in Newark, N. J.; studied in New York, Philadelphia, and at Paris under Lumenais and Bouguereau; instructor in the Pennsylvania Academy. Among his works are "Close of a City Day," "Fox Hounds," "Hounds in Winter," and "Clearing Land."

PORTER, BENJAMIN CURTIS (1843-). An American portrait painter; born at Melrose, Mass.; noted for his portraits of the leading society women of Boston and New York; elected N. A. in 1880.

POTTER, PAUL (1625-1654). A Dutch animal painter; born at Enkhuizen. The life-size "Young Bull" at The Hague, his "Dairy Farm," and "The Bear Hunt" are among the best known of his works.

POUSSIN, NICOLAS (1594-1665). A French painter; born at Les Andelys, in Normandy. He was the greatest artist of the seventeenth century. His renderings of Scriptural subjects are among the finest illustrations that have been made of the Bible. In them he falls little short of Raphael.

POWERS, HIRAM (1805-1873). An American sculptor; born in Woodstock, Vt. In 1835 he went to Washington. Two years later he was enabled to go to Italy to study his art, and he resided in Florence till his death. There he produced his statue of "Eve," which excited the admiration of Thorwaldsen, and in 1843 the still more popular "Greek Slave," of which six copies in marble, with cast copies innumerable, were produced. Among the other works, the chief were "Proserpine," "Il Penseroso," "A Californian," "An American," and a bust of Washington for the state of Louisiana, of Calhoun for South Carolina, and of Daniel Webster for Boston, as well as of John Q. Adams, Andrew Jackson, Marshall, Van Buren, and other distinguished Americans.

POYNTER, SIR EDWARD JOHN (1836-). An English painter; born in Paris; studied in Rome under Leighton, in England under Dobson, and in Paris under Gleyre; elected R. A. in 1876. Among his works are "Atalanta's Race" and "Visit to Aesculapius." His *Lectures on Art* are taken from those delivered at University College at London; president of the Royal Academy (1896).

PRADIER, JAMES (1790-1832). A Swiss sculptor; born at Geneva; won the Prix de Rome with his "Philoctetes" in 1813; studied for five years in Rome; one of the greatest sculptors of his day. Among his other works are "Bacchante and Centaur," "The Children of Niobe," "Psyche," "An Odalisque," "Spring," and "Pandora."

PRADILLA, FRANCISCO (1847-). A Spanish painter; born at Villanueva de Gallego. Among his best works are "The Rape of the Sabines," "Mad Johanna Following the Coffin of Philip the Fair," and "The Surrender of Granada to Ferdinand and Isabella" —a magnificent canvas.

PRATT, SILAS GAMALIEL (1846-). An American composer; born in Addison, Vt.; studied in Berlin with Kullak and Bendel, and, later, with Liszt and Dorn; organized the Apollo Club in Chicago (1872) and conducted a season of opera there; made a tour of Europe (1884), playing his own music. Among his works are the operas *Zenobia*, *The Triumph of Columbus*, and *Lucille*, and symphonies, cantatas, songs, etc.; established a school in New York City in 1895.

Detail from the Muses. By Puvis de Chavannes. Boston Public Library.

PRAXIT'ELES (360-280 B. C.). A celebrated Greek sculptor; executed several fine statues, in bronze and marble, of Bacchus, a satyr, Venus, and Apollo. Of his work the "Hermes of Olympia" is the only original example extant. He excelled by the grace, tenderness, and finish of his works. He was esteemed as second to Phidias only.

PRUD'HON, PIERRE (1758-1823). A French painter; one of the most fascinating of the great French masters and the most original of the painters of the Empire period of France. His "Zephyr and Psyche" in the Louvre and his "Justice and Divine Vengeance Pursuing Crime" are fine examples of his work.

The Old Violin. By Howard Pyle. Illustration from Holmes' Autocrat.

PURCELL, HENRY (1658-1695). An eminent English musician; born at Westminster; excelled in several forms of musical compositions; was the author of anthems, cantatas, glees, etc., which attained great popularity. He is regarded as the greatest of English composers.

PUVIS DE CHAVANNES, PIERRE (1824-1898). A French painter; born at Lyons; studied under Henri Scheffer. Among his works are "Peace," "War," "Labor," "Repose," "Ave Picardia Nutrix," "Ludas pro Patria," five panels from the "Life of St. Geneviève" at the Pantheon in Paris, and nine fine panels in the Boston, Mass., Library, including "The Muses Saluting the Spirit of Enlightenment" and the "Arts" and "Sciences."

PYLE, HOWARD (1853-). An American illustrator and author; born in Wilmington, Del.; an illustrator for periodicals, and became popular also as a writer, chiefly of juvenile literature. His works include *Buccaneers and Marooners of America*, etc.

QUERCIA, JACOPO DELLA (about 1374-1438). An Italian sculptor; born at Quercia, near Siena; first to use a wooden framework covered with plaster in making large statues; best work is seen in a door of San Petronia at Bologna, decorations in Santa Maria del Fiore, and the marble fountain in the market place at Siena.

QUIDOR, JOHN (1800-1881). An American figure painter; born in Gloucester County, N. J.; studied with Jarvis and Inman; settled in New York in 1851. Four of his paintings used in illustration of Irving's *Knickerbocker History of New York* are at the Brooklyn Museum.

RACHEL, ELISA (1821-1858). A great French tragédienne; born in Switzerland, of Jewish parents; made her début in Paris in 1837, and soon became famous as the interpreter of the principal characters in the masterpieces of Racine and Corneille, her crowning triumph being the representation, in 1843, of Phèdre in the tragedy of Racine.

RAEBURN, SIR HENRY (1756-1823). A British portrait painter; born at Stockbridge, near Edinburgh;

was introduced to Reynolds in London, and after two years' absence in Italy settled in Edinburgh and became famous as one of the greatest painters of the day. He painted portraits of many distinguished Scotchmen of the period, including Sir Walter Scott.

RAMEAU (*ra-mo'*), **JEAN PHILIPPE** (1683-1764). A French composer; born at Dijon; wrote on harmony and, settling in Paris, composed operas, his first successful one, *Hippolyte et Aricie*, and his best, *Castor et Pollux*. His work laid the foundation for a rational science of harmony.

RAPHAEL, RAFFAELLO SANZIO, or SANTI D'URBINO (1483-1520). The greatest of modern painters; born in Urbino, Italy. He received his earliest instructions from his father, Giovanni Santi, after whose death, in 1494, he probably became the pupil of Timoteo Viti. In 1504 he visited Florence and lived there till 1508, when he was called to Rome by Pope Julius II. and employed to paint the chambers of the Vatican. Raphael spent the rest of his short life at Rome. In the numerous works, frescoes, and oil paintings of this unrivaled master, three styles are distinctly recognizable. The first is the "Umbrian," the second "Florentine," and the third style "Roman," and is peculiarly Raphael's own—that which constitutes him the greatest of painters. Its supreme excellence is the equable development of all the essential qualities of art, composition, expression, design, coloring. Among Raphael's oil paintings are the "St. Cecilia" at Bologna; the famous "Madonna di San Sisto," now in the Dresden Gallery; the "Spasimo di Sicilia," now at Madrid; and the "Transfiguration," his last work. His drawings are very numerous, and are to be found in most of the public and private museums of America and Europe. Raphael, who had occupied himself with architecture as well as painting, was charged, on the death of his friend, Bramante, in 1514, with the direction of the building of St. Peter's. Raphael died at Rome, in the height of his fame, on his thirty-seventh birthday.

Madonna di San Sisto. By Raphael.
Dresden Gallery.

RAUCH, CHRISTIAN DANIEL (1777-1857). An eminent Prussian sculptor; born in Waldeck; patronized by royalty; influenced at Rome by Thorwaldsen and Canova; resided chiefly in Berlin; executed statues of Blücher, Dürer, Schiller, and others, as well as busts. His masterpiece is a colossal monument in Berlin of Frederick the Great.

RAYMOND or **O'BRIEN, JOHN T.** (1836-1887). An American comedian; born in Buffalo, N. Y. His chief parts were in *Our American Cousin* with E. A. Sothern and as Colonel Mulberry Sellers in Mark Twain's *Gilded Age*.

REGNAULT (*reh-no'*), **ALEXANDRE GEORGES HENRI** (1843-1871). A French painter; born in Paris; son of Henri Victor Regnault (1810-1878); a genius of great power and promise, of which several remarkable works by him are proof; volunteered in the Franco-German War and fell at Buzenval.

REHAN or **CREHAN, ADA** (1860-). An American actress; born in Limerick, Ireland; played juvenile parts in Mrs. Drew's Arch Street Theatre in Philadelphia (1873); played in Daly's company from 1879 until his death in 1899. Among her many successful rôles are Rosalind, Katharine, Lady Teazle, Viola, Portia, and Peggy in *The Country Girl*.

REID, SIR GEORGE (1841-). A Scottish portrait painter; born at Aberdeen; illustrated *The Tweed from its Source*; studied under Israels; president of the Royal Scottish Academy (1891-1902).

REID, GEORGE AGNEW (1861-). A Canadian artist; born near Wingham, Ontario; studied under Harris at Toronto and Thomas Eakins at Philadelphia; worked under Constant, Lefebvre, and others in Paris. His "Foreclosure of the Mortgage," a medal winner at the World's Fair (1893), and his panels in the City Hall of Toronto are among his chief works.

REID, ROBERT (1863-). An American figure and mural painter; born at Stockbridge, Mass.; a pupil of William M. Chase and of Boulanger and Lefebvre in Paris. His designs in the Congressional Library, the Appellate Court House, the Paulist Fathers' Church in New York, and in the State House at Boston are among his best works.

REINHART, CHARLES STANLEY (1844-1896). An American artist; born in Pittsburg, Pa. He exhibited in Paris, Munich, and New York City, and was a member of several art associations.

The Drapers' Guild. By Rembrandt.
Rijks Museum, Amsterdam.

REMBRANDT VAN RYN, PAUL, or **REMBRANDT HERMANSZOON** (1606-1669). A Dutch painter; chief of the Dutch school; the greatest master of colors and unrivaled as an etcher. His "Entombment," "The Night Watch," the "Anatomical Lecture," and several portraits of himself and others are among his best works. Several are in the Metropolitan Museum at New York.

REMENYI (*ray-mane'yeh*), **EDOUARD** (1830-1898). An Hungarian violinist; born in Heves, Hungary. In 1854 he visited London, where he was appointed solo violinist to Queen Victoria; in 1860 returned to Hungary, where he attained great distinction. In 1878 he came to the United States, where he spent much of his time and gave many concerts.

REMINGTON, FREDERIC (1861-1909). An American artist and author; born in Canton, N. Y. He was one of the most conspicuous of American artists in "black and white." His "Broncho Buster," "The Wounded Bunkie," and his stories illustrated by his own drawings, *Pony Tracks*, *Crooked Trails*, *Frontier Sketches*, *Sundown Leflare*, and *John Ermine of the Yellowstone*, are among the more notable of his many fine works.

RENWICK, JAMES (1818-1895). An American architect; born in New York City; constructed the Croton Reservoir; studied under Upjohn; designed St. Patrick's Cathedral in New York (1858-1883), Vassar College, Grace and Calvary churches in New York, and the Smithsonian Institution and the Corcoran Gallery in Washington.

RESZ'KE, EDOUARD DE (1855-). A Polish opera singer; born in Warsaw; a brother of Jean de Reszke. He made his first appearance in Paris in 1876, taking rank as a leading star, with a bass voice of remarkable range and power. He has made several visits to the United States, filling the chief rôles in grand opera.

RESZKE, JEAN DE (1853-). A Polish opera singer; born in Warsaw. His début was made in Venice in 1874, under the name of De Reschi, as a baritone. In 1879 he sang as a tenor in Madrid, and since that year he has sung only in tenor rôles. His voice is of remarkable scope. He has made several tours in America.

REYNOLDS, SIR JOSHUA (1723-1792). The chief of English portrait painters; born in Devonshire; visited Italy and the great centers of art there, when he lost his hearing and settled in London in 1752, where he began to paint portraits and had as the subjects of his art the most distinguished people; "filled England with the ghosts of her noble squires and dames."

RIBE'RA, JUSEPE DE (1588-1656). A Spanish painter; born near Valencia; indulged in a realism of a gruesome type; had Salvator Rosa and Giordano for pupils.

RICHARDS, WILLIAM TROST (1833-1905). An American marine painter; born in Philadelphia; a pupil of Paul Weber; studied also in Florence, Rome, and Paris; noted for his painting of surf scenes. Many notable examples of his work are in the several galleries of the United States.

RICHARDSON, HENRY HOBSON (1838-1886). An American architect; born in St. James Parish, La.; studied in Paris; settled in Boston, Mass., in 1875; designed Trinity Church, Boston; the State Capitol at Albany; Brattle Street Church in Boston; Sever Hall at Harvard; the Allegheny County buildings at Pittsburg; the Field Building in Chicago; and the Chamber of Commerce in Cincinnati.

RICHTER, HANS (1843-). An Austrian musical conductor; born at Raab; chief assistant to Wagner; musical conductor at Munich and Budapest; conductor of the Court Opera Theatre and of the Philharmonic concerts at Vienna; conductor of an annual series of concerts at London; conductor of the Hallé concerts in Manchester; noted for his intimate knowledge of each instrument and for a prodigious memory.

RIMMER, WILLIAM (1821-1879). An American sculptor and teacher; born in Liverpool, England; settled in Boston (1868); lectured at the Lowell Institute and at Harvard University; director of the art school of Cooper Union (1866-1870). His "Falling Gladiator" in Boston, with a replica in the Metropolitan Museum in New York; a colossal head of St. Stephen; and a statue of Alexander Hamilton are his chief works; wrote *The Elements of Design*.

LATONA AND HER CHILDREN. BY W. H. RINEHART. Metropolitan Museum, New York.

RINEHART, WILLIAM HENRY (1825-1874). An American sculptor; born in Carroll County, Md.; studied in Italy and eventually settled in Rome. His "Chief Justice Taney" at Annapolis; "Atalanta," "Latona and her Children," "Diana," "Endymion," and "Rebecca" in the Corcoran Gallery; and his masterpiece, "Clytie Forsaken by Apollo" in Baltimore, are his chief works; left his property to assist young sculptors. The fund amounts to $100,000.

RISTO'RI, ADELAIDE (1822-1906). A distinguished Italian tragedienne; born at Cividale. Her career on the stage was a continuous triumph. The rôles in which she specially shone were those of Lady Macbeth, Medea, and Mary Stuart; visited the United States in 1866-1875 and 1884.

THE THINKER. BY RODIN.

RITTER, FREDERIC LOUIS (1834-1891). An American composer; born in Strassburg; pupil of Hauser in Strassburg and of Kastner in Paris; settled in Cincinnati, Ohio, in 1856; organized the Cecilia Society and the Philharmonic Society; conductor of the Arion Society in New York (1861); professor of music at Vassar College (1874); wrote five symphonies and more than 100 songs.

RITTER, HENRY (1816-1853). A Canadian painter; born in Montreal; studied with Gröger at Hamburg and with K. F. Sohn at Düsseldorf.

RIVE-KING, JULIE (1859-). An American pianist; born in Cincinnati, Ohio; studied with William Mason in New York and with Reinecke and Liszt in Germany. For 20 years she played with the leading orchestras; composed some piano pieces that have been popular.

RIVIERE, BRITON (1840-). An English painter; born in London; noted as a faithful painter of animals. His "Sympathy" in Holloway College and six pictures in the Tate Gallery are among his best works.

ROBBIA, ANDREA DELLA (1437-1528). A Florentine sculptor; nephew of Luca della Robbia; noted for his enameled terra cotta reliefs. His retable of the "Assumption" in the Metropolitan Museum at New York is a fine example of his work.

ROBBIA, LUCA DELLA (1399-1482). A Florentine sculptor; made 10 fine panels in the Cathedral at Florence, reliefs for the Campanile, a bronze door for the sacristy of the Cathedral, and the tomb of the bishop of Fiesole; originated the idea of terra cotta reliefs covered with enamel in polychrome, since known as Della Robbia ware.

ROBERTS, HOWARD (1843-1900). An American sculptor; born in Philadelphia; studied under Joseph A. Bailly and with Dumont in Paris. His "Fulton" in the National Capitol, "Lot's Wife," "Hypatia," and other statuettes are among his best known works.

ROBINSON, THEODORE (1852-1896). An American artist; born at Irasburg, Vt.; studied with Gérôme and Duran in Paris and with Monet; one of his best pictures—"Hudson River Canal"—was rejected when offered as a gift to the Metropolitan Museum in New York. A storm of protest followed. His "Winter Landscape" was accepted. His work was too impressionistic for the academic standard which obtained at the time.

ROBSON, STUART, or **ROBSON STUART** (1836-1903). An American actor; born at Annapolis, Md.; appeared first in Baltimore; played Captain Crabtree in *Black-eyed Susan* and in *Our Boarding-House*, Bronson Howard's *The Henrietta, She Stoops to Conquer, Oliver Goldsmith*, and others. He was associated with William H. Crane (1877-1889).

RODIN, AUGUSTE (1840-). A French sculptor, painter, and etcher; born in Paris. His work has been most hotly discussed and abused. On more than one occasion the commission has been withdrawn. Among his best known are "L'Age d'Airain," which he was accused of having cast from a living model; "Balzac;" "Victor Hugo Listening to the Inner Voices;" "The Burghers of Calais;" "La heaulmière;" "Gate of Hell;" "The Pillar of Work;" and the bronze statue of "St. John the Baptist."

ROGERS, RANDOLPH (1825-1892). An American sculptor; born in Waterloo, N. Y.; studied with Bartolini in Rome, where he spent much of his life. His most remarkable works include the bronze doors in the National Capitol with the eight panels of scenes from the life of Columbus; "The Angel of the Resurrection" for the tomb of Colonel Colt at Hartford; figures of Marshall, Nelson, and Mason on the Washington Monument at Richmond, Va.; the bronze statue of Lincoln in Philadelphia; "The Genius of Connecticut" for the Capitol at Hartford; and "Seward" in Central Park, New York.

LADY HAMILTON. BY GEORGE ROMNEY.
National Portrait Gallery, London.

ROMNEY, GEORGE (1734-1802). An English portrait painter; born at Dalton, Lancashire; settled in London and became a rival of Reynolds in popularity. He painted men and women of the day, especially Emma, Lady Hamilton, whom he depicted in a long series of portraits. He was never admitted to the Royal Academy.

ROOT, GEORGE FREDERICK (1820-1895). An American composer and organist; born at Sheffield, Mass.; studied with George J. Weber; composed many popular songs, such as "The Battle Cry of Freedom," "Tramp, Tramp, Tramp," "Just before the Battle, Mother," and "There 's Music in the Air." His serious works include the cantatas *Flower Queen, Daniel, The Pilgrim Fathers, Belshazzar's Feast*, and *The Haymakers*.

ROSA, SALVATOR (1615-1673). An Italian painter; born near Naples; a man of versatile ability. His paintings of landscape were of a somber character, and generally representative of wild and savage scenes. His great ambition was to paint historical scenes; in "Conspiracy of Catiline," "Saul and the Witch of Endor," his aspiration is justified.

ROSENTHAL, MORITZ (1862-). An Austrian pianist; born at Lemberg; a pupil of Liszt and occupied the front rank of pianists; made tours of the United States in 1887, 1896-1897, 1898, and 1906.

ROSENTHAL, TOBY EDWARD (1848-). An American painter; born in New Haven, Conn.; studied in San Francisco under Henri Bacon and Arriola, and under Piloty in Munich, where he has since lived. Among his works are "Morning Prayers in the Bach Family," "Elaine," "The Trial of Constance Beverly," and "A Dancing Lesson during the Empire."

ROSSI'NI, GIOACHINO (1792-1868). A celebrated Italian composer of operatic music; born at Pesaro. His operas were numerous, of a high order, and received with unbounded applause, beginning with *Tancred*, followed by *Barber of Seville, La gazza ladra, Semiramis, William Tell*, etc. He composed a *Stabat Mater*, and a *Mass* which was given at his grave.

DESCENT FROM THE CROSS. BY RUBENS.
Cathedral, Antwerp.

RUBENS, PETER PAUL (1577-1640). The greatest of the Flemish painters; born at Siegen, in Westphalia; went with his widowed mother in 1587 to Antwerp, where he sedulously cultivated the painter's art and early revealed his masterly gift of coloring; went to Italy, and for a number of years was in the service of the duke of Mantua, who encouraged him in his art and employed him on a diplomatic mission to Philip II. of Spain; executed at Madrid some of his finest portraits; returned to Antwerp in 1609; completed in 1612 his masterpiece, "The Descent from the Cross" in Antwerp Cathedral. With the aid of assistants he painted the series of 24 pictures now in the Louvre, illustrating the principal events in the life of Maria de' Medici during 1628-1629. Diplomatic missions engaged him in Spain and at the English courts, where his superabundant energy enabled him to execute many paintings for Charles I.

RU'BINSTEIN, ANTON GREGOR (1830-1894). A Russian musician; born at Wechwotynecz, Kherson; in 1848 settled in St. Petersburg as teacher of music, where he succeeded in getting a musical conservatory founded and became its director. In 1872 he came to the United States and had an enthusiastic reception. He ended his concert tours in 1886. As a pianist he held the highest rank, being usually reckoned the greatest since Liszt. He ceased playing in public some time before his death, which occurred in St. Petersburg, Russia.

RUCKSTUHL, FREDERICK WELLINGTON (1853-). An American sculptor; born at Breitenbach, Alsace. His parents brought him to St. Louis, Mo. (1854); studied in Paris. His works include "Evening" in the Metropolitan Museum in New York; "Mercury Leading the Eagle of Jupiter" in St. Louis;

"Solon" in the Congressional Library; statue of General Hartranft in Harrisburg; "Victory" on the Soldiers and Sailors' Monument at Jamaica, N. Y.; heads of Franklin, Goethe, and Macaulay on the façade of the Congressional Library; "Wisdom" and "Force" on the Appellate Court of New York; and "Gloria Victis" on the Confederate Monument at Baltimore.

RUDE, FRANCOIS (1784-1855). A French sculptor; born at Dijon; gained the Grand Prix (1812). His "Mercury," "Young Neapolitan Fisherman," and the trophy on the Arc de Triomphe de l'Etoile are among his best known works.

RUSK, WILLIAM (1756-1833). An American sculptor; born in Philadelphia. His works include the figureheads of the frigates *United States* and *Constitution*, "Exultation" and "Praise" in St. Paul's Church at Philadelphia, and statue of Washington in Independence Hall in Philadelphia.

RUSSELL, ANNIE (1869-). An American actress; born in Liverpool, England; appeared when a child on the stage at Montreal, Canada; played in *Pinafore*; joined the Madison Square company and played in *Esmeralda*, *Elaine*, and *May Blossom*; played *The Royal Family*, *Miss Hobbs*, and *The Girl and the Judge* (1898); played Puck in *A Midsummer Night's Dream* at the Astor Theatre (1906).

RUSSELL, SOL SMITH (1848-1902). An American actor; born in Brunswick, Me.; a drummer boy in the Union army; joined Daly's company (1874); starred in *Edgewood Folks*, *Peaceful Valley*, *A Poor Relation*, *A Bachelor's Romance*, and *The Hon. John Grigsby*.

The Windmill. By Ruysdael.

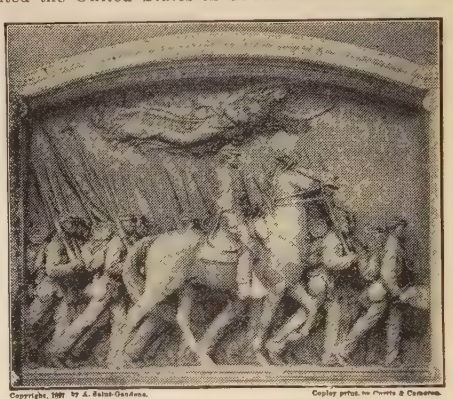
RUYSDAEL (*rois'dayhl*), **JACOB** (1628-1682). A famous Dutch landscape painter; born and died at Haarlem. Few particulars of his life are known. His best pictures, to be seen in the galleries of Dresden, Berlin, Paris, etc., display a fine poetic spirit.

RYDER, ALBERT PINKHAM (1847-). An American painter; born in New Bedford, Mass. His "Lowlands near Highbridge," "Forest of Arden," "Tempest," "Macbeth," "Siegfried," and "Flying Dutchman" are his best works.

SAFONOFF, VASILI DE (1852-). A Russian conductor; born at Istchory, in the Caucasus; studied at St. Petersburg under Zaremba, Leschetitzky, and Brassin; taught there and at Moscow; directed at St. Petersburg, Paris, and Berlin for years; led one of the Philharmonic Society concerts in New York (1905) and again in 1906, when he was appointed conductor of the society.

SAINT-GAU'DENS, AUGUSTUS (1848-1907). An American sculptor; born in Dublin, Ireland; came to the United States in infancy. In 1871, while in Rome, he produced his first figure, "Hiawatha." He returned to the United States in 1873. He designed the Medal of Award of the Columbian Exposition and a number of presentation medals authorized by Congress. His "Diana" on the tower of Madison Square Garden; "Farragut" in Madison Square, "Peter Cooper," and the equestrian statue of Sherman, all in New York; "Lincoln" and "John A. Logan" in Chicago; "Col. Shaw" in Boston; "Deacon Chapin" in Springfield, Mass.; his relief panel of Robert Louis **Stevenson, and** "Grief" in Rock Creek Cemetery at Washington are his chief works.

SAINT-SAENS (*san son'*), **CHARLES CAMILLE** (1835-). A French musician; born in Paris; for 19 years organist of the Madeleine; composer of a number of operas indifferently successful, and of much orchestral and chamber music of a masterly kind; is held to be one of the greatest pianists and organists; visited the United States in 1906.



Shaw Memorial. By Saint-Gaudens. Boston Common.

SAL'OMON, JOHANN PETER (1745-1815). A German violinist and composer; born at Bonn; went to London, and is remembered for the great stimulus he gave to musical culture; composed songs, glees, violin pieces, etc.; buried in Westminster Abbey.

SALVINI (*sal-vee'nee*), **TOMMASO** (1829-). An Italian tragedian; born in Milan. In 1849 he won great distinction in the revolutionary war. He scored success in Brussels and Madrid; visited the United States in 1873 and England in 1875. After another visit to the United States in 1880, and to Great Britain in 1884, he retired from the stage to enjoy a life of leisure in his villa near Florence (1890). Among his rôles were Romeo, Hamlet, Othello, the leading parts in Racine's and Corneille's plays, of Voltaire's *Zaïre*, and Alfieri's *Merope* and *Saul*.

SANDERSON, SIBYL (1865-1903). An American soprano; born in Sacramento, Cal.; studied in Paris under Massenet, Sbriglia, and Marchesi; made her début at The Hague in *Ninon* (1888); drilled by Massenet for her appearance in Paris in his *Esclarmonde* and *Thaïs* (1889). Saint-Saëns wrote ***Phryne*** for her (1893); sang Manon, Juliette, and Michaëla in the Metropolitan Opera House in New York in 1894 and in 1898; married Antonio Terry, a Cuban, in 1897.

SANDHAM, HENRY (1842-). A Canadian painter; born in Montreal; studied under J. A. Fraser and in Paris; lived for a time in Boston, Mass., then settled in Toronto (1890). His "Battle of Lexington," "Founding of Maryland," and portrait of Sir John A. McDonald are his chief works.

SARASATE, PABLO MARTIN MELITON (1844-1908). A Spanish violinist; born at Pamplona; studied in Paris and became one of the great artists of his time; first appeared in London at the Crystal Crystal Palace in 1861; played in America with Eugène d'Albert in 1889.

SARGENT, JOHN SINGER (1856-). An American portrait painter; born of American parents in Florence, Italy; studied there and with Carolus Duran in Paris. He settled in London in 1884, making occasional visits to America. He is the most distinguished of American portrait painters. The list of his excellent works is a long one and includes portraits of leading Americans, the "Pageant of Religions" in the Boston Public Library, and some idealistic works. He has been widely honored abroad and was awarded the Grand Prize at St. Louis in 1904.

SARTAIN, JOHN (1808-1897). An American artist; born in London, England; came to the United States in 1830 and was one of the first to introduce mezzotint engraving. He was the author of a large number of engravings for book illustration, and engraved many historical paintings; designed the monument to Washington and Lafayette in Monument Cemetery, Philadelphia, and published interesting personal reminiscences.

SARTAIN, WILLIAM (1843-). Born in Philadelphia, Pa.; son of John Sartain; studied under Bonnat in Paris; first picture exhibited at Royal Academy in London (1875). His "Lucia," "An Arab Café," "Narcissus" in Smith College, "In the Hackensack Valley," "The End of Day," and "The Sudden Shower" are notable.

HEAD OF EZEKIEL. BY SARGENT.
In the Boston Public Library.

SCHUBERT, FRANZ PETER (1797-1828). An Austrian composer; born in Vienna. The number and variety of his compositions are extraordinary. The most admired are his songs, and among them "The Erl-King" and "Ave Maria" are perhaps the best known; but he wrote also operas, sonatas, symphonies, overtures, cantatas, six masses, etc. Schubert spent almost his whole life at Vienna.

SCHUMANN, ROBERT (1810-1856). A German musical composer; born in Zwickau, Saxony. In the year following his marriage he published nearly 140 songs, many on Heine's words. He then commenced his great series of orchestral works, his symphony in B flat being first performed at the close of 1841. Under stress of work, however, his reason failed him, and after an attempt to drown himself in 1854 he was confined in a lunatic asylum, where he died.

SCHUMANN-HEINK, ERNESTINE (1861-). A German contralto; born at Lieben; studied with Marietta von Leclair at Gratz; made her début at Dresden (1878); sang at Baireuth (1896); came to the United States in 1898 and attained to great popularity in both opera and concert singing.

SCOTT, JULIAN (1846-1901). An American battle painter; born in Johnson, Vt.; studied in New York and with Leutze. His works are chiefly scenes from the Civil War and include "Rear Guard at White Oak Swamp" (in the Union League Club at New York), "Capture of André," and "In the Cornfield at Antietam."

SEIDL, ANTON (1850-1898). An Hungarian musical conductor; born in Budapest; studied at Leipzig; chorus master at Vienna (1870); Wagner's secretary (1873) and assisted with the production of the *Nibelungen Trilogy* at Baireuth (1876); conductor at Bremen (1883-1885); conductor of Wagner scores in Europe for several years; succeeded Leopold Damrosch at the Metropolitan Opera House in New York (1885-1891) and there produced for the first time in America *Tristan und Isolde, Siegfried, Die Götterdämmerung,* and *Die Meistersinger*; led the Philharmonic Orchestra for several years; conducted at Baireuth in 1886 and in 1897. He was one of the world's greatest Wagnerian leaders.

SEMBRICH, MARCELLA (1858-). A Polish soprano singer; born at Wisniowczyk; studied with Wilhelm Stengel, whom she married afterward, and with Epstein and Rokitansky; made her début in Athens in *I Puritani* (1877); sang in Europe and America for 10 years. After 1900 she sang for several seasons in New York. Among her notable parts are Rosina in the *Barber of Seville,* Norina in *Don Pasquale,* Lucia, Martha, and Leonora in *Il trovatore.*

SEWELL, ROBERT VAN VORST (1860-). An American painter; born in New York; studied in Paris under Lefebvre and Boulanger (1883-1887); won the first Hallgarten prize at the National Academy (1888); elected A. N. A. in 1902. His chief mural work is "The Story of Psyche" in the St. Regis Hotel in New York and "The Canterbury Pilgrims" in the residence of George Gould at Lakewood, N. J.

SHERWOOD, ROSINA EMMETT (1857-). An American artist and illustrator; born in New York; studied under William M. Chase and at the Julien Academy at Paris; did some decorations for the Woman's Building at Buffalo in 1901 and at St. Louis in 1904; has received medals in recognition of much good work.

SHERWOOD, WILLIAM HALL (1854-). An American teacher, composer, and pianist; born in Lyons, N. Y.; studied under William Mason in New York and in Europe under Kullak, Deppe, and Liszt; did concert work in Germany (1882-1884); taught in the New England Conservatory (1885); head of the piano department of the Chicago Conservatory (1889-1899); established the Sherwood Piano School; wrote a *Scherzo-Caprice,* a *Gypsy Dance,* and many other pieces.

SHIELD, WILLIAM (1748-1829). An English musical composer; born in Swalwell, Durham; wrote "The Ploughboy" and "The Wolf," and is said to have composed the air of "Auld Lang Syne" and "Comin' through the Rye."

SHIRLAW, WALTER (1838-). An American painter; born in Paisley, Scotland; came with his parents to Chicago in 1840; went to Munich (1870); teacher in the Art Students' League in New York (1876); first president of the Society of American Artists (1878); elected N. A. in 1888. His notable works include "Tuning the Bell," "Sheep Shearing in the Bavarian Mountains," "The Goose Girl," "The Marble Quarry," "A Street Scene in Brittany," "Rolling Steel Plates," "Emptying the Crucible," many designs for stained glass, and some mural decorations.

MADONNA AND CHILD. BY SICHEL.

SICHEL, NATHANAEL (1844-). A German painter; born in Mentz; studied with Schrader at Berlin and at Rome and Paris. Among his works are "Philip the Generous at his Wife's Tomb" and "Scenes from the Life of Mary Stuart."

SIDDONS, SARAH (1755-1831). The most distinguished of English tragediennes; born at Brecon, in South Wales. She belonged to the Kemble family, noted as actors; played with Garrick's company (1775). Her chief rôles were Euphrasia, Zara, Jane Shore, Belvidera, Calista, Lady Macbeth, Queen Katherine, Constance, Portia, Isabella, Desdemona, Imogen, Hermione, and Volumnia.

SIGNORELLI, LUCA (1441-1523). An Italian painter; born at Cortona; taught Michelangelo; worked

on the frescoes of San Francesco at Arezzo, in Perugia Cathedral, at Volterra, at Monte Oliveto, and at the Orvieto Cathedral. His paintings in the Vatican were destroyed to make way for those of Raphael.

SIMMONS, EDWARD EMERSON (1852-). An American painter; born at Concord, Mass.; was graduated at Harvard (1874); studied under Lefebvre and Boulanger in Paris; did part of the decorations of the Columbian Exposition buildings (1893) and mural work on courthouses and leading hotels in New York and on the Congressional Library.

PORTRAIT OF MRS. SIDDONS. BY GAINSBOROUGH.

SIMMONS, FRANKLIN (1839-). An American sculptor; born in Webster, Me.; was graduated at Bates College (1861); made medallion portraits of Farragut, Porter, Grant, Meade, Sheridan, Thomas, Sherman, and Hooker; went to live in Rome in 1868; made statues of Roger Williams, Governor Pierpont, Longfellow, General Logan, the statue of Grant for the G. A. R. memorial in the rotunda of the National Capitol, "Paris and Helen," and "Grief and History" on the Peace Monument at Washington.

SKINNER, OTIS (1858-). An American actor; born at Cambridge, Mass.; began acting at the Philadelphia Lyceum in 1877; engaged by Booth in 1880; leading man with Mme. Modjeska (1892-1895).

SMART, HENRY (1813-1879). An English composer and organist; born in London; wrote the opera *Bertha, or the Gnome of Hartzburg*, the cantata *The Bride of Dunkerron*, several anthems, many part songs, and several highly valued compositions for the organ.

SMEDLEY, WILLIAM THOMAS (1858-). An American painter and illustrator; born in Chester, Pa.; studied in Philadelphia and under J. P. Laurens in Paris; settled in New York in 1880 and did much work for *Harper's* and other magazines; elected N. A. in 1905. His works include a number of portraits, that of "Ruth" being exhibited in 1906.

SMETANA, FRIEDRICH (1824-1884). A Bohemian pianist and composer; born at Leitomischl; a pupil of Liszt; conductor of several societies; opened a school of music at Prague and taught Dvorák; a brilliant pianist.

SMILLIE, GEORGE HENRY (1840-). An American painter; born in New York; studied under James Hart and in Europe. Among his works are "The Merrimac River" in the Boston Art Club, "Light and Shadow Along the Shore" in the Union League Club at Philadelphia, "Boats of Venice," "Gloucester Harbor," "A Grey Day," "Vineyard Sound," and "At Narragansett"; elected N. A. in 1882.

SMILLIE, JAMES DAVID (1833-1909). An American painter; born in New York; studied in Europe (1862); elected N. A. in 1876. His recent works include "A Pool in the Woods" and "The River's Source."

SMIRKE, SIR ROBERT (1781-1867). An English architect; born in London; designed the Board of Trade, the Mint at Tower Hill, the Post Office in London, the British Museum, Covent Garden Theatre, London Customhouse, Carlton Club, and Union Club; elected R. A. in 1811.

SONTAG, HENRIETTE, COUNTESS ROSSI (1806-1854). A German singer; born in Koblenz; appeared with great success in European capitals; married Count Rossi in 1828 and retired in 1830; reappeared in 1849; made a tour of the United States in 1853.

SOTHERN, EDWARD ASKEW (1826-1881). An English-American comedian; made his mark in Tom Taylor's *Our American Cousin*, appearing thousands of times in America and England; scored great successes as David Garrick and Lord Dundreary. His son, **EDWARD HUGH** (1859-), is now appearing with Julia Marlowe in Shakespearean rôles.

SOU'SA, JOHN PHILIP (1856-). An American musician; born in Washington, D. C. He was band leader of the United States Marine Corps (1880-1892), and in the latter year organized the famous Sousa Band, which gave concerts in England, France, and Germany, and all over the United States. He has composed numerous songs, waltzes, operas, and orchestral suites, but is best known from his marches, which have been republished throughout Europe. His *Washington Post, Liberty Bell, The Stars and Stripes Forever*, and his operettas *El Capitán, The Charlatan*, and *The Bride Elect* are very popular.

SPOHR, LUDWIG (1784-1859). A German composer and violinist; born in Brunswick; produced both operas and oratorios, *Faust* among the former, the *Last Judgment* and the *Fall of Babylon* among the latter.

SQUARCIONE, FRANCESCO (1394-1474). An Italian painter; born at Padua; founded one of the first Italian academies of art, and known as the "father of Italian painting"; taught Mantegna; best known by his altarpiece at Padua.

STAINER, JACOB (1621-1683). An Austrian violin maker; born near Innsbruck; founder of the Tyrolese school of violin makers.

STAINER, SIR JOHN (1840-1901). An English composer and organist; born in London; organist of St. Paul's (1872-1888); professor of music at Oxford (1889); wrote two cantatas, *The Daughter of Jairus* and *Mary Magdalen*; an oratorio, *The Crucifixion*; and a *Treatise on Harmony*.

STANFORD, SIR CHARLES VILLIERS (1852-). An Irish composer; born in Dublin; organist of Trinity College (1872); professor at the Royal College (1882) and at Cambridge University (1887). His work is varied and he stands in the front rank of British composers.

STEELL, SIR JOHN (1804-1891). A Scottish sculptor; born at Aberdeen; studied in Rome; modeled "Alexander Taming Bucephalus," the statue of Scott on Scott's Monument, statue of Queen Victoria, statue of Wellington, and the Albert Memorial, all in Edinburgh. His "Sir Walter Scott" and "Robert Burns" are in Central Park, New York.

STEEN, JAN (1626-1679). A Dutch painter; born in Leyden; studied under Knupfer, Adriaen von Ostade, and Van Goyen; known as the "Molière of painting."

STERLING, ANTOINETTE (1850-1904). An American contralto; born at Sterlingville, N. Y.; studied with Abella in New York and in Europe with Mme. Marchesi and Garcia; sang for a time in Beecher's church in Brooklyn; settled in London (1873). Sullivan wrote for her "The Lost Chord" and Barnaby, "When the Tide Comes In."

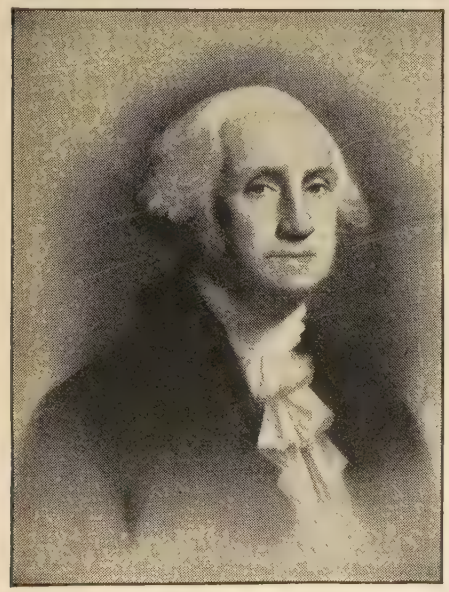
STERNBERG, CONSTANTIN (1852-). A Russian-American pianist; born at St. Petersburg; studied under Moscheles, Reinecke, Hauptmann, Kullak, and Dorn; came to America in 1880; taught in New York, in Atlanta, Ga., and established the Sternberg School of Music in Philadelphia in 1890.

STILLMAN, WILLIAM JAMES (1828-1901). An American painter and author; born in Schenectady, N. Y.; studied under Church and in London, where he

was influenced by Turner and Ruskin; painted in New York until 1861, when he was made consul at Rome, and at Crete in 1865; a friend of Lowell, Longfellow, Holmes, and Agassiz; wrote *The Acropolis of Athens, The Cretan Insurrection, The Old Rome and the New, Francesco Crispi,* and *Autobiography of a Journalist.*

STORY, WILLIAM WETMORE (1819-1895). An American sculptor and poet; born in Salem, Mass.; was graduated at Harvard (1838) and at the Law School in 1840; practised until 1845; went to Rome and opened a studio (1848), where he completed the statue of his father, which is in the Mount Auburn Cemetery at Cambridge, Mass. Among his sculptures are "Cleopatra," "Libyan Sibyl," "Delilah," "Jerusalem in her Desolation," "Semiramis"; statue of George Peabody in London, Edward Everett in Boston Public Garden, Professor Henry in the Smithsonian Institution, and the Francis Scott Key Monument in Golden Gate Park at San Francisco. Taft says that "Story's art came at the right time, and had its very powerful influence in interesting a large public."

STRADIVAR'I, ANTONIO (STRADIVARIUS) (1644-1737). An Italian violin maker; born in Cremona. It was he who settled the typical pattern of the Cremona violin, and his instruments, for tone and finish, have never yet been excelled. Though he sold his violins for $20, one recently realized $15,000 and one of his 'cellos, $20,000.



STUART'S PORTRAIT OF WASHINGTON.
Boston Art Museum.

STRAUSS, JOHANN (1804-1849). An Austrian composer; born at Vienna; formed his own orchestra and made successful tours of Europe (1833); wrote 152 **waltzes,** which did much to raise this form of music.

STRAUSS, JOHANN (1825-1899). An Austrian musician; born in Vienna. After composing dance music for many years he undertook an operetta, *Indigo,* which was produced in 1871 and met with instantaneous success. Subsequently he produced *The Forty Thieves, Cagliostro, The Gypsy Baron,* etc., and numerous waltzes, the best known being *The Beautiful Blue Danube.*

STRAUSS, RICHARD (1864-). A German composer and conductor; born at Munich; director at Meiningen; second conductor at Munich (1894); first conductor at Berlin (1898); visited the United States and conducted several of his own compositions (1905). Since the death of Brahms he is the most noted of living German musicians; wrote *Symphonia Domestica,* several symphonic poems, over 50 extremely popular songs, and the operas *Guntram, Feuersnot, Salome* (to Oscar Wilde's text), and *Elektra.*

STUART, GILBERT CHARLES (1755-1828). An American painter; born in Narragansett, R. I. In 1775 he made his way to London, where he led for two years a Bohemian life. Upon his talent being recognized he became a fashionable portrait painter. In 1792 he returned to the United States and painted portraits of Washington, Jefferson, Madison, John Adams, and many of the distinguished men of the period.

STURGIS, RUSSELL (1836-1909). An American architect and writer on art and architecture; born at Baltimore, Md.; studied in New York and in Europe; designed several of the Yale buildings and the Flower Hospital in New York; professor of architecture and of the arts of design at the College of the City of New York (1878-1880); edited the valuable *Dictionary of Architecture* and wrote *How to Judge Architecture, The Appreciation of Sculpture, The Appreciation of Pictures,* and *A History of Architecture.*

SULLIVAN, SIR ARTHUR SEYMOUR (1842-1900). An English musical composer; born in London; wrote the music for *The Tempest,* the dramatic work *Cox and Box,* and the grand opera *Ivanhoe*; with W. S. Gilbert, *Thespis, Trial by Jury, H. M. S. Pinafore, Pirates of Penzance, Patience, Iolanthe, Mikado, Yeomen of the Guard, Gondoliers, Utopia Ltd.,* oratorios, cantatas, anthems, part songs, hymns, tunes, and songs.

SULLY, THOMAS (1783-1872). An American portrait painter; born in Lincolnshire, England; brought by his parents to Charleston, S. C., in 1792; studied in London under Benjamin West; settled in Philadelphia in 1812. Stephen Girard built a home for him in 1825; visited London in 1837 and painted a portrait of Queen Victoria. His portraits include those of George Frederick Cooke as Richard III., Dr. Rush and Dr. Coates, Commodore Decatur, Thomas Jefferson, Charles Kemble, Rembrandt Peale, Andrew Jackson, William Gynn, and the portrait of himself which is in the Metropolitan Museum at New York.

SUPPE, FRANZ VON (1820-1895). An Austrian composer; born at Spalato, in Dalmatia; musical director at Vienna. Among his operas are *Fatinitza, Boccaccio,* and the overture to *Poet and Peasant* (*Dichter und Bauer*).

SVENDSEN, JOHAN SEVERIN (1840-). A Norwegian musical composer; born at Christiania; conductor there and at Copenhagen; wrote a symphony, chamber music, concertos, and songs. His *Romance* for violin is especially fine.

TAFT, LORADO (1860-). An American sculptor; born at Elmwood, Ill.; was graduated at the University of Illinois (1879); studied at the Ecole des Beaux-Arts in Paris (1880-1883) and won the *atelier* prize; instructor at the Chicago Art Institute (1886); lecturer in University Extension Courses; sculptor of the statues of Schuyler Colfax at Indianapolis and of Grant at Fort Leavenworth, Kansas; won a silver medal at Buffalo in 1901 and at St. Louis in 1904; wrote *History of American Sculpture.*

TAIT, JOHN ROBINSON (1834-1909). An American painter; born in Cincinnati; studied at Florence, Düsseldorf, and Munich; art critic on the New York *Mail and Express.* His paintings are chiefly scenes in the Bavarian Tyrol; wrote *European Life, Legend, and Landscape* and a book of poems, *Dolce far Niente.*

TALMA, FRANCOIS JOSEPH (1763-1826). A famous French tragedian; born in Paris. During the Revolution he was the foremost actor at the Théâtre de la République, and subsequently enjoyed the favor of Napoleon. His notable carriage and matchless elocution enabled him to play with great dignity such characters as Othello, Nero, Orestes, and Leicester.

TANNER, HENRY OSSAWA (1859-). An American painter; born in Pittsburg, Pa.; studied in Philadelphia and in Paris under Laurens and Constant. His works are in the Luxembourg, at the Carnegie Institute in Pittsburg, and in Philadelphia. His "Le Pèlerin d'Emmaus," and "Le retour de la sainte femme" were exhibited at the Paris Salon in 1906.

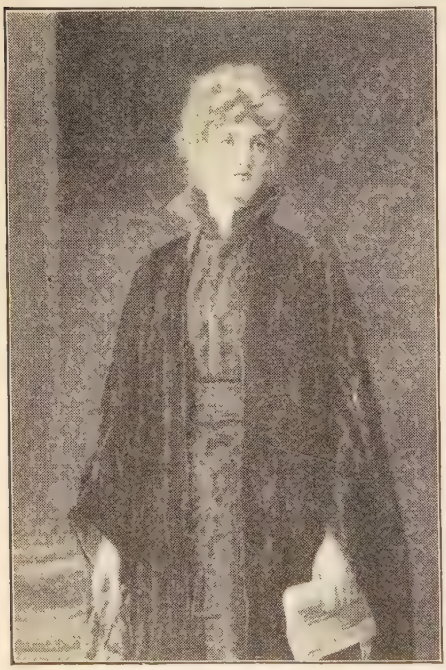
TARBELL, EDMUND C. (1862-). An American painter; born at West Groton, Mass.; studied in Boston and at Paris under Boulanger and Lefebvre; won several medals and prizes in America and abroad. His works are principally outdoor, sunlit scenes full of grace and vigor.

TAYLOR, WILLIAM LADD (1854-). An American illustrator; born at Grafton, Mass.; studied

in Boston, New York, and at Paris under Boulanger and Lefèbvre; illustrated *Selections from Longfellow, The Century in New England,* and *The Pioneer West.*

TENIERS, DAVID, THE ELDER (1582-1649). An eminent Dutch painter. His "Dutch Kitchen" and "Temptation of St. Anthony" are in the Metropolitan Museum of New York.

EVANGELINE. BY W. L. TAYLOR.



ELLEN TERRY AS PORTIA. BY MILLAIS.

TENIERS, DAVID, THE YOUNGER (1610-1690). Son of the preceding. He excelled his father. His "Marriage Festival" and "Judith" are in the Metropolitan Museum of New York, and his "Parable of the Laborer," "Incantation Scene," "Village Fête," and others are in the New York Historical Society's rooms.

TENNIEL, SIR JOHN (1820). An English artist and cartoonist; born in London; associated with *Punch* (1852-1901). His best work is, perhaps, his illustrations of Lewis Carroll's *Alice in Wonderland* and *Through the Looking Glass.*

TERRY, ELLEN ALICIA (1848-). An English actress; born in Coventry; made her first appearance on the stage during Charles Kean's Shakespearean revivals in 1856. In 1864 she married and left the stage, but reappeared again in October, 1867. She accompanied Henry Irving on his numerous American tours, playing with unprecedented success all over the United States. In 1910, is lecturing on dramatic art.

CARITAS, OR CHARITY. BY THAYER.
In the Boston Museum of Fine Arts.

THALBERG (*tahl'burg*), **SIGISMUND** (1812-1871). A celebrated German pianist; born at Geneva; took rank as one of the most brilliant pianists of the age. He was in the United States (1856-1858) and made tours of the principal cities.

THAYER, ABBOTT HENDERSON (1849-). An American painter; born in Boston, Mass.; studied in Paris under Gérôme. Among his best known works are "Corps Ailé," "The Virgin," "The Virgin Enthroned," and "Caritas" in the Boston Museum; elected N. A. in 1901.

THOMAS, AMBROISE or **CHARLES LOUIS AMBROISE** (1811-1896). A French composer; born in Metz; studied under Zimmermann, Kalkbrenner, Dourlen, Barberean, and Le Sueur. His masterpiece is *Mignon,* which placed him in the front rank of French composers.

THOMAS, THEODORE (1835-1905). A German-American conductor; born at Esens, East Friesland; settled in New York in 1845; first violin at the Jenny Lind concerts (1851); traveled for several years as violinist with Jenny Lind, Grisi, Sontag, Mario, and others; formed an orchestra (1864); president of the new College of Music in Cincinnati (1878); conductor of the Philharmonic Society of New York (1885); leader of the Chicago Orchestra (1888). America learned through his efforts to know the works of Wagner, Berlioz, Rubinstein, and Liszt; and the Wagner festival which he conducted in New York in 1881 made the establishment of a German opera in that city possible a few years later.

THOMPSON, DENMAN (1833-). An American actor; born near Girard, Pa.; appeared first at Lowell, Mass., in 1852; went into business, but resumed the stage in 1871; wrote *Joshua Whitcomb* and acted in it until 1886; then wrote *The Old Homestead,* with Joshua Whitcomb as the chief character, which in 1910 is still popular.

THOMPSON, LAUNT (1833-1894). An American sculptor; born at Abbeyleix, in Ireland; brought to

Albany, N. Y., in 1847; elected N. A. in 1862. His colossal "Napoleon" in the Metropolitan Museum in New York, his bust of "Edwin Booth," the statue of John Sedgwick at West Point, and of President Pierson at Yale College are his chief works.

MORNING. BY THORWALDSEN.

THORNYCROFT, W. HAMO (1850-). An English sculptor; born in London; elected R. A. in 1888. His chief works are his statue of "General Gordon," "Cromwell," "The Stanley Memorial," "King Alfred," "The Mower," and "Gladstone."

THOR'WALDSEN, BERTEL (1770-1844). An eminent Danish sculptor; born near Copenhagen; the son of a poor Icelander; studied in Rome, where Canova encouraged him, and a fine statue of Jason established his reputation; executed a colossal group of "Christ, the Consoler," "The Twelve Apostles," "St. John Preaching in the Wilderness," and other religious subjects, besides statues of Copernicus and Galileo and the celebrated reliefs "Night" and "Morning"; bequeathed to his country his large fortune and nearly 300 of his works, now in the Thorwaldsen Museum, Copenhagen.

THURSBY, EMMA (1857-). An American soprano; born in Brooklyn, N. Y.; studied under

NIGHT. BY THORWALDSEN.

Errani in New York and Lamperti in Milan; sang for years in Broadway Tabernacle in New York; made a tour of Europe in 1880 under Maurice Strakosch, and gave concerts in Japan and China in 1903.

TIFFANY, LOUIS COMFORT (1848-). An American artist and art manufacturer; born in New York; studied under George Inness, Samuel Coleman, and with Léon Bailly in Paris; devoted himself to decorative glass, known as the Tiffany "Favrile" glass; chevalier of honor in 1900 and N. A. in the same year.

TINTORET'TO, GIACOMO ROBUSTI, IL (1512-1594). An Italian painter; born at Venice. Save for a few lessons under Titian he seems to have been self-taught; took for his models Titian and Michelangelo, and came specially to excel in grandeur of conception and in strong chiaroscuro effects. Among his most notable pictures are "Belshazzar's Feast," "The Last Supper," "The Crucifixion," "The Last Judgment," "The Resurrection," etc.

TISSOT, JAMES JOSEPH (1836-1902). A French painter; born at Nantes; pupil of Ingres and Flandrin. His "Faust and Marguerite," "La femme à Paris," "Life of Our Lord Jesus Christ" in 365 small water colors, owned by the Brooklyn Institute of Arts and Sciences, and about 400 illustrating the Old Testament.

TITIAN (*tish'yan*), **VECELLIO** (1477-1576). A great Italian painter; born at Pieve di Cadore; the prince of colorists and head of the Venetian school. He was a master of his art from the very first, and his fame led to employment in all directions over Italy, Germany, and Spain. His works were numerous and rich in variety. He ranks with Michelangelo and Raphael as the head of the Italian Renaissance. His list of works is long and contains not one masterpiece, but many.

TOSTI, FRANCESCO PAOLO (1846-). An Italian composer; born in the Abruzzi; singing master to the queen of Italy (1870); teacher to the English royal family (1880); best known as a song writer. Among his more popular works are "Come to My Heart," "Good-bye," "That Day," "Mother," and "For Ever and For Ever."

TREE, HERBERT BEERBOHM (1853-). An English actor and theatrical manager; born in London. His chief rôles are Rev. Robert Spalding in *The Private Secretary*, and the chief characters in *The Balladmonger*, *The Red Lamp*, *A Bunch of Violets*, and *Hamlet*; managed the Comedy, Haymarket, and Her Majesty's theaters.

TRUMBULL, JOHN (1756-1843). An American artist; born in Lebanon, Conn.; served in the Revolutionary War on the staffs of Generals Washington and Gates; became a pupil of Benjamin West. In 1786 he produced his first historical picture, "The Battle of Bunker Hill." In 1817 he was employed by Congress to paint four pictures for the rotunda of the Capitol at Washington,—"The Signing of the Declaration of Independence," "The Surrender of Burgoyne," "The Surrender of Cornwallis," and "The Resignation of Washington at Annapolis." His "Alexander Hamilton" is in the Metropolitan Museum of New York.

TRYON, DWIGHT WILLIAM (1849-). An American painter; born at Hartford, Conn.; studied in Paris under Daubigny, Guillemet, and Harpignies; art professor at Smith College, Northampton, Mass.; settled in New York (1890); elected N. A. (1901). His works rank among the first American landscapes, and include "First Leaves," "Rising Moon," "Evening in Early Spring," and "Autumn"; has won a number of honorable recognitions of his fine work.

TSCHAIKOVSKY, PETER ILYITCH (1840-1893). A Russian composer; born at Votkinsk; studied under Rubinstein; professor of harmony at Moscow (1866-1878). His *Fifth* and the *Sixth* (*Pathétique*) symphonies rank among the world's best; visited the United States (1891) and conducted several of his own compositions at the dedication of Carnegie Hall. His operas include *Eugene Onegin*, *The Maid of Orleans*, *Mazeppa*, *The Enchantress*, and *Iolanthe*.

TURNER, JOSEPH MALLORD WILLIAM (1775-1851). An English landscape painter. His "Slave Ship" is in the Boston Museum; the "Grand Canal" in the Metropolitan Museum at New York; his "Norham Castle" and the "Fountain of Indolence" in private collections there; and his "Scene on the French Coast" and "Staffa" are in the Lenox Library in New York. He gave the bulk of his work—362 paintings and 9000 drawings—to the nation, and left £140,000 to endow an institution for poor artists.

UHDE, FRITZ VON (1848-). A German painter; born in Wolkenburg, Saxony; studied in Paris under Munkácsy. Among his best works are "Suffer Little Children to Come Unto Me," "The Last Supper," "The Nativity," and "The Walk to Bethlehem."

ULRICH, CHARLES FREDERIC (1858-1908). An American painter; born in New York; studied there and in Munich under Loefftz and Lindenschmidt. His

"Glass Blowers of Murano" in the Metropolitan Museum and "Promised Land" are among his best; elected N. A. in 1883; has lived in Venice since 1886.

UNGER, JOHANN FRIEDRICH (1750-1813). A German printer and engraver.

VAN BRUNT, HENRY (1832-1903). An American architect; born in Boston, Mass.; was graduated at Harvard (1854); designed Memorial Hall at Harvard, library of the University of Michigan, First Church in Boston, and the Electricity Building at the World's Fair at Chicago (1893).

OXEN GOING TO LABOR. BY TROYON.

VANDERLYN, JOHN (1775-1852). An American painter; born at Kingston, N. Y.; studied with Gilbert Stuart and, later, in Paris; returned in 1801 and lived with Aaron Burr, vice-president, and painted the famous picture of Burr and his daughter; painted in Rome (1803) his two chief works, "Marius among the Ruins of Carthage" and "Ariadne of Naxos," which latter was reproduced by the engraver Durand; painted portraits of Washington, Monroe, Madison, Calhoun, and Zachary Taylor. The "Landing of Columbus" on the $5 notes was designed by him.

VAN DYCK or **VANDYKE, SIR ANTHONY** (1599-1641). A Flemish painter; born at Antwerp; resided in England for several years before his death, where he became the most popular artist of his time. Two of his portraits are in the Metropolitan Museum at New York.

VAUX, CALVERT (1824-1895). An American architect and landscape gardener; born in London, England; came to America in 1850; associated with Frederick Law Olmsted; made the plans for Central, Morningside, and Riverside parks in New York; Prospect Park in Brooklyn; State Reservation at Niagara Falls; and parks at Bridgeport, Conn., Chicago, and elsewhere; also designed the Metropolitan Museum of Art and the Museum of Natural History in New York.

VEDDER, ELIHU (1836-). An American painter and illustrator; born in New York; studied with Picot in Paris; went to Rome (1857); illustrated the *Rubaiyát of Omar Khayyám* and the *Arabian Nights*. Among his paintings are "Lair of the Sea Serpent," "Cumaean Sibyl," "Questioning the Sphinx," "The Crucifixion," "The Last Sun Worshipper," and the "African Sentinel." His mural work in the Congressional Library is notable.

VEIT (*fite*), **PHILIPP** (1793-1877). A German painter of the Romanticist school; born at Berlin. His best known work is a fresco, "Christianity Bringing the Fine Arts to Germany." He has also "The Two Marys at the Sepulcher," "The Assumption," "The Good Samaritan," and "The Glorification of the Christian Faith."

VELAS'QUEZ, DIEGO RODRIGUEZ DE SILVA Y (1599-1660). The greatest of Spanish painters; born at Seville, of Portuguese family. Portrait painting was his forte, one of his earliest works being a portrait of Olivarez, succeeded by those of Philip IV., Juan Pareja, and Innocent X. Specimens of his work are found in different countries, but the best are in Madrid, Spain. They include sacred subjects, genre, landscape, and animal paintings, as well as portraits. His "Venus with a Mirror" was bought for the National Collection at London for £45,000 in 1906.

VELDE, WILLEM VAN DE, THE ELDER (1611-1693). A Dutch marine painter; born at Leyden; painter of sea fights to Charles II. of England and, later, to James II.

VELDE, WILLEM VAN DE, THE YOUNGER (1633-1707). A Dutch marine painter; born at Amsterdam.

VERBOECKHOVEN (*ver-book'ho-ven*), **EUGEN JOSEPH** (1799-1881). A Flemish painter; born at Warneton, in West Flanders; noted for his pictures of peasant and animal life, such as "Sheep Surprised by a Storm," "Horses Attacked by Wolves," "Sheep in the Campagna," "Souvenirs of Scotland," and "Ewe and Lambs, or the Good Mother." Some of his works are in the Metropolitan Museum at New York.

VER'DI, GIUSEPPE (1813-1901). An Italian composer; born at Roncole, Parma. His musical talent was slow of recognition, but the appearance of his *Lombardi* and *Ernani* established his repute, which was confirmed by *Rigoletto, Il trovatore*, and *La traviata*.

VERESTCHAGIN (*va-res-tchah'gin*), **VASSILI** (1842-1904). A Russian military painter; realistic to an extreme degree and anti-conventional; confined himself largely to martial subjects; perished with the sinking battleship *Petropavlovsk* at the siege of Port Arthur.

VERNET (*ver-nay'*), **CLAUDE JOSEPH** (1714-1789). A distinguished French marine painter. His son, **ANTOINE CHARLES HORACE** (1758-1835) was eminent as a painter of battle scenes. **EMILE JEAN HORACE** (1789-1863), son of the latter, exceeded his father in the painting of battle scenes and ranks as the first French artist of his age.

VERONESE (*va-ro-na'se*), **PAOLO**, or **PAOLO CAGLIARI** (1528-1588). A painter of the Venetian school; born at Verona; painted his "Temptation of St. Anthony" for Mantua Cathedral and settled in Venice in 1555, where he soon earned distinction and formed one of a trio along with Titian and Tintoretto. The subjects he treated were mostly Scriptural, the most celebrated being the "Marriage Feast at Cana of Galilee."

VIBERT, JEHAN GEORGES (1840-1902). A French painter and dramatist; born in Paris. Among his works are "L'appel après le pillage," "La tentation," "Le barbier ambulant," "Un couvent sous les armes," "Le départ des mariés," "Le premier né," "L'apothéose de Thiers," "Bailli de Suffren," "Presentation," "Assumption," "Annunciation," "Mater Dolorosa," "Committee on Moral Books," and "The Missionary's Story."

VIERGE, DANIEL URRIBJETA (1848-1904). A Spanish artist; born at Madrid; went to Paris (1870) and worked in the art department of *Le Monde Illustré* and *La Vie Moderne*; illustrated Hugo's *L'année terrible, Les travailleurs de la mer, L'homme qui rit, Quatre-vingt-treize*, and *Notre Dame de Paris*, and many other works; one of the foremost artists in black and white.

VOGLER, GEORG JOSEF (1749-1814). A German composer; born at Würzburg; ordained priest at Rome (1773); founded schools of music at Mannheim, Stockholm, and Darmstadt; taught Meyerbeer and Weber; was the "Abt Vogler" of Browning's poem.

VOLK, DOUGLAS (1856-). An American artist; born in Pittsfield, Mass.; studied with Gérôme in Paris; taught in the Cooper Union (1879-1884); organized the Minneapolis School of Fine Arts; elected N. A. in 1899; won several prizes, including the Carnegie prize of 1905, taken by his "Boy with Arrow."

VOLLON, ANTOINE (1833-1900). A French painter; born at Lyons. His works include "Coin de Halle" in the Luxembourg, "Portrait d'un pêcheur," "Après le bal," and "The Pumpkin," which is in New York.

VONNOH, BESSIE POTTER (1872-). An American sculptor; born in St. Louis; studied in Chicago and in Paris. Among her works are the miniatures "Dancing Girl," "Reading Girl," and "Mother and Children, or Motherhood"; wife of Robert William Vonnoh.

VONNOH, ROBERT WILLIAM (1858-). An American painter; born in Hartford, Conn.; studied in Boston and with Boulanger and Lefebvre in Paris; taught in the Boston Museum (1885) and at Philadelphia (1891-1896); elected A. N. A. in 1906.

WAGNER, WILHELM RICHARD (1813-1883). A great musical composer; born at Leipzig. His prin-

cipal works were *Rienzi*, *The Flying Dutchman*, *Tannhäuser*, *Lohengrin*, *Tristan und Isolde*, *The Mastersingers of Nurnberg*, and the *Ring of the Nibelungen*, the composition of which occupied 25 years. This last was performed in 1876, at Baireuth, in presence of the emperor of Germany and the principal musical artists of the world. *Parsifal* was his last work.

WALKER, FREDERICK (1840-1875). An English painter; born in London; illustrated Thackeray's *Philip*; has been called the "creator of the English Renaissance"; noted for his quiet harmonies. His "Harbour of Refuge" and "Vagrants" are in the Tate Gallery.

WALKER, HORATIO (1858-). An American painter; born at Listowel, Ontario, Canada; won many prizes with his landscapes and farm incidents among the Canadian farmers. His "Ice Cutters" and "A Milkyard" are notable examples of his work; elected N. A. in 1891; awarded the gold medal of honor of the Philadelphia Academy of Fine Arts in 1906; self-taught.

WALLACE, WILLIAM VINCENT (1814-1865). An Irish composer; born at Waterford; leader of an orchestra in Dublin; went to Australia; brought out his successful opera, *Maritana*, on his return in 1845; wrote also *Matilda of Hungary*, *Lurline*, *The Amber Witch*, and *The Desert Flower*.

WALLACK, JAMES WILLIAM (about 1795-1864). An Anglo-American actor; born in London; acted in Drury Lane and supported Edmund Kean; appeared as Macbeth in New York (1818) and settled there about 1850; opened Wallack's Theatre at Broadway and Broome Street (1852) and the theater at Broadway and Thirteenth Street in 1861; noted for such parts as Don César de Bazan.

WALLACK, JOHN JOHNSTONE, or "LESTER" WALLACK (1819-1888). An American actor; born in New York; son of James William Wallack; educated in England and became a lieutenant in the British army in 1842; resigned in 1844 and became an actor; appeared in New York as Sir Charles Coldstream in *Used Up* in 1847; acted leading parts in his father's theater (1852-1864) and assumed proprietorship of it on his father's death; opened the present "Wallack's" at Thirtieth street and Broadway.

WALTER, THOMAS USTICK (1804-1887). An American architect; born in Philadelphia; designed Girard College, St. George's Hall, Philadelphia Savings Bank, Chester County Bank, the Biddle and Cowperthwaite residences in Philadelphia and vicinity; superintended the enlargement of the Capitol at Washington and completed the Post Office and the Treasury building; president of the American Institute of Architects (1876).

WAPPERS, EGIDE CHARLES GUSTAVE (1803-1874). A Belgian painter; born at Antwerp; professor at the Academy (1832) and director (1840-1853); president of the Belgian National Museum (1846-1853). Among his works are "Dévouement du Bourgmestre de Leyde," "Le Christ au tombeau," "Scènes des journées de septembre," "L'adieu de Charles I. à ses enfants," "La tentation de Saint Antoine," "Geneviève de Brabant," and "Christophe Colomb."

SURRENDER OF BREDA. BY VELASQUEZ.
In the Prado at Madrid.

WARD, EDGAR MELVILLE (1839-). An American painter; born in Urbana, Ohio; studied in New York and under Cabanel in Paris; taught the life class in the National Academy (1885); elected N. A. in 1883. His "The Coppersmith" is in the Metropolitan Museum in New York.

WARD, EDWARD MATTHEW (1816-1879). An English painter; born in London; studied there, in Rome, and under Cornelius at Munich; painted "Cimabue and Giotto," "Doctor Johnson in Lord Chesterfield's Ante-Room," "South Sea Bubble," "Marie Antoinette Parting with the Dauphin," and "Marie Antoinette Listening to the Act of Accusation"; elected R. A. in 1855.

WARD, JOHN QUINCY ADAMS (1830-1910). An American sculptor; born at Urbana, Ohio; studied under Browne in Brooklyn, whom he assisted with his equestrian statue of Washington in Union Square in New York. His "Indian Hunter" was the first statue placed in Central Park. His "Seventh Regiment Citi-

zen-Soldier,'' ''Shakespeare,'' and ''The Pilgrim'' are also in Central Park. ''The Freedman'' and ''The Good Samaritan'' are in Boston. His ''Washington'' on the Sub-treasury in Wall Street, ''Henry Ward Beecher'' in City Hall Park in Brooklyn, ''Commodore Perry'' in Newport, R. I., and ''Horace Greeley'' in front of the Tribune Building are noted examples of his work; elected N. A. in 1863.

WARFIELD, DAVID (1866-). An American actor; born in San Francisco; settled in New York in 1890; played Irish characters and Jewish representations, of which his best was Solomon Levi in Belasco's *Auctioneer*; created the part of Herr Anton von Barwig in Klein's *The Music Master* in 1904; and played the leading rôle in Belasco's *A Grand Army Man* in 1907.

WARNER, OLIN LEVY (1844-1896). An American sculptor; born at West Suffield, Conn.; studied in Paris. Among his works are a high relief portrait of Edwin Forrest; colossal heads of Michelangelo, Rembrandt, Raphael, Titian, and Velasquez on the Art Building at the World's Fair of 1893; his nude figure ''Diana''; head of Daniel Cottier; ''William Lloyd Garrison'' at Boston; and a fountain in Portland, Ore.

CONQUERORS. BY VERESTCHAGIN.
In the Louvre.

WARREN, SAMUEL PROWSE (1841-). An American organist; born in Montreal, Canada; studied in Berlin; one of the leading organists of the country; wrote much church music.

WATERMAN, MARCUS (1834-). An American artist; born in Providence, R. I.; studied in Boston; lived in New York; settled in Boston (1874); latterly lived in Italy. His scenes are chiefly Oriental, noted for brilliant sunlight effects. Among them are ''Roc's Egg,'' ''The Merchant and the Genius,'' and many American forest scenes.

WATTEAU (*wat-toe*), **ANTOINE** (1684-1721). A distinguished French painter; born at Valenciennes. His ''Fêtes Galantes'' and ''Fêtes Champêtres,'' decorations on the Louvre; and his fine collections in the Louvre, Sans Souci, in Berlin, and in London are noted for the sunlit colors and great purity of tone.

WATTS, GEORGE FREDERICK (1820-1904). An eminent English painter; born in London; is distinguished as a painter at once of historical subjects, ideal subjects, and portraits; did one of the frescoes in the Poets' Hall of the Houses of Parliament and the cartoon of ''Caractacus Led in Triumph Through the Streets of Rome''; has, as a ''poet painter,'' by his ''Love and Death,'' ''Hope,'' and ''Orpheus and Eurydice,'' achieved a world-wide fame. He was twice offered a baronetcy, but on both occasions he declined.

WEBER, KARL MARIA FRIEDRICH ERNST VON, BARON (1786-1826). A German musical composer; born at Eutin, near Lübeck. He was the founder of German romantic opera and one of the most brilliant pianists of his day. His best known works are *Der Freischütz, Euryanthe, Oberon, Preciosa,* and masses, cantatas, songs, symphonies, overtures, concertos, and sonatas.

WEIR, HARRISON WILLIAM (1824-1906). An English artist; born at Lewes; an expert animal painter and draughtsman. Among his works are ''The Dead Shot,'' ''Startled,'' ''The Forester,'' ''A Servant of All Work,'' ''The Christmas Carol,'' illustrations for Routledge's *Natural History,* ''Our Cats and All About Them,'' ''Poultry and All About Them,'' and many other works.

WEIR, JOHN FERGUSON (1841-). An American sculptor, painter, and author; born at West Point, N. Y.; director of the School of Fine Arts at Yale University (1869). Among his works are statues of President Woolsey and Professor Silliman. His chief paintings are ''The Gun Foundry,'' ''Forging the Shaft,'' ''Tapping the Furnace,'' and ''An Artist's Studio.'' His books include *The Way, the Nature, and the Means of Revelation*; *John Trumbull and His Works*; and *Human Destiny in the Light of Revelation.*

WEIR, JULIAN ALDEN (1852-). An American painter; born at West Point, N. Y.; studied under Gérôme in Paris; elected N. A. in 1886; won the Hart prize of $2000 with his ''Idle Hours'' (1886) and a gold medal at St. Louis in 1904.

WEIR, ROBERT WALTER (1803-1889). An American painter; born in New Rochelle, N. Y.; studied under Jarvis in New York and with Benvenuti in Florence; professor of drawing at West Point for over 40 years. His works include ''The Embarkment of the Pilgrims'' in Washington at the Capitol, ''Columbus before the Council of Salamanca,'' ''Taking the Veil,'' several portraits, and the allegory ''Peace and War''; elected N. A. in 1829; father of the painters John Ferguson Weir and Julian Alden Weir.

WEST, BENJAMIN (1738-1820). An American painter; born in Springfield, Pa., of Quaker parents. He went to Rome in 1760, and proceeded to England in 1763, where he made his permanent residence. His ''Death of General Wolfe'' was among the first of his productions that attracted public notice; president of the Royal Academy (1792) to succeed Reynolds. His ''Christ Healing the Sick'' and ''Penn's Treaty with the Indians'' are in Philadelphia; ''Kingdom'' is in the Boston Museum; and ''Triumph of Love'' and ''Hagar and Ishmael'' are in the Metropolitan in New York.

WESTMACOTT, SIR RICHARD (1775-1856). An English sculptor; born in London; studied at Rome under Canova. He executed statues of Pitt, Addison, and others, and a number of monuments in Westminster

Abbey and St. Paul's. His latest work was the sculptured pediment groups of the British Museum.

WHISTLER, JAMES ABBOTT McNEILL (1834-1903). An American painter; born in Lowell, Mass.;

Sir Galahad. By Watts.

studied for a time at the United States Military Academy; went to Paris and afterward settled in London. The finest of his oil pictures are "The Artist's Mother —an Arrangement in Black and Gray," the "Portrait of Thomas Carlyle," and the "Portrait of Miss Alexander—Harmony in Gray and Green." Whistler's art is original and individual.

Portrait of His Mother. By Whistler.

WHITE, STANFORD (1853-1906). An American architect; son of Richard Grant White; studied in Europe (1873-1880); formed a partnership with Charles F. McKim and William R. Mead (1881); able to adapt Old World decorative effects to New World conditions; designed the Giralda Tower for Madison Square Garden, the New York University buildings, the New York Washington Arch, the University of Virginia buildings, the Century and Metropolitan Clubs, and the new Madison Square Presbyterian Church.

Washington Memorial Arch, New York.

WILLARD, EDWARD S. (1853-). An English actor; born at Weymouth; acted in London in *The Lights o' London, The Silver King, Hoodman Blind, The Romany Rye,* and *Jim the Penman*; managed the Shaftesbury Theatre and produced *The Middleman* and *Judah* (1889-1890); came to the United States in 1890 in *The Professor's Love Story*; managed the St. James's Theatre and produced *The Cardinal* in 1903.

WREN, SIR CHRISTOPHER (1632-1723). The greatest of English architects; born in East Knoyle, Wiltshire. He began to rebuild St. Paul's in 1675, and saw the last stone laid by his son 35 years afterward. He designed the modern part of the palace of Hampton Court, the library of Trinity College, Cambridge, and the hospitals of Chelsea and Greenwich, the churches of St. Stephen's, Walbrook; St. Mary-le-bow, Cheapside; St. Michael, Cornhill; and St. Bride, Fleet street; as also the campanile of Christ Church, Oxford, and Marlborough House, Pall Mall; sat in Parliament (1685-1700).

WYANT, ALEXANDER H. (1836-1892). An American painter; born at Port Washington, Ohio; studied with George Inness in Paris, where he was influenced by Corot and Dupré, and in Düsseldorf under Hans Gude; settled in New York in 1864; elected N. A. in 1869. His works in the Metropolitan Museum in New York include "Looking toward the Sea," "Broad, Silent Valley," and "A View in County Kerry."

Portrait of Whistler. By W. M. Chase.

MUSIC.

Musical expression may be broadly distinguished as rhythmic and melodic. These two principles are essentially distinct, and in the early stages of music are often independent of each other. The difference of principle, however, between the rhythmic and the melodic quality is apparent even in the most advanced stages of the art, in the symphony as in the polka.

Among primitive races, music is merely the accompaniment to dancing, hence rhythm alone is more usually encountered, while melody and harmony are reduced to their simplest forms.

The earliest system of which we have any exact record was devised by the Greeks. The Phœnicians, Egyptians, and Hebrews do not seem to have evolved any distinctive national style. The Greeks were the first to conceive of music as an independent art, and they formulated a scale system based on a knowledge of acoustic laws. The Greek system was the parent of Roman music and the precursor of that of the early Christians, while the Greek play was the prototype of the modern opera. The ritual of the Christian Church was originally rendered in the Ambrosian and Gregorian forms ("Plain Song"), which, though allied to pagan melody, were reminiscent of the liturgy of the Temple at Jerusalem.

The next phase (twelfth to sixteenth centuries) was the contrapuntal unaccompanied choruses founded on the Gregorian key and melodic system. It is noteworthy that not until the definite appearance of Christian church music was any advance made in the direction of harmony. The first steps at improving melodic music were made by singing melodies simultaneously at different pitches. Towards the end of the sixteenth century, as secular life grew more independent of ecclesiastical influences, harmony became the basis of musical design, and, ultimately, the means of the sublimest and most perfect expression of which the art is capable. Music began to develop into manifold types; instrumental music assumed a different aspect from choral music, and secular from sacred vocal music. Then, as the present system of scales became understood, the old devices were adapted to the newer method. The Reformation wrought a change in music no less than in religion, and its impulse and vigor are reflected in the masterpieces of Bach and Handel.

With these great masters the polyphonic period culminated. Secular influences began to predominate; no longer was choral effect the prime motive of the art; instrumental music for its own sake was cultivated; counterpoint and vocal parts were relegated to the background, and melodic progressions became the first consideration. The science of orchestration came into being, for in the time of Bach orchestration in the modern sense did not exist, neither was there any uniform standard by which to regulate the number or grouping of orchestral instruments. The constant blending and interchange of timbres, characteristic of a modern orchestra, was entirely unknown. The instrumentation would frequently remain unaltered during an entire number, while it was not unusual for the players to exceed the number of voices. The works of the old composers have therefore had to be rescored to meet the requirements of modern orchestras. The first attempts to compose purely orchestral music were for the symphonies or overtures of operas. These were primarily written for stringed instruments, with occasionally trumpet solos. One of the most noteworthy names in the early history of orchestration is that of the Bohemian violinist, Stamitz, whose orchestra at the German court of Mannheim became, under his leadership, the finest in Europe. Meanwhile the Italians developed the resources of the violin and the style of music best suited to it. Other groups of musicians in Germany, France, England, and Italy made similar progress with the harpsichord.

Though the art had blossomed forth in numerous forms, their characteristics were not clearly defined; opera and symphony, sonata and church music, were fashioned on like principles, indistinct in style, indefinite and conventional in construction. When greater resources were at the disposal of the composer, each form gained in distinctness and vitality. Still the differentiation of forms continued, each requiring different treatment. The opera expanded into the grand, the comic, the buffa, the seria, and various other types. Pianoforte music came to comprise lyrics of all kinds—sonatas, fugues, capriccios, scherzos, nocturnes, dances, and other distinctive and national varieties.

A revolution in the musical world was created as a result of the visit of an Italian opera company to Paris in 1752. This struck a blow at the French grand opera, and the way was cleared for the reforms of Gluck (1714-1787). The opéra comique was a sign of the times—the shattering of conventions and the demand for naturalness.

The first great name connected with the development of the sonata form was that of Haydn (1732-1809), who raised the symphony from weakness to strength and dignity. The greatness of Mozart (1756-1791) was most apparent in the symphony and its allied forms. He is regarded as the most perfect exponent of the classic idea in music. With the towering figure of Beethoven (1770-1827) classical music reached its zenith. He marks the transition from the eighteenth to the nineteenth century, and the dawn of the romantic era. The advance in the art of orchestration is apparent upon comparing the scores of Beethoven's larger symphonies with those of Mozart; although Beethoven never allows his sense of color to dwarf his greatness as a designer. The next important movement is the rise of a German school of opera. In spite, however, of the impetus given by Weber and Spohr, Teutonic opera was not a truly national product till the triumph of the works of Wagner. Schubert (1797-1828) stands unrivaled as a writer of *lieder*. His was essentially a lyric genius.

We pass now to more modern times, and to composers whose names we have barely space to mention, though their works live on in our lives and memories: Mendelssohn, the writer of æsthetic melodies; Chopin, the most famous composer for the piano; Berlioz, the greatest composer of France and the founder of the program school of music; Schumann, with whom the romantic ideal attained self-consciousness; Liszt, one of the most prolific composers of modern times; Brahms, the greatest symphonist since Beethoven; Grieg, one of the best loved of mod-

ern composers; and Dvorak, a master of orchestration. The central figure in German music to-day is Richard Strauss (1864), whose symphonic poems almost exhaust the powers of musical symbolism. Verdi (1813-1901) is the greatest composer that Italy has produced, and was the one opera composer whose brilliancy was not dimmed by Wagner's splendor.

In England and America musical culture was never more vigorous than it is to-day. The names of Sullivan, Stanford, Cowen, Parry, and Elgar are conspicuous among those of the English composers of our own times. In artistic music the United States has contributed works rich in promise. Paine, Buck, Parker, MacDowell, Chadwick, Foote, Whiting, and others are names sufficient to inspire confidence, though no truly representative composer has yet arisen.

SCHOOLS OF MUSIC.

OLD FRENCH SCHOOL (about 1100-1350). This school is noted for the invention of the *Fauxbourdon* (a progression of voices in sixths and thirds) and the *Discant* (contrary motion of voices). Chief musicians: De Garlande, Léonin, Franko of Paris, De Machault, De Muris, Pérotin, and De Vitry.

SCHOOL OF THE NETHERLANDS (about 1450-1600). This covers four distinct periods: (*a*) that led by Okeghem and his successors, Compère, Brumel, Hobrecht, Jannequin, and Tinctor, all of whose writings were characterized by artificiality; (*b*) the period of Josquin Deprès, Agricola, and Mouton, whose works show greater symmetry of form, but are none the less artificial; (*c*) a period of reaction in favor of a more natural style of composition. The most prominent masters are Arcadelt, Gombert, Goudimel, Willaert, and Van Rore; (*d*) a period famous for the rise of instrumental music. The school of the Netherlands culminated in Orlando di Lasso; the other masters of the period are De Monte and Pevernage.

OLD ENGLISH SCHOOL (about 1220-1600). To this school is credited the earliest specimen of polyphonic composition, viz., the celebrated canon, *Sumer is icumen in* (1226). The earlier composers are Johnson, Merbecke, Redford, and Tye. During the later period many important choral works and madrigals were written by Byrd, Farrant, Gibbons, and Tallis.

SCHOOL OF VENICE (1527-1612). Founded by Willaert. This school was the first to produce vocal works with instrumental accompaniment. Chief composers: Willaert, A. Gabrieli, G. Gabrieli, Merulo, Van Rore, and Zarlino.

SCHOOL OF ROME (1535-1674). Founded by Goudimel about 1535. The Roman school gave greater latitude to individual voices, and originated the oratorio. Chief musicians: Goudimel, Anerio, Allegri, Animuccia, Frescobaldi, Carissimi, Festa, Nanini, and Palestrina.

SCHOOL OF NAPLES (1675-1757). The Neapolitans cultivated the overture, and introduced the aria, besides choruses, duets, etc. Chief musicians: Durante, Leo, A. Scarlatti, D. Scarlatti, Stradella, and Logroscino.

SCHOOL OF GERMAN SINGSPIEL (about 1630-1800). The *Singspiel* was established by Hiller on the basis of the folk song, and eventually developed into a national German opera. The musicians of this school were Keiser, Handel, Kusser, Dittersdorf, Winter, Weigl, Schenck, Strungk, Mattheson, and Telemann. Other German composers favored the Italian opera, notably Doles, Hasse, Naumann, and Graun.

CLASSIC MASTERS (about 1700-1827). In J. S. Bach the *passion* and the *instrumental fugue* reached their highest perfection. His works also mark the beginning of the homophonic-harmonic period. With Handel the *oratorio* and the *vocal fugue* attained their greatest development, and he became the founder of the new English school. Gluck reformed the opera and developed orchestration. Haydn perfected the sonata and became "the father of modern instrumental music." Mozart created no new forms, but impressed his genius on every style he handled. Beethoven introduced the *scherzo* in place of the *minuet* of the symphony. Schubert followed in the steps of Beethoven in the domain of instrumental music. He was the creator of the *Kunstlied* (art-song).

FRENCH GRAND OPERA (1774-1864). The distinguishing features are the absence of spoken dialogue, the prevalence of tragic themes, excessive orchestration, elaborate finales, and the introduction of a ballet. Chief composers: Berton, Gluck, Gossec, Cherubini, Lesueur, Halévy, Meyerbeer, Rossini, and Spontini.

FRENCH OPERA COMIQUE (about 1760-1870). Its composition is generally unconventional, more truthful, and aims less at mere musical effect. Principal masters: Auber, Cherubini, Grétry, Halévy, Herold, Isouard, Bizet, Delibes, Boieldieu, Méhul, Monsigny, Philidor, and A. Thomas.

SCHOOL OF BEL CANTO (1813-1868). The charm of melody and the display of vocal art are the characteristics of this school. The three greatest exponents are Rossini, Bellini, and Donizetti, while of lesser rank are Pacini, Generali, and Mercadante.

GERMAN ROMANTIC SCHOOL (1818-1868). Orchestral tone-coloring was greatly developed and a preference was shown for dissonances, while music generally became more emotional and intense. Among dramatic composers are Spohr, Weber, Marschner, Lortzing, Kretschmer, Götz, Nessler, and Brüll; while among the great writers of choral and instrumental works are Schumann, Spohr, and Mendelssohn.

WAGNER AND LISZT (1843-1897). Wagner effected great reforms in dramatic composition; he maintained that the function of music was to illustrate and intensify the text. By applying Wagner's idea of descriptive music to instrumental music Liszt became an exponent of "program music." He originated the symphony poem and largely developed pianoforte technique. With Berlioz and Wagner he established a new school of interpretative conducting.

NEO-GERMAN SCHOOL (1847-). At first the influence of Liszt predominated, but in time Wagner's titanic genius gave rise to a host of imitators, none of whom, however, could rival the master's skill. Possibly the only great composer among them is Richard Strauss.

MODERN ITALIAN SCHOOL (1851-). The greatest figure in the history of modern Italian music is Verdi, who raised the Italian opera to its highest level. Among the operatic composers of this school are Ponchielli, Boito, Faccio, Marchetti, Coronaro, Smareglia, Mascagni, and Puccini. Chief choral instrumental composers; Pinelli, Sgambati, Cesi, Grazzini, Mancinelli, Martucci, Franchetti, and Perosi.

MODERN FRENCH SCHOOL (1830-). The influence of German music combined with the originality of the French composers themselves has produced a French school of great vigor and excellence. Instrumental composers: Chaminade, Chausson, Bizet, Delibes, David, Franck, Godard, D'Indy, Lalo, Halm, and Saint-Saëns. Dramatic composers: Gounod, Bizet, Saint-Saëns, Chabrier, Massé, Bruneau, and Massenet.

POLISH SCHOOL (1830-). Its history is bound up with the writings of Chopin, who was one of the creators of a new school of pianoforte playing. Other Polish musicians are Dobrzynski, Kurpinski, Moszkowski, and X. and Ph. Scharwenka.

RUSSIAN SCHOOL (1836-). The distinguishing features are strength and variety of rhythm. Chief masters: Glinka, Rubinstein, Bortnianski, Verstowski, Dargomyszki, Seroff, Borodin, Cui, Balakirev, Mussorgski, Rimski-Korsakow, Arenski, Glasunoff, and Tschaikowsky.

SCANDINAVIAN SCHOOL (1840-). The main features are an emphasis of rhythm and employment of dissonances. Principal composers: (Norway) Grieg, Kjerulf, Nordraak, Sinding, and Svendsen; (Denmark) Berggren, Hartmann, Gade, and Enna; (Sweden) Hallstroem, Hallén, Sjörgren, and Södermann.

MODERN ENGLISH SCHOOL (1830-). In light opera the works of Sullivan are noteworthy as having placed this form of composition upon a secure basis. In grand opera no prominent work has yet been produced. The best efforts of this school have been made in choral music. No distinctive national style has been developed, but the compositions are marked by skillful technique and mastery of form. Leading composers: Balfe, Barnett, Bishop, Benedict, Stanford, Sullivan, and Wallace in dramatic music; Barnby, Stainer, Bennett, Parry, Cowen, Coleridge-Taylor, Costa, Mackenzie, and Elgar in instrumental and choral music.

AMERICAN SCHOOL (1880-). Strictly speaking there is no American school which possesses any national or distinctive trait. In the works of the chief composers the influence of foreign and particularly German music is apparent. Works of high attainment have been produced by Paine, Bird, Gilchrist, Foote, Chadwick, Klein, MacDowell, Van der Stucken, Horatio William Parker, Damrosch, and Mrs. H. H. A. Beach.

SOME FAMOUS HYMNS AND THEIR TUNES.

ABIDE WITH ME. Written by Rev. Henry Francis Lyte (1793-1847) and handed in manuscript with the music to his congregation at Lower Brixham, Devonshire, on the occasion of his last service there. Henry Ward Beecher introduced it to American Congregationalists in 1855. The tune now most used was written by Dr. William Henry Monk in 1861.

ALL GLORY, LAUD, AND HONOR. Composed in 820 by Theodulph, Bishop of Orleans, while imprisoned in the cloister of Anjou by Louis le Debonnaire, son of Charlemagne. Used as a processional in both Catholic and Protestant churches. Translated by Rev. J. M. Neale (1818-1866). The most popular tune was composed by Melchior Teschner, a Prussian composer who lived about 1613.

ALL HAIL THE POWER OF JESUS' NAME. Written by Rev. Edward Perronet (1721-1792), a close friend of John Wesley. Dr. Rippon added the last stanza. The tune "Old Coronation" was composed by Oliver Holden, a carpenter of Shirley, Mass. (1765-1844). The little pipe organ upon which he struck the first notes is in the historical rooms of the Old State House in Boston.

ALL PRAISE TO THEE, ETERNAL LORD. Variously credited to Gregory the Great (sixth century) and to an unknown writer of the ninth century. The German form—Gelobet seist du Jesu Christ—has been credited in part to Luther. The tune "Weimar" is by Karl Philip Emanuel Bach, son of Sebastian (1714-1788).

A MIGHTY FORTRESS IS OUR GOD or **EIN FESTE BURG IST UNSER GOTT.** Written in German by Luther (1483-1546); translated into English by Rev. Frederick Henry Hedge (1805-1890), formerly of the Unitarian Church of Bangor, Me. The tune was composed by Luther; that of the English version is by Sebastian Bach.

DOXOLOGIES. (1) "Be Thou, O God, Exalted High" is attributed to Nahum Tate (1652-1715), who collaborated with Rev. Nicholas Brady (1659-1726) in the preparation of a psalter in which it appeared. (2) "Praise God from Whom All Blessings Flow," by Rev. Thomas Ken (1637-1711). (3) "To God the Father, God the Son" was composed probably by Dr. Edwin F. Hatfield (1807-1883). The tune of these is "Old Hundred," said to have been composed by Luther; others say Louis Bourgeois; but the weight of evidence favors Guillaume le Franc, William Franck, or William the Frenchman of Geneva (1541), who died in 1570.

ETERNAL FATHER, STRONG TO SAVE. Written in 1860 by William Whiting; a translation of a Latin hymn. Whiting (1825-1878) was master of Winchester College choir. The tune "Melita" was composed in 1861 by Rev. John B. Dykes. A favorite hymn "for those at sea."

FOREVER WITH THE LORD. Written by James Montgomery (1771-1854). The tunes "Mornington," by Garrett Colley Wellesley, Earl of Mornington (1735-1781), and "Forever with the Lord," by I. B. Woodbury, are the best known of the many to which this hymn has been sung.

FROM GREENLAND'S ICY MOUNTAINS. Written in 1819 by Reginald Heber for a missionary meeting. The tune is by Lowell Mason.

GLORY TO THEE, MY GOD, THIS NIGHT, or **TALLIS' EVENING HYMN.** Bishop Ken's evening hymn prayer, from a *Prayer Manual* published for the use of students in Winchester College. The tune was composed by Thomas Tallis, organist to Queen Elizabeth (1520-1585).

HARK! HARK! MY SOUL. Written by Frederick William Faber. The tunes were composed by John B. Dykes and Henry Smart.

HOLY, HOLY, HOLY, LORD GOD ALMIGHTY. Written by the Right Reverend Reginald Heber, Bishop of Calcutta (1783-1826). The tune was composed by Rev. John Bacchus Dykes (1823-1876).

JERUSALEM THE GOLDEN. A translation by Dr. John Mason Neale of a part of Bernard of Cluny's "De Contemptu Mundi," which was written about 1100. The music was written by Alexander Ewing, a paymaster in the English army (1830-1895).

JESUS, LOVER OF MY SOUL. The best known and best loved of Charles Wesley's hymns. The tune "Refuge" was composed by Joseph P. Holbrook, and "Whitman" by Lowell Mason.

LEAD, KINDLY LIGHT. Written by John Henry Newman (1801-1890), afterwards Cardinal Newman. The tune "Lux Benigna" was composed by Rev. Dr. John B. Dykes in 1865.

MAGNIFICAT. Appears in ritual form in the liturgies of the fourth and fifth centuries. A favorite subject with composers of all nations and ages; but the "Magnificat" of Handel is the greatest (1685-1759); though that by Smart is highly esteemed.

MAJESTIC SWEETNESS SITS ENTHRONED. Written by Rev. Samuel Bennett, an English Baptist minister (1727-1795). The tune "Ortonville" was composed by Thomas Hastings (in 1830), author of "Toplady."

NEARER, MY GOD, TO THEE. Written by Mrs. Sarah Flower Adams (1805-1848) in 1840. The author was a Unitarian and the hymn is regarded as an Old Testament psalm. The tune "Horbury" was composed by Rev. John B. Dykes, "St. Edmund" by Sir Arthur Sullivan, and "Bethany" by Lowell Mason.

O COME, ALL YE FAITHFUL, or **ADESTE FIDELES.** By some believed to have been written by St. Bonaventura, Bishop of Albano (born 1221). The English version is by Rev. Frederick Oakely (1808-1880), and another by Rev. Edward Caswall (1814-1878). The tune is the "Portuguese Hymn," by Simao Portogallo of Lisbon (1763-1830).

O LITTLE TOWN OF BETHLEHEM. Written by Phillips Brooks, Bishop of Massachusetts (1835-1893), in 1868. The tune "Bethlehem" was composed by J. Barnby; the first tune, "St. Louis," was by Mr. Redner, organist of Holy Trinity in Philadelphia.

ONWARD, CHRISTIAN SOLDIERS. Written by Rev. Sabine Baring-Gould (1834-). The tune was composed by Sir Arthur Seymour Sullivan (1842-1900).

O WORSHIP THE KING ALL GLORIOUS ABOVE. Written by Sir Robert Grant (1785-1838), afterward governor of Bombay. The tune to which the hymn is most frequently sung is Haydn's "Lyons."

ROCK OF AGES, CLEFT FOR ME. Written by Augustus Montagu Toplady (1740-1778); an almost universal hymn. The tune was composed by Dr. Thomas Hastings (1784-1872) in 1830.

SUN OF MY SOUL, MY SAVIOUR DEAR. Written by Rev. John Keble (1792-1866). The tune "Hursley" was arranged by William Henry Monk (born 1823) from a German choral by Peter Ritter (1760-1846).

TE DEUM LAUDAMUS. Composed by Ambrose, Bishop of Milan, in 387. First sung in English by Bishop Ridley at Hearne Church. The standard anthem of Christian praise. One of the best modern choral renderings of the anthem is the tune by the English composer, Henry Smart (1813-1879).

THE GOD OF ABRAHAM PRAISE. Written by Thomas Olivers (1725-1799), a Welshman converted by Whitefield at Bristol. The tune "Leoni" was heard, it is said, by Olivers as it was sung by Meyer Lyon, the noted Jewish musician, and he adapted the hymn to the tune.

THE LORD DESCENDED FROM ABOVE. Composed by Thomas Sternhold, Groom of the Robes to Henry VIII. and Edward VI., author of a psalter published in 1562, 13 years after his death (1549). The tune "Nottingham," or "St. Magnus," was composed by Jeremiah Clark of London (1670-1707).

Famous Oratorios.

Armes, P.	Hezekiah (1877); St. John the Evangelist (1881); St. Barnabas (1891).
Arne, Abe	Abel (1755); Judith (1764).
Arnold, S.	Abimelech (1768); Prodigal Son (1767).
Atterbury, L.	Goliath (1773).
Bach	Christmas Oratorio (1734); St. Matthew Passion (1729); St. John Passion (1720).
Barnby	Rebekah (1870).
Barnett, J. F.	The Raising of Lazarus (1876).
Beethoven	Christus am Oelberg (1799).
Benedict	St. Cecilia (1866); St. Peter (1870).
Bennett	The Woman of Samaria (1867).
Berlioz	L' Enfance de Christ (1854).
Brahms	The German Requiem (1868).
Carissimi, G. (*c.* 1604-1674).	Jephte; Baltazar; Jonas.
Cavaliere	La Rappresentazione dell' Anima ed il Corpo (1600, first oratorio).
Cimarosa, D.	Il Sacrificio d' Abramo (1786); L' Olimpiade (1787).
Costa	Eli (1855); Naaman (1864).
Cowen, F. H.	The Deluge (1878); Ruth (1887).
Crotch	Palestine (1812); The Captivity of Judah (1834).
Cusins	Gideon (1871).
David, F. C.	Moïse au Sinai (1846).
Dvorák	St. Ludmilla (1886).
Elgar, E.	The Light of Life (1896); The Dream of Gerontius (1900).
Goldschmidt, O.	Ruth (1867).
Gounod	La Redemption (1882); Mors et Vita (1885).
Graun	Der Tod Jesu (1755).
Handel	Israel in Egypt (1738); Il Trionfo del Tempo (1707); Esther (1720); Saul (1738); The Messiah (1741); Samson (1742); Joseph (1743); Judas Maccabaeus (1746); Occasional (1746); Theodora (1749).
Haydn	The Creation (1796-1798).
Hiller, F.	Die Zerstörung Jerusalems (1840); Saul (1858).
Horsley, C. E.	Gideon (1860); David; Joseph.
Jenkins, D.	The Legend of St. David (1894).
Kiel, F.	Christmas (1874).
Klein, B.	Jephthah (1828); David (1830); Hiob (1820).
Leslie, H. D.	Immanuel (1853); Judith (1858).
Liszt	Die Legende von der heiligen Elisabeth (1864); Christus (1866).
Loewe	Die Festzeiten (1829); Die Zerstörung Jerusalems (1829).
Loreto, V.	St. Ignatius Loyola (1622).
Macfarren	St. John the Baptist (1873).
Mackenzie	The Rose of Sharon (1884).
Marx, A. B.	Moses (1850).
Massenet	Marie-Madeleine (1873); Eve (1875); La Vierge (1880).
Mendelssohn	St. Paul (1836); Elijah (1838-1846); Christus (1844-1847).
Meyerbeer	Gott und die Natur (1811).
Molique, B.	Abraham (1860).
Neukomm	Mount Sinai (1830); David (1834).
Ouseley	The Martyrdom of St. Polycarp (1855); Hagar (1873).
Paine	St. Peter (1873).
Parry, C. H.	Judith (1888); Job (1892); King Saul (1894).
Parry, Jos.	Saul of Tarsus (1892); Emmanuel (1880).
Pergolesi	San Guglielmo d' Aquitania (1731)
Pierson	Jersusalem (1852).
Porpora (1686-*c.* 1766).	La Martiria di Santa Eugenia.
Rheinthalen	Jephta (1856).
Rossini	Stabat Mater (1832-1841).
Rubinstein	Der Thurm zu Babel (1870); Das verlorene Paradies (1876); Moses (1887); Christus (1895).
Saint-Saëns	Noël (1858).
Scarlatti, A. (1659-1725).	Dolori di Maria; Sacrifizio d' Abramo.
Schubert	Lazarus (1828).
Schumann	Paradise and the Peri (1843).
Schütz, H. (1585-1672).	Resurrection; Passion.
Spohr	Last Judgment (1812); Calvary (1833); Fall of Babylon (1840).
Stainer, J.	St. Mary Magdalen (1883); The Crucifixion (1887).
Stanford	The Resurrection (1875); The Three Holy Children (1885).
Sullivan	The Prodigal Son (1869); The Light of the World (1873).
Verdi	Manzoni Requiem (1874).
Winter	Pilgrimage to Calvary (1792).
Zingarelli, N.	The Passion (1787); The Flight into Egypt (1837).

Famous Operas.

Adam	Cagliostro (1844).
Auber	La Barcarolle (1845); L'Enfant prodigue (1850).
Barnett	Fair Rosamond (1837).
Beethoven	Fidelio (1805).
Bellini	I Puritani (1835).
Boieldieu	Le Calife de Bagdad (1800).
Boito	Mefistofele (1868).
Buononcini	Griselda (1722).
Charpentier	Louise (1900).
Cherubini	Elisa (1794); Anacréon (1803); Ali Baba (1833).
Cornelius, P.	Der Barbier von Bagdad (1858).
Dalayrac	Camille (1791).
Dargomyzhsky	Esmeralda (1847).
Debussy	Pelléas et Melisande (1902).
Donizetti	Belisario (1836); Don Pasquale (1843).
Flotow	Rob Roy (1837).
Freschi	Berenice (1680).
Gluck	Iphigénie en Aulide (1774); Armida (1777); Echo et Narcisse (1779).
Goldmark	Queen of Sheba (1875); Merlin (1886) Götz von Berlichingen (1902).
Godard	Vivandière, La (1895).
Gounod	Philémon et Baucis (1860).
Grétry	Amphitryon (1780).
Hallén	Harald der Wiking (1881).
Handel	Rinaldo (1711); Riccardo (1727); Belshazzar (1745).
Hoffmann, E. T.	Undine (1816).
Hofmann, H.	Cartouche (1869).
Humperdinck, E.	Hänsel und Gretel (1893).
Jackson, W.	Lord of the Manor (1780).
Jommelli	Merope (1742).
Keiser	Ismene (1692); Circe (1734).
Lachner	Lorelei (1846).
Lecocq	L'Egyptienne (1890).
Leoncavallo	Pagliacci (1892).
Linley	Duenna (1776).
Litolff	Les Templiers (1886).
Lortzing	Czar und Zimmermann (1837); Hans Sachs (1840).
Lully	Bellérophon (1679); Proserpine (1680).
Macfarren	Robin Hood (1860).
Mackenzie	The Troubadour (1886).
Marschner	Der Vampyr (1828); Hans Heiling (1833); Adolph von Nassau (1843).
Mascagni	Cavalleria Rusticana (1890).
Massenet	Werther (1892).
Mehûl	Gabrielle d' Estrées (1806); Les Amazones (1811).
Meyerbeer	Robert le Diable (1831); Les Huguenots (1836); L'Etoile du nord (1854).
Mozart	Idomeneo, Re di Creta (1781); Le Nozze di Figaro (1786); Don Juan (1787); Cosi fan tutte (1790).
Nessler	Piper of Hameln.
Offenbach	Barbe-Bleue (1866); Bagatelle (1874).
Pepusch	Beggar's Opera (1728).
Pergolesi	Sallustia (1731).
Peri	Dafne (1597); Euridice (1600).
Piccini	Zenobia (1756).
Planquette	Chimes of Normandy.
Ponchielli	La Gioconda (1876).
Porpora	Ariadne (1733).
Puccini	Tosca (1900); Madame Butterfly (1904).
Purcell	Fairy Queen (1692).
Rameau	Castor et Pollux (1737).
Rossini	Il Barbiere di Siviglia (1816); Otello (1816).
Saint-Saëns	Etienne Marcel (1879).
Scarlatti, A.	La Principessa fedele (1707).
Schubert	Die Zwillingsbruder (1820); Rosamunde (1823).
Spohr	Der Berggeist (1825); Der Alchymist (1830).
Stradella	La Forza dell' Amor paterno (1678).
Strauss, Richard	Salome (1905).
Sullivan	Mikado, The (1885); Pinafore, H. M. S. (1878); Patience (1881).
Tschaikowsky	Mazeppa (1882); Iolanthe (1893).
Verdi	I Lombardi (1843); Ernani (1844); Rigoletto (1851); Il Trovatore (1853); La Traviata (1853); Aïda (1871); Otello (1887); Falstaff (1893).
Wagner	Der fliegende Holländer (1843); Tannhäuser (1845); Lohengrin (1850); Der Ring des Nibelungen; Meistersinger von Nürnberg (1868).
Weber	Abu Hassan (1811); Euryanthe (1823); Der Freischutz.

(See also Stories and Detailed Plots of the World's Greatest and most Popular Operas.)

STORIES AND DETAILED PLOTS OF THE WORLD'S GREATEST AND MOST POPULAR OPERAS.

Carmen.—An opera in four acts, by George Bizet, first produced at the Opéra Comique in Paris in 1875. Carmen, the lovely Spanish gipsy heroine, is adored by her people and has many suitors. She is betrothed to Don José, a Spanish brigadier, of whom she soon tires. Micaëla is also betrothed to Don José, but he has forgotten her in his love for Carmen. Micaëla, nevertheless, seeks him out, gives him her portrait, the blessing of her mother, and her betrothal kiss. Don José's infatuation for Carmen continues, and when she is arrested through a quarrel with one of her companions he secures her release. Don José offers to give up his rank and to join the gipsy band of smugglers. Upon his complete surrender Carmen's love cools and she transfers her affections to another, Escamille, a bull fighter. The two rivals quarrel and Carmen narrowly averts the murder of Escamille by Don José, who, seeing himself jilted, vows vengeance against Carmen. Micaëla follows Don José everywhere as a guardian angel, and by appeals to him to visit his dying mother, who is constantly asking to see him, succeeds in getting him to return home. The fourth and last act is at a bull fight, where Escamille is the hero. There is a meeting between Don José and Carmen outside the arena, at which he tries unsuccessfully to regain her love. She boldly declares her preference for Escamille, and in the madness of unrequited love Don José attempts to drag her off. But Carmen scornfully throws a ring, Don José's gift, on the ground and turns to the door of the arena. Don José overtakes her, and just as the trumpets blare forth the victory of Escamille in the bull fight, Don José stabs Carmen, and the victorious Escamille finds his lovely bride a corpse.

Cavalleria Rusticana, or Sicilian Rustic Chivalry.—An opera in one act, by Pietro Mascagni. It was composed in little more than a week and won a prize. Turrido, a young peasant, is betrothed to Lola. He goes away to military service. Upon his return he finds that Lola has married the wealthy carrier, Alfio. Turrido seeks consolation in the love of Santuzza, another young peasant girl. Lola cannot bear to think of her former lover transferring his affections, and she flirts with him. Santuzza's jealousy is aroused and she first complains to Turrido's mother. Santuzza pleads with Turrido himself as he is entering the church. Turrido is deaf to her entreaties and flings her from him. Santuzza then betrays Turrido to Alfio and tells him of the falseness of his wife. Alfio and Turrido meet in Lucia's tavern, where Alfio refuses to drink of Turrido's wine. They challenge one another, and after Turrido's repentance for his wronging of Santuzza he meets Alfio in the garden. A few minutes later his death is announced by the peasants and Santuzza falls in a swoon.

Faust, or Marguerite.—An opera in five acts, by Gounod, first presented in Paris in 1859. It is based upon Goethe's greatest drama, *Faust*. Faust, an old doctor, has spent his life in study and is discouraged by the little which a lifetime can give one of the vast field of knowledge. He is tired of life and wishes to die. Mephistopheles, the incarnation of the Evil One, appears to him and offers him life in a new form. Mephistopheles endows him with youth and beauty. At Easter Faust sees Marguerite and addresses her, but she is guarded by her brother Valentin. Marguerite is much impressed by the flattery of the handsome stranger and, during the absence of her brother on military service, Mephistopheles is able to introduce Faust to her by means of a fictitious message for her old aunt. The aunt is told by Mephistopheles that her husband has been slain in battle, and he pays court to her. Faust, in the meantime, wins the love of Marguerite. When Valentin returns he challenges Faust, and in the duel Mephistopheles directs the sword of Faust so that against his will he kills Valentin, who dies cursing his sister. Marguerite now shrinks from Faust; everybody shuns her. Alone and forsaken she seeks refuge in the church, where her conscience gives her no rest. Her reason gives way and she drowns her child. Faust loves Marguerite sincerely and Mephistopheles has exhausted every resource to deaden his conscience, but he cannot distract his mind from her. She has in the meantime been imprisoned and the executioner's axe awaits her. Faust, with Mephistopheles, visits her in prison and seeks to induce her to flee with him, but she shrinks from him while earnestly imploring God's pardon. Just as the bells are tolling for her execution she dies and her soul is borne aloft by angels. Mephistopheles, baffled, disappears into the earth.

La Figlia del Reggimento, or The Daughter of the Regiment.—A comic opera in two acts, by Donizetti, first produced in Paris in 1840. Mary, a vivandière, was found as a child and educated by Sulpico, a French sergeant, and became the pet and delight of the regiment. Tonio, a young Swiss, fell in love with her. The grenadiers believe him a spy and are about to hang him. Mary saves him by telling the soldiers that he saved her life when she was in danger of falling over a precipice. They pardon Tonio and permit him to join their company. When, later, Tonio has declared his love for Mary and the soldiers have agreed to give their consent, the marchesa di Maggioriveglio appears and, from a letter which was attached to Mary as a foundling, it is learned that she is the niece of the marchesa. The marchesa breaks off the match between her niece and a low-born Swiss and carries Mary off in grief at parting from her companions and her lover. She is very unhappy in the new home of her aunt and cannot forget her friends, the soldiers, nor Tonio. One day her regiment appeared in her town with Tonio promoted to its leader. He again asks her hand in marriage, but the marchesa rejects the suit. Tonio proposes flight, but the marchesa detects the plan and stops the elopement. The marchesa then reveals to Mary that she is not her niece but her daughter by a former marriage with an officer of inferior station in life. Mary feels that the new relationship gives the marchesa greater right to her obedience, and at her request renounces Tonio. A marriage with the son of a neighboring duchess is planned and is about to be sanctioned at a large gathering, when suddenly the grenadiers appear in a body and tell the company Mary's early history. Though Mary is about to obediently sign the marriage contract, the marchesa relents and consents to the union of her daughter to Tonio. The soldiers give lusty evidence of their joy, and the high-born guests retire in silence and disgust.

The Flying Dutchman, or Der Fliegende Hollander.—A romantic opera in three acts, by Wagner, produced in Dresden in 1843. Daland, a Norwegian sailor, has met with adverse winds on his return home and is obliged to anchor off a desert shore. Here he falls in with the Flying Dutchman, forever doomed to sail the seas in search of death and peace. Once every seven years he is allowed to go on shore in search of a wife who will prove faithful to him. He offers Daland all of his wealth for the shelter of his home and the hand of his daughter in marriage. Senta, the daughter of Daland, is seen in the midst of the spinning maidens in her father's home. Her wheel is idle and she is thinking of a legend suggested by an old picture. It is that of the Flying Dutchman, and she sings to the other maidens the song as she had heard it from her nurse. Senta has already a wooer in the person of Erick the hunter, for whom she does not much care. But the legend of the Flying Dutchman has made a deep impression on her. She sings of the old captain who met baffling winds in his attempts to round the Cape of Good Hope and of his terrible oath to never stop trying. The devil heard his oath and condemned him to sail on for eternity. God's angel, however, had pity upon him and showed him how he might gain deliverance through a wife faithful unto death. Upon the devout wish of the maidens that such a wife might be speedily found for the poor wretch, Senta cries in pity, "I will be his wife." Just then she hears of her father's return and Daland enters with the dark and gloomy stranger. He and Senta recognize their respective ideals and their troth is soon plighted. The ship of the Flying Dutchman, with its black mast and blood-red sail, then appears with its ghastly crew. The sailors awake and sing a wild and gloomy song. Erick, in despair, charges Senta with unfaithfulness. The Flying Dutchman, on hearing the accusation, feels that he has again lost in his search for a faithful wife, but Senta follows him. The ship sinks in the bay. All are drowned. Senta throws herself from a cliff into the sea. Her sacrifice breaks the spell. The Flying Dutchman is united in death to the bride who has proved faithful unto death.

Fra Diavolo.—A comic opera in three acts, by Auber, first produced at Paris in 1830. Fra Diavolo is a chief of brigands with a price of

10,000 piastres on his head. Roman soldiers under Lorenzo determine to win the reward. Lorenzo is in love with Zerline, the daughter of Matteo, a hotel owner, who intends his daughter shall marry well for money. Lorenzo is poor and stands little chance against a rich farmer's son. Fra Diavolo has become intimate with an Englishman, Lord Cookburn, to whom he is known as the Marquis of San Marco. Cookburn is on his wedding tour and is jealous of the attentions which Fra Diavolo pays to his young wife, Pamella. Diavolo's band robs Lord Cookburn and he reaches the inn at Terracina in disgust. Fra Diavolo arrives shortly after, much to Cookburn's displeasure. While Diavolo is flirting with Pamella and at the same time paying attention to Zerline, the soldiers return with 20 prisoners of Diavolo's band and the money and jewels belonging to the Cookburns. The grateful Cookburn gives Lorenzo 10,000 lire, and the latter hopes now to win Zerline. But Fra Diavolo determines to revenge the death of his 20 men on Lorenzo. Diavolo conceals himself in Zerline's room and admits his two confederates, Beppo and Giacomo. It is planned that Giacomo is to stab her while Fra Diavolo and Beppo rob the English lord. But Zerline's prayer for protection before retiring so affects the two brigands that the execution of the plot is delayed. When detected by the English lord and Lorenzo, Fra Diavolo tells Lorenzo that he is there at the request of Zerline and whispers to the English lord that he is there by appointment with Pamella. He shows Lord Cookburn a portrait of Pamella (which he had stolen the day before) as proof of his assertion. Fra Diavolo is challenged by Lorenzo, but his companions carelessly betray Fra Diavolo, who is captured, and Lord Cookburn becomes reconciled to his wife and Lorenzo wins Zerline.

Der Freischutz.—A romantic opera in three acts, by C. von Weber, first produced in Berlin in 1821. Max, a young huntsman, is in love with Agathe, the daughter of Cuno, the chief ranger of Prince Ottocar of Bohemia. Whether or not Max shall win her depends upon a master shot which Max must make on the following morning. He has been unlucky at shooting during the day at a village festival and has been mocked by his more lucky companions. Caspar, one of the chief ranger's older huntsmen, has been his evil genius. Caspar has sold himself to the devil and hopes to free himself from bondage by finding another victim. Caspar tempts Max to try enchanted bullets, which he proposes to show him how to obtain. Cuno, overhearing this, drives Caspar away and tells Max to pray to God for success and to think of his future bride. But Caspar at a later interview with Max lets him shoot an eagle flying high in the air and excites his desire to own some such magic bullets. He yields to Caspar's persuasion and agrees to meet him at midnight. Meantime Agathe, filled with forebodings of harm to Max, prays for his welfare, and with her cousin Aennchen meets him on his way to find Caspar. She tries to detain him, but he flees from her. Caspar is already at the Wolf's Glen in mysterious conference with Samiel, the Evil One, with whom he agrees to deliver Max in exchange for a few more years of life on earth and for some of the enchanted bullets. Samiel agrees, but stipulates that he will give six of the enchanted bullets, retaining the seventh for his own use. Caspar casts the bullets while Max looks on stunned and dazed. Next day all assemble at Prince Ottocar's tent to view the master shot. The Prince points out a white dove as the mark for Max. Agathe enters and cries to Max, "Do not shoot, I am the white dove." But Max has fired. Agathe sinks to the ground, and Caspar, who has been hiding behind a tree, falls at the same time, killed by the seventh bullet directed by Samiel, who had no power over the pious Agathe. Max confesses to the Prince, who orders him out of his dominions forever. But Agathe intercedes and the Prince gives Max a year's probation in which to prove his worthiness of so devoted a bride.

Hansel and Gretel.—A fairy tale in three pictures, by Adelheid Wette, the music by Humperdinck. Hänsel is making brooms and Gretel knitting a stocking in the hut of a broom maker. They are hungry and tired, but they soon forget their hunger and work and begin singing and dancing. Their mother returns and, finding the children idle, becomes angry and rushes at them to punish them. She upsets a jug of milk, the only thing they have for food. She then gives the children a basket and sends them to the woods to look for strawberries. Tired out, she sinks into a chair and falls asleep. She is awakened by the return of her husband in a gay mood. She is about to scold him, but is at once appeased by the sight of eggs, bread, butter, and coffee, which he has brought with him. The mother tells him of the idleness of the children and the breaking of the milk jug, at which he laughs good-naturedly. But he becomes alarmed when he learns that the children are now in the woods near the abode of the wicked fairy that devours children. The parents rush off to the forest to search for the children. Meantime Hänsel has filled his basket with berries. Gretel has woven a wreath of rose-hips with which Hänsel crowns her as queen of the woods. During their play they taste the berries and soon realize that they have eaten them all. It is now too dark either to search for more or to find their way home. Gretel is in great distress, but Hänsel comforts her and, after murmuring an evening prayer for safe keeping, they fall asleep in each other's arms as the fourteen guardian angels are seen hovering over them in protection. At dawn Gretel is the first to open her eyes, and she wakens Hänsel with a song. They spy a little house made of cake and sugar. In their glee they break off pieces and eat them. A fairy comes out and tells the children to enter. She says that her name is Rosina Sweet-tooth. Once in the house she puts Hänsel under a spell and sets Gretel to work. The witch kindles a fire, seizes a broom, and rides around the house on it as she sings gleefully. When she turns her back to get some food for Hänsel, Gretel seizes the juniper bough and, with a wave of it, disenchants Hänsel. The witch then turns to the oven and tells Gretel to creep into it to see if the honey cakes are ready. Gretel, feigning dullness, asks the witch to show her how. As the old witch starts to creep into the oven Hänsel and Gretel together push her entirely in and close the door. The wicked witch burns to ashes. The little ones then see a long row of children from whom the honey crust has fallen. Gretel caresses one and the child comes to life. Gretel then seizes the juniper bough and restores them all. Just then the calls of the distracted parents are heard. Great is the joy of all on finding the children safe and in possession of such a nice house. The old witch is drawn out of the oven in the form of a honey cake.

Lohengrin.—A romantic opera in three acts, by Richard Wagner; it was first produced by Liszt at Weimar in 1850 and in London in 1875. Heinrich der Vogler, or Henry the Fowler, king of Germany, is levying troops in Brabant to repel the invading Hungarians. The people are in a state of great excitement because Count Frederick Telramund accuses Elsa of Brabant of murdering her younger brother Godfrey, heir to the duke of Brabant. Elsa was to be the wife of Telramund, but he married Ortrud of Friesland and he is now claiming the duchy of Brabant. Elsa declares her innocence and the king decides to settle the question by a tourney in which all shall be left to the judgment of God. Telramund is willing to defend his rights, but there is none to defend Elsa. She, however, calmly trusts in a heavenly knight who has appeared to her in a dream, and she declares that her defender may have the crown and her hand. While she is praying a knight arrives clad in silver armor and drawn in a boat by a swan. He announces his intention of defending Elsa on condition that she shall become his wife and shall never inquire into his lineage or identity. Elsa solemnly promises. In the combat which ensues Telramund is defeated, his life is spared by the stranger knight, and Telramund and his wife, Ortrud, are outlawed. Ortrud is a sorceress, and it was she who transformed Godfrey into a swan. She plays upon the feelings and instills suspicion into the heart of Elsa. Telramund accuses Lohengrin, who says he shall not reveal his identity unless his wife shall demand it. She unwillingly refrains from putting the question. But later, when they are alone, Elsa asks Lohengrin to reveal himself. At that moment Telramund enters to kill him. Lohengrin slays his enemy with a single blow. Then Lohengrin leads Elsa before the king and loudly proclaims his secret, stating that he is Lohengrin, son of Percival, keeper of the Holy Grail, that he is a defender of right and virtue, and that he may stay with mankind so long as his name is unknown. He declares that now he must return home. The swan appears, and Lohengrin takes from its neck a golden ring which he gives to Elsa along with his sword and golden horn. As he is leaving, Ortrud boastfully declares that it was she who transformed Godfrey and that Lohengrin would have restored him had not Elsa doubted him. Lohengrin loosens the swan's chain, it dips under the water, and in its stead Godfrey rises. A white dove descends to draw the boat, and as Lohengrin glides away Elsa falls senseless in her brother's arms.

Lucia di Lammermoor.—A tragic opera in three acts, by Donizetti, produced in Naples in 1835. It is based upon Scott's *Bride of Lammermoor* and is regarded as Donizetti's masterpiece. Henry Ashton, Lord of Lammermoor, has discovered that his sister, Lucia, loves Sir Edgardo of Ravenswood and Ashton's enemy. He reveals to Raymond, Lucia's tutor, that his affairs are in such a bad way that he will be ruined if he cannot select the one Lucia shall wed. At a meeting in the park, Edgardo tells Lucia that he is about to leave Scotland to fight in France for his country. He desires to become reconciled to Lord Ashton and is willing, through his great love for Lucia, to forget his many wrongs. But Lucia fears a meeting between the two men and counsels a postponement until his return, at the same time vowing to remain faithful to him. Ashton then shows his sister a forged letter, which convinces her that Edgardo is false to her. He urges her to marry his friend Arthur, Lord Bucklaw. He tells her that he and his party are lost and himself in danger of execution unless she does so. She at last consents and, as she is signing the marriage contract, Edgardo enters to claim her. Seeing that she has broken her vow to him, he tears off the ring from her finger and throws it at her feet. Lucia loses her reason and kills her husband and now hopes that Edgardo will marry her. Everybody is full of pity for her and, too late, her brother repents his conduct. Edgardo, wandering among the tombs of his ancestors, hears that Lucia is dying and resolves to see her once more. He arrives too late. As the funeral bells are tolling he stabs himself, with the prayer to be united to his bride in heaven.

Lucrezia Borgia.—A tragic opera in three acts, by Donizetti, first produced in Milan in 1834. It is based on Hugo's play of the same name. Lucrezia, wife of Don Alfonso, Duke of Ferrara, goes in disguise to Venice to see Gennaro, her son by her first marriage. Gennaro had been given when a child to a fisherman, who brought him up as his own son. Though strangely attracted to her, Gennaro comes to abhor her when told that she is Lucrezia Borgia and when her crimes are related to him by his companions, who recognize her. Don Alfonso does not know who Gennaro is, and becomes jealous of him. When Gennaro comes to Ferrara to prove his hatred of the Borgias and tears off Lucrezia's name and scutcheon from the palace gates, Rustghello, the duke's confidant, is ordered to imprison him. Lucrezia is told by her servant, Gubella, of the defamation of her name by this stranger, and she at once insists that he be punished. When Gennaro enters, Lucrezia in horror recognizes her son. She implores the duke to spare him. To wreak his vengeance upon his supposed rival the duke compels Lucrezia to hand the poisoned cup to her son with her own hand, and leaves the room with the request that she attend her prisoner to the door. This gives Lucrezia an opportunity to administer an antidote and she begs Gennaro to flee. But his friend, Orsini, persuades him to assist at a grand festival at Prince Nogroni's. Those companions of Gennaro who had reproached and reviled Lucrezia on the occasion of her secret visit to her son are present and she has mixed poison with their wine to avenge herself upon them. When she sees Gennaro present and partaking of the wine, she hastens to give him an antidote, which he refuses to take, as it is not sufficient for his friends. He threatens to kill her, but she reveals her identity to him. He turns away in disgust and loathing from the mother for whom he has all of his life longed, and dies. The duke enters to witness his wife's horrible victory, only to find her, too, expiring, stricken down by remorse and grief.

The Magic Flute.—An opera in two acts, by Mozart, first produced at Vienna in 1791. It is the last of his operas, and was written only a few months before his death. Prince Tamino, a noble and virtuous knight, is implored by the Queen of Night to save her daughter, whom the high priest, Sarastro, carried off by force. On his mission Tamino falls in with Papageno, who agrees to share his dangers. The Three Ladies of the Queen of Night give Tamino a golden flute and to Papageno some little silver bells to help them in times of trouble and danger. The Queen of Night sends with them three boy-angels to point out the way to them. The princess Pamina is pursued by declarations of love from a negro servant of Sarastro. Tamino comes to her rescue and frightens off the negro, Monostatos. Papageno escapes with Pamina, but Monostatos overtakes them. Papageno shakes his bells and all anger is forgotten. Tamino reaches Sarastro's castle. The servants will not admit him but assure him that the princess is well treated and in no danger. Tamino begins to play upon his golden flute. Papageno's bells are heard and Sarastro appears. He punishes the wicked Monostatos; but Tamino and Pamina are not to be united until Tamino proves his love and constancy for her. He is willing to undergo any trials to which he may be subjected; but the Three Ladies of the Queen of Night, knowing the fate intended for him, seek to deter him and Papageno from their purpose. They have given their promise to Sarastro and intend to keep it. Tamino remains firm in all of the temptations to which he is subjected. He is even initiated into the mysteries of the goddess Isis. In the meantime Pamina thinks Tamino is faithless, but the three celestial youths reassure her and tell her that he is undergoing most severe trial for her sake. Pamina desires to share in these trials, and together they walk through fire and water, protected by the magic flute, and emerge purified and happy. Papageno, in despair of ever gaining the little wife that was shown to him for only a few minutes, becomes despondent and determines to die. He shakes the little bells and Papagena, a very counterpart of himself, appears. The Queen of Night, in a very unreasonable manner, plans to be avenged upon Tamino and chooses the negro, Monostatos, as her avenger and promises him her daughter; but Sarastro has already kept his promises and unites Tamino and Pamina.

Martha.—A comic opera in four acts, by Flotow, first produced in Vienna in 1847. Lady Harriet Durham disguises herself and her confidant, Nancy, as peasant girls and visits the Fair at Richmond in the hope of diversion from the tedium and ennui of her life. Lord Tristan, who is hopelessly in love with Lady Harriet, goes with them against his will, also in disguise. They take their places among the servants who are there seeking places and are hired by a tenant, Plumkett, and his foster-brother, Lionel. They carry the joke a little farther than they intended and find themselves actually bound as servants for a whole year. The ladies are taken away by their masters, who know them as Martha and Julia. Though totally ignorant of housework, they are at once set spinning. Plumkett and Lionel teach them; Plumkett falls in love with Julia and Lionel with Martha. In their perplexity Lord Tristan comes to their rescue with a coach and they make their escape, followed by the tenantry. Plumkett swears to catch and punish them, while Lionel sinks into a deep melancholy from which nothing can arouse him. At a court hunt Plumkett and Lionel recognize Lady Harriet and Nancy as the servants, and when they assert their claims to them and are defied, the masters tell the whole story to the astonished court. The ladies declare that Lionel is insane, and Lord Tristan sends him to prison for insolence, despite the ladies' prayers for leniency. Lionel gives Plumkett a ring and asks him to show it to the queen. He tells how it was left to him by his dying father, who told him that it would save him from trouble. Lady Harriet, suffering from remorse, visits Lionel in prison and tells him that she herself delivered the ring to the queen and it has been learned that he is the real Lord Derby, whose father was wrongfully banished, and that his innocence has been proved. She offers him her hand and heart, but he thinks he is again being deceived and rejects them. Lady Harriet and Nancy again dress as peasants and visit the Fair, where Lionel has been brought by Plumkett. When Lionel sees Martha approach him, promising to renounce all her former mode of life for him, his melancholy vanishes, and he marries her. His honor and possessions are restored to him. Plumkett marries Nancy, alias Julia.

Mignon.—An opera in three acts, by Ambroise Thomas, first produced in Paris in 1866. It is founded upon Goethe's *Wilhelm Meister*. Sperata, the daughter of Lothario, has been stolen by gipsies. Lothario wanders about looking for her in the guise of a minstrel. He comes upon a band of gipsies who are abusing Mignon, a young and beautiful girl, for refusing to dance. Lothario seeks to protect her, but Jarno, the chief, mocks him. Wilhelm Meister, a young student, saves her and Philine, an actress, gives Jarno all of her change in compensation for his loss. Mignon desires to go with her rescuer, who takes her along as his protégée. She grows to love Wilhelm, but when she realizes that Philine loves him and that he cares for her, Mignon wishes to die. She is saved from suicide by the strains of Lothario's harp. He watches over her always and they are both strangely

attached to one another. Mignon, in her jealous rage against Philine, wishes that lightning would strike the palace. Lothario, to please her, sets fire to it. As it is burning Philine orders Mignon to get her bouquet from the adjoining theater. Mignon, repenting her wish, goes to get the bouquet and it is then discovered that the theater is on fire too. Wilhelm rushes into the flames and brings Mignon out in safety. Mignon is taken to Italy to recover her health, for she was long ill after the fire. In her delirium she made known her love for Wilhelm and he has fallen in love with her. Lothario, no longer a minstrel but the owner of a palace, receives them at his home. He shows Mignon the family jewels and at once her memory is revived and it comes out that she is the daughter of Lothario or is the real Sperata. Philine gives up Wilhelm and turns to Friedrich, one of her many other adorers. The people come to greet their old master, the Marquis of Cypriano, the Lothario of the earlier scenes, and shout their acclaims of joy as he presents to them his daughter, Sperata, and her future husband, Wilhelm.

The Nibelungen Ring.—A festival play in a fore-evening and three days, by Wagner. The fore-evening is called *The Rhinegold*, and the other parts are *Walkyrie*, *Siegfried*, and *Dusk of the Gods* or *Gotterdammerung*. The series was first played at Baireuth in 1876.

THE RHINEGOLD.—Alberich, a Nibelung, sees three lovely nymphs guarding the Rhinegold in the depths of the Rhine. He tries to make love to them successively. They lure the ugly dwarf on and then deride him. He determines upon revenge. He sees the Rhinegold shining brightly and asks about it. The nymphs explain its wondrous powers of making one all powerful who will fashion it into a ring and forswear love. Alberich seizes the Rhinegold and makes off with it. Darkness follows and the scene changes to the "Walhalla," or mighty palace which the giants have built for Wotan, the father of the gods. Wotan and Fricka, his wife, awaken and see the newly finished palace or castle. Freia, the goddess of youth, has been offered to the giants as a reward for their work. Wotan repents of the bargain and plans with Fricka to save her. Two giants, Fafner and Fasold, come to claim the reward. Loge, the god of fire, tells of Alberich's theft of the Rhinegold and of its wondrous power. Wotan determines to rob the dwarf and agrees to give the Rhinegold to the giants instead of the reward of Freia; but they take Freia with them as a pledge. When she has gone the gods and goddesses become old and gray and the apples of youth wither. Wotan and Loge go to Nibelheim, find Alberich, and lead him away a prisoner. The gods return to Nibelheim and procure the treasures, including the Rhinegold. The giants return with Freia, and she is exchanged for the treasures, including the Rhinegold. The giants quarrel over the treasures. Fafner kills Fasold, and the gods return happy to Walhalla.

WALKYRIE.—The first day of the *Nibelungen Ring*. Siegmund, the son of Wotan and a mortal, has sought refuge in the house of Hunding, a mighty warrior and an enemy of Wotan. Sieglinda, the unwilling wife of Hunding, is greatly interested in Siegmund. Hunding, returning from the fight, learns that his guest is the warrior who has killed his kinsmen and whom their friends have long sought. The laws of hospitality prevent an attack upon him under his roof, but he warns him that they must fight on the morrow. Sieglinda mixes a sleeping potion for her husband. She then shows Siegmund a sword buried to the hilt in an ash tree and tells him that it was thrust there by an unknown one-eyed warrior, and that no one has proved strong enough to draw it out. Siegmund and Sieglinda learn that they are brother and sister. Siegmund draws forth the sword from the tree trunk and he and Sieglinda escape. Wotan desires to protect Siegmund in his combat with Hunding and so instructs the Walkyrie, Brunnhilde; but Fricka objects and forces Wotan to recall Brunnhilde and to withdraw the power from Siegmund's sword. Wotan sadly sends Brunnhilde to tell Siegmund of his doom. Brunnhilde promises Siegmund a happy abode in Walhalla after death, but he rejects the offer when he learns that Sieglinda cannot accompany him. His courage and constancy win over Brunnhilde and she resolves to disobey the orders of Wotan and Fricka and to shield Siegmund. In the fight Brunnhilde stands beside Siegmund, but Wotan interferes and breaks Siegmund's sword, yet kills Hunding by a wrathful glance. He pursues Brunnhilde for her disobedience. She takes Sieglinda upon her swift horse, Grane, and flees from Wotan's wrath. The eight Walkyries arrive on horses in the clouds, each bearing a hero to Walhalla. Brunnhilde comes with Sieglinda before her in the saddle instead of a hero. She implores aid for Sieglinda, but the Walkyries, fearing the rage of Wotan, refuse. To save her, Brunnhilde sends her to the great forest with Grane. There Fafner, the giant, has been changed to a dragon and guards the Rhinegold. She gives Sieglinda the broken pieces of Siegmund's sword and tells her to keep them for her son, who shall be named Siegfried and shall be the greatest hero in the world. To punish Brunnhilde Wotan changes her into a common mortal and dooms her to a magic sleep. Her prayers for mercy cause Wotan to change her punishment and he condemns her to be surrounded by a fiery wall which none but a hero may penetrate. He summons Loge, who encircles the rock upon which Brunnhilde sleeps with tongues of flame.

SIEGFRIED.—The second day of the *Nibelungen Ring*. In the great forest where Fafner guards the Rhinegold, Sieglinda has born a son, Siegfried. He has been reared by Mime, the brother of Alberich who stole the Rhinegold. Siegfried impatiently questions Mime regarding his mother, whom he never knew. Mime gives him the broken pieces of his father's sword —Nothung or Needful. Siegfried asks Mime to forge the pieces anew while he goes into the forest. Wotan appears to Mime and tells him that only he can forge it who never knew fear. When Siegfried returns and finds the work not done, to the great awe of Mime he easily forges the pieces himself. Wotan appears to Alberich in his cave and tells him that his brother, Mime, has brought up the boy who one day shall slay the dragon, Fafner, to obtain the Rhinegold. Wotan awakens Fafner and tells him that his slayer is coming. Mime has led Siegfried to this part of the forest in the hope of teaching him to fear; but Siegfried kills the dragon. A taste of the blood of the dragon confers upon Siegfried the power of understanding the birds, who tell him to procure the magic veil, or Tarnhelm, which shall render him invisible, and the ring, which he finds in the cave. A wood-bird warns him to beware of Mime. He learns that Mime is intent upon poisoning him to procure the Rhinegold; so he slays him. Again the wood-bird speaks to him and tells him of a beauteous bride asleep upon a rock surrounded by fire and shows him the way. Wotan desires to prevent the meeting of Siegfried and Brunnhilde and interposes his spear, but a blow of Siegfried's sword splits it. Wotan seeks refuge in Walhalla and there awaits the Dusk of the Gods, while Siegfried awakens and wins the Walkyrie, Brunnhilde.

GOTTERDAMMERUNG or DUSK OF THE GODS.—Third day of the *Nibelungen Ring*. In the prelude the three Norns, weaving the world's fate, fly when the cord breaks, for the dawn of another world is upon them. Siegfried, in search of new deeds of valor, bids Brunnhilde adieu and gives her the fatal ring as a remembrance and intrusts her to the care of Loge. Gunther, his half-sister Gutrune, and their gloomy half-brother Hagen sit in the Giebichung's hall on the Rhine. Hagen plans to have Gunther marry the beautiful woman asleep upon a rock surrounded by a wall of fire. He proposes to secure Siegfried's aid by forcing his marriage to Gutrune by the aid of a drink which shall cause him to forget the past. All turns out as is planned. Siegfried forgets Brunnhilde, marries Gutrune, and sets out to gain Brunnhilde for Gunther. The Walkyrie, Waltraute, comes to Brunnhilde and begs her to return the Rhinegold to the Rhine daughters in order to save the gods from destruction. She refuses to part with her husband's gift. Siegfried then penetrates the fiery wall, seizes Brunnhilde, whom he has forgotten, and takes from her the Rhinegold, thus rendering her powerless. He carries her off and weds her unknowingly to Gunther. When Brunnhilde realizes that Siegfried is married to Gutrune, she yields to Hagen's persuasion for revenge and tells him of the vulnerable spot beneath Siegfried's shoulder. Then the Rhine daughters try to persuade Siegfried to return to them the Rhinegold, but they arouse his pride by telling him of the harm that shall come to him should he refuse. He laughs at the threat of danger and keeps the ring. Hagen then mixes for him a fresh draught, which has the power of recalling to his mind the past. Then he drives the spear into Siegfried's back and he dies with the praise of Brunnhilde upon his lips. Then follows the marvelous funeral march for which this opera is noted. Gutrune bewails his death in Giebichung's hall. Hagen and Gunther quarrel over the ring and Hagen kills Gunther. When Hagen tries to slip the ring from the finger of Siegfried, the fingers close and the hand is raised to identify the murderer. Brunnhilde drives Gutrune away, takes a long farewell of her dead husband, and

orders a funeral pile to be erected. When Siegfried's body is placed upon it, Brunnhilde lights it with a torch, mounts her faithful steed, and leaps with it into the flames. The Rhine daughters are then seen to grasp the ring from the ashes. Hagen, in an effort to get it from them, is drawn into the waves and drowned. A dusk or dawn, like that of a new world, is seen to spread over Walhalla, where all of the gods are peacefully sleeping.

Norma.—A tragic opera in two acts, by Bellini, first produced in Milan in 1831. Norma, high priestess of the Druids and daughter of Orovist, chief of the Druids, has secretly married Pollio, the Roman pro-consul, in disobedience to her vows. They have two children. Pollio's love has grown cold. He confides to his friend, Flavius, that he loves Adalgisa, a young priestess in the temple of Irminsul. Norma is the only one who can interpret the oracles of the god. She has foretold that Rome shall fall by its own weakness, and she sends the people away alone to invoke the blessing of the god. Pollio has besought Adalgisa to flee to Rome with him. In her fear and remorse she confides to Norma her love for Pollio and his love for her. Norma agrees to release Adalgisa from her vows and to permit her to marry that she may not suffer as she has done. But when she learns the name of the lover of Adalgisa, she tells her secret to her, and as Pollio then comes up she reviles him. He defies her. Norma, in despair over the infidelity of Pollio, resolves to slay her sleeping boys. Her children awake and she shudders at her fearful purpose. Clothilde, who alone has known her secret, is sent to bring Adalgisa. Norma entreats her to be a mother to her boys and to take them to their father, Pollio, for she is determined to die to escape the shame and sorrow she suffers. Adalgisa refuses to hear of this and promises to bring back Pollio to his love and duty. Her pleas are unavailing. Norma then calls the people together, orders them to arm against the Romans and to prepare the funeral pile for sacrifice. Pollio is to be the victim, for he was captured in the act of carrying off Adalgisa. Norma then speaks in private to Pollio and promises him safety if he will renounce Adalgisa and return to her and his children. He pleads for Adalgisa and for his own death. Norma then calls the priests of the temple to denounce as a victim a priestess who has broken her sacred vows and betrayed the gods. Then she tells them that she herself is the offender. To her father alone she reveals the existence of the children. Pollio is overwhelmed by the greatness of character shown by Norma in her act of self-sacrifice to save him and Adalgisa, and he feels his love for her return. He steps forth from among the spectators and takes his place beside Norma on the funeral pile. They commend their children to the care of Orovist, who pardons the poor victims.

Pagliacci.—A musical drama in two acts and prologue, by Leoncavallo, first produced in Italy in 1892. Tonio the Fool presents in the prologue some sense of the tragic thread woven through the farce. A troop of wandering players appear and are warmly greeted by the peasants. Canio, the leader, invites the people to attend the play. He, however, much resents the attentions of the peasants to his beautiful wife and can ill stand the taunts about the Fool's evident fondness for her. He accepts his friends' invitation to a glass of wine and takes leave of his wife with a kiss. Tonio takes advantage of Nedda being alone and declares his love for her. Nedda scorns him and, when he grows too demonstrative, she seizes a whip and lashes him across the face. In his rage he swears to be avenged. The peasant Silvio then appears upon the wall and urges her to flee with him. She finally consents. But Tonio has been watching and hastens to inform Canio. They return together. Silvio escapes over the wall and is concealed by Nedda as he goes. Canio rushes after him; Nedda prays for the safety of Silvio; while Tonio enjoys her anguish. Canio returns unsuccessful and demands to know his rival's name. Upon his wife's refusal to tell, Canio is about to stab her, but she is saved by Beppo the Harlequin. Canio bewails his hard lot which compels him to take a part in a farce which is so much like his own hard fate. The peasants are then seen seated in front of a small stage. Nedda takes the part of Colombine and first collects the money from the audience. While doing so she finds an opportunity to caution Silvio about Canio. Nedda is then seen upon the stage listening to the songs of the Harlequin, her player lover. Tonio the Fool brings in food for Nedda and Harlequin and, just as he did in the morning, makes love to Nedda and is repulsed. Harlequin and Nedda sit to eat the food, when Tonio enters to notify them of the approach of the husband, Bajazzo, the part taken by Canio. He hoarsely asks the lover's name and appears in deadly earnest. Nedda refuses to tell and realizes that her life is in danger. She seeks safety among the audience, but Canio has already stabbed her; and Silvio, who rushes forward, receives his death wound from Canio. Canio stands by his wife's corpse broken-hearted. He turns to the player audience with the remark, "Go, go, the farce is ended."

Parsifal.—A festival drama, by Richard Wagner, first presented at Baireuth in 1882. In a forest on the grounds of the keepers of the Grail near Castle Montsalvat, Old Gurnemanz wakens two young esquires for their morning prayer and orders two knights to prepare a bath for the sick king, Amfortas, who has been wounded by the sorcerer, Klingsor, the foe of the Holy Grail. Kundry, a sorceress in Klingsor's service and condemned to laugh eternally for having derided Christ while he was suffering on the cross, charmed Amfortas with her beauty so that he was deprived of his holy strength and could not defend himself against Klingsor. In the disguise of a servant of the Holy Grail, Kundry brings balm for the king's wound; but it does not relieve him. His wound can be healed only by a "guileless fool" with the pure heart of a child, who shall bring back the holy spear and touch his wound with it. A dying swan sinks to the ground and Parsifal suddenly appears. Gurnemanz reproaches him for having killed the bird, but he does not appear to know that he has done wrong. He is asked about his name and origin, but he knows nothing about himself except that his mother's name was Herzeleid. Kundry recognizes him and tells him that his father, Gamuret, died in battle and that his mother reared him a "guileless fool" in the desert. Parsifal is conducted to the tower, where King Amfortas and all the knights are preparing for the blessing and the love feast. Parsifal is strangely affected by the sufferings of the wounded king. In Klingsor's castle, Kundry is awakened by her master with orders to prepare to charm Parsifal by her great beauty. The effect of the attempt is only to awaken him to a sense of his duty and to change him from a fool to a being conscious of his mission and distinguishing right from wrong. He spurns Kundry. Klingsor, appearing at her cry, hurls at him the holy spear, but it remains floating above his head and the youth grasps it. Kundry, awakened from a death-like sleep, is wholly changed; she serves the Holy Grail; and when Parsifal returns from the woods she washes his feet and dries them with her hair. Parsifal baptizes her with water and the curse of the eternal laugh is lifted and she weeps bitterly. Parsifal is conducted into the presence of the wounded king, touches the wound with the holy spear and the wound closes. The Grail is revealed and sheds a halo of glory over all. Kundry, with her eyes fixed on Parsifal, sinks dead to the ground, while Amfortas and Gurnemanz render homage to the new king, Parsifal.

Tannhauser.—A romantic opera in three acts, by Wagner, first produced in Dresden in 1845. Tannhauser, a minstrel, has won prizes by his beautiful songs, and at the yearly "Tournament of Minstrels" on the Wartburg he is given the hand in marriage of Elisabeth, daughter of the landgrave of Thuringia. He immediately disappears mysteriously and passes a year at the court of Venus in the Horselberg, near Eisenbach. Tired of the life, he leaves and vows to expiate his sins by a holy life. He returns and full of repentance falls on his knees and prays in sight of a band of pious pilgrims on their way to Rome. The landgrave and Wolfram von Eisenbach, Tannhäuser's best friend, with other minstrels appear and greet him. Tannhäuser cannot remember where he has been. They take him back to the Wartburg, where they arrive on the anniversary of the Tournament of Minstrels. Elisabeth forgives him and welcomes him back. Elisabeth's hand is again the prize. Love is chosen as the theme. Wolfram von Eisenbach first competes, followed by Walther von der Vogelweide. Tannhäuser, in his effort, sings of the love of Venus, the goddess of heathen love. When remonstrated with he openly praises Venus and so discloses where he has passed the year. He is about to be put to death, but Elisabeth intercedes and he is ordered to join a band of pilgrims to Rome and there he is to secure the Pope's pardon. When the pilgrims return, Tannhäuser is not among them. Elisabeth prays for his safety and for his soul's welfare. When Elisabeth has gone away Tannhäuser appears in the garb of a pilgrim. His pilgrimage has

been unsuccessful, for he has been told that his sins are unpardonable and that there is as little prospect of pardon for him as there is of the stick which he bears in his hand bursting into leaf. In his despair, Tannhäuser is about to seek again the court of Venus when Wolfram urges him to flee from the temptation. On his refusal to listen, Wolfram mentions the name of Elisabeth. Just then a funeral procession passes. The bier bears the body of Elisabeth. With a cry of "Holy Elisabeth, pray for me," Tannhäuser falls on his knees beside the bier; Venus disappears; the withered stick begins to bud and blossom; and Tannhäuser, pardoned, dies by the side of his loved one.

William Tell.—A grand opera in three acts, by Rossini, first produced in 1829. Tell joins a group of peasants celebrating a wedding. Arnold von Melchthal, son of an old Swiss, has fallen in love with Mathilda, Princess of Habsburg, but is prevented by his stronger patriotism from marrying an Austrian. He joins Tell in his hatred of the oppressors. Leuthold, a Swiss peasant, has slain an Austrian soldier who planned to carry off his daughter, and is a fugitive. He must cross the lake for safety, but no fisherman will face the impending storm. Tell steps forward and rows the man to safety. Rudolf von Harras, leader of the pursuing soldiers, arrives in pursuit after Leuthold has escaped, and he arrests old man Melchthal. Princess Mathilda, returning from the hunt, meets Arnold, and they betray their love. Tell with Walter Fürst announces to Arnold that his father is persecuted by the Austrians. They vow vengeance. As the deputies arrive, Tell makes them swear to aid in the freedom of Switzerland. Gessler, the Austrian tyrant, has set up his hat upon a pole to receive the salutes of the passing peasants. All obey until Tell passes with his little son, Gemmy. He refuses to salute the hat and is taken with his son before Gessler, who commands him to shoot an apple from his son's head. After a fervent prayer, he hits the apple right in the center. Gessler spies a second arrow and asks its purpose. Tell boldly declares that had he injured his son the second arrow was intended for Gessler. Tell is bound; Mathilda unavailingly pleads for mercy. The Swiss then revolt and Mathilda asks to be admitted to the alliance of free citizens and offers her hand to Arnold. The Swiss are victorious; Tell has slain Gessler; and the Swiss day of liberation is then celebrated.

Tristan and Isolde.—A lyric drama in three acts, by Wagner, first produced in Munich in 1865. Tristan, a Cornish hero, has been over to Ireland to woo the princess Isolde for his old uncle, King Mark. Isolde nursed Tristan when he was cast sick and dying upon the coast, and has loved him, though he was an enemy. Tristan, having sworn fidelity to his uncle, never thinks of himself but urges the suit of his uncle. Isolde, in her wrath at being scorned by him, tries to kill both herself and him with a poisoned drink; but Brangane, an attendant, substitutes a love potion for the poison and they are both passionately attached. But Isolde is wedded to King Mark. Still the attachment between Tristan and Isolde brings them together in secret interviews at night under the protection of Brangane. Melot, a jealous friend of King Mark, betrays them, and they are discovered by the king when he returned earlier than usual from his hunt one day. Tristan, unable to defend himself against the sorrow of the old king who trusted him, asks Isolde to follow him to death in the desert; but the king opposes him, and in the duel which follows Tristan is mortally wounded. Kurwenal, a servant, takes Tristan to his home in Brittany to nurse him and sends for Isolde to assist, she being skilled in surgery. But the ship is long in coming. In his impatience Tristan rises from his bed, tears away the bandages, and dies just as Isolde enters. King Mark has followed to pardon and to unite the lovers. When Kurwenal sees Melot approach he thinks it is as a foe and kills him, then sinks mortally wounded at his master's feet. Isolde recovers from her swoon to see Tristan lying dead, and, broken-hearted, she sinks down dead at his side.

Il Trovatore.—An opera in four acts, by Verdi, first produced in Rome in 1853. The princess Leonora is wooed by Count di Luna and by a minstrel, Manrico, thought to be the son of Azucena, a gypsy. The father of Count di Luna caused Azucena's mother to be burned as a sorceress in the belief that she had bewitched one of his children. To punish the father for his cruelty, Azucena had carried off one of the old man's other children. Count di Luna, under Leonora's window, vainly sighs for her, because her heart has been won by the singing and valor of Manrico. She hears Manrico's voice and comes forth. In the darkness she mistakes Count di Luna for Manrico. When the latter comes up to claim her, the count, in his rage, precipitates a duel in which Manrico is wounded. Though he has an opportunity to slay the count he restrains under some inexplicable impulse. While Azucena is nursing Manrico she tells him a confused story of her hatred for the count's father and of the stealing of his child. He hears that Leonora, who believes him dead, is about to take the veil and to enter the church. He rushes off to prevent this and finds the count there for the same purpose. The count has seized her, when Manrico comes up and he rescues her. Leonora marries Manrico. But the count orders his soldiers to capture Azucena. She denies all knowledge of her mother's death by fire. The count, in the belief that Manrico is her son, orders her to be burned. When Manrico is apprised of this by Ruiz, he tries to save Azucena, but is himself arrested and sentenced to death. Leonora then offers herself as a ransom for the prisoners. Her offer is accepted, and when she goes to fulfill her pledge she takes poison and dies at the feet of Manrico. The count, seeing that he has been deceived, orders Manrico to be executed. Only after the execution does Azucena tell the count the true story and that the man whom he has just had slain was his own long-sought brother.

Traviata, La (literally "The Misguided One").—An opera in three acts by Verdi, first represented in 1853 in Venice. The story is founded upon *Dumas's Dame aux Camélias*; but the period is changed to the time of Louis XIV., and the names are altered. The principal characters are Violetta, Alfredo, and Germont.

Ballo in Maschera (The Masked Ball).—An opera by Verdi, produced at Rome in 1859. Its plot involves the assassination of Gustavus III. of Sweden at a masked ball.

Africaine, L'.—French grand opera in five acts, by Meyerbeer; first presented in Paris in 1865. Vasco da Gama is loved by Inez, daughter of Don Diego, and by Selika, the African queen of an island. Nelusko, an African, loves Selika; and Don Pedro loves Inez. In the last act Vasco and Inez sail away to Portugal, and Selika and Nelusko lie down to die under a poisonous manchineel tree.

Semiramide.—An Italian opera in two acts by Rossini, first given in Venice in 1823. The plot is founded on Voltaire's tragedy, "Semiramis." The scene is in Babylon. The chief characters are: Semiramide, the queen; Arsaces, supposed to be a Scythian, but really the son of Semiramide; Assur, in love with Semiramide; Oroe, a high priest. It is one of the best of Rossini's operas. Was first given in New York in 1835.

Bohemian Girl, The.—An opera in three acts, by Michael William Balfe, first performed in London in 1843. Arline, daughter of the count of Arnheim, was stolen and reared by gypsies, of whom Devilshoof was the chief. There she falls in love with Thaddeus, a Polish refugee. The story of her birth, the restoration of Thaddeus, and their marriage form the basis of the plot. Among its popular airs are "I dreamt I dwelt in marble halls," "Come with the gypsy bride," "The heart bowed down," and "Then you 'll remember me."

Damnation of Faust.—An opera or dramatic musical legend in four parts, by Hector Berlioz; first given in Paris in 1846. It is based upon the story of *Faust* by Goethe, but several changes have been made in the legend.

Samson and Delilah. A French opera in three acts, by Camille Saint-Saëns, first produced in Weimar, in 1877. The subject is taken from Judges xvi. This story has received the attention of many artists, and is the subject of pictures by Van Dyck, Rembrandt, and Rubens.

Tancredi.—An Italian opera in two acts, by Rossini, first represented in Venice, in 1813. The libretto is founded on Voltaire's tragedy, *Tancrède*, which has for its hero Tancred, the famous knight of the First Crusade.

ART AND MUSICAL TERMS.

ACANTHUS. A plant, having ornamental foliage, the conventionalized form of which is largely employed for architectural decoration, especially on the Corinthian capital. There are two principal species, *acanthus mollis* and *acanthus spinosa*, the latter somewhat resembling a thistle.

ACCOMPANIMENT. A secondary part added to the principal for the improvement of the general effect.

ACROPOLIS. A fortified city, or the fortified part of a city, on the summit of a hill.

ADAGIO. A slow movement.

AD LIBITUM. Implies that the time of the movement is left to the discretion of the performer.

ALLEGRETTO. With cheerful quickness.

AMPHIPROSTYLE. A Greek temple, having a portico in front and one in the rear projecting beyond the side walls.

AMPHITHEATER. A building for gladiatorial and other shows, generally elliptical in form.

AMPHORA. A tall earthenware jar with two handles.

ANDANTE. Somewhat sedate; slowly.

ANGELS. In medieval art divided into nine degrees: Seraphim, Domination, Princedom, Cherubim, Virtues, Archangels, Thrones, Powers, Angels. The Cupid-like angels were only introduced in the time of the Renaissance.

ANIMATO, ANIMOSO, or **CON ANIMA.** Animated; with spirit.

ANNULUS or **ANNULET.** Ring of molding above the lower part of the echinus of Doric capitals.

ANTAE. Rectangular pilasters forming the ends of the walls of the cella of a Greek temple, and supporting the extremities of the architrave. A temple of this form was called a temple "in antis."

ANTEFIXA. Terra cotta ornaments placed above the cornice and on the ridge of the roof of Greek temples.

APSE. The extremity of a church, generally semicircular in form and surmounted by a semi-dome.

AQUATINT. A process of engraving by acid laid on in even washes with a brush, upon a broken surface formed by a crackled film of resin on the copper.

ARABESQUE. An ornament composed of stems, foliage, leafage of plants, scrolls, and fantastic animals. Not, as its name implies, an Arab invention, but found in Greek and Roman architecture.

ARCADE. A series of arches.

ARCH. A curved structure, generally a segment or segments of the circle. Semicircular arches were used by the Romans; horseshoe arches by the Byzantines and Moors; pointed arches formed of two intersecting segments of circles by the Gothic builders.

ARCHAIC. The early period of art when forms were stiff, conventional, and symbolic.

ARCHITRAVE. The horizontal part of a structure resting immediately on the capital of column or pilaster.

ASSAI. Very; used as an adverb with another word.

ASTRAGAL. A small semicircular molding at the top of a column beneath the capital, also used to divide the architrave horizontally into parts. Named from its supposed resemblance to a row of knuckle bones.

A TEMPO. In regular time.

ATLANTES. Human male figures, employed instead of columns to support the architrave.

ATRIUM. A covered court in a Roman house, with an opening in the center (compluvium) and roof sloping inwards.

BALDACHIN. A canopy over seats and other places of honor.

BAROQUE. Rococo.

BARREL VAULT. A vault of semi-cylindrical form.

BASE. The lower division of a column on which the shaft is placed; absent in the Doric order.

BASILICA. A rectangular hall divided by rows of columns into three naves, and used by the Romans as a court of justice. Adopted as the typical form of early Christian churches.

BAS-RELIEF or **BASSO-RILIEVO.** Figures sculptured on panel projecting less than half their proportions from the surface.

BASTION. A projecting polygonal buttress on a fortification.

BATTLEMENT. A parapet of a fortification, consisting of alternate raised portions and spaces, the latter called crenels or embrasures.

BAY. A portion of a structure marked off by the division of the vaulting, the arches, or the buttresses.

BEAT. An indication of a certain duration of time.

BEN. Implying well, as *ben marcato.*

BODY COLOR. In water-color painting, color made opaque by intermixture with white.

BOSS. An architectural ornament of ceilings, placed generally where the ribs of the vault meet.

BUTTRESS. A piece of wall built at right angles to the wall of a building to strengthen the structure, either immediately against the wall or connected by an arch called a flying buttress.

BYZANTINE. The style of architecture and painting in use at Constantinople from the sixth to the twelfth century.

CALANDO. A gradual diminution in speed and tone.

CADUCEUS. A wand of laurel or olive on which two snakes are intertwined; the emblem of Hermes.

CAPITAL. The, usually ornamented, member which crowns the top of a column or pillar, and by the form of which the different orders are characterized.

CARYATIDES. Female figures, employed instead of columns to support the architrave.

CELLA. The internal part inclosed by the walls of a Greek temple.

CHEVET. A form of apse inclosed by an arcade with a series of chapels round it, common in Romanesque and Gothic churches in France.

CHEVRON. A zigzag molding used in Romanesque architecture.

CHIAROSCURO. The distribution of light and shade.

CHROMATIC. Proceeding or formed by semi-tones.

CINQUEFOIL. An ornamental foliation, consisting of five projecting cusps.

CLEARSTORY. The row of windows forming the third or upper division of the nave wall of a church, rising above the roof of the outer portion of the structure.

CLOISTER. A quadrangular covered walk, forming a portion of a monastic building.

CLUSTERED COLUMN. A pier formed by a number of shafts clustered together, either united or separate.

COLUMN. A column consists of three principal parts: base, shaft, and capital.

COMPOSITE. The last of the five Roman architectural orders, formed by the combination of the Ionic volute with the foliage capital of the Corinthian.

CON. With; as *con espressione.*

CORINTHIAN. The third order in the Roman classification, of Greek origin. Shaft slender and smooth; capital richly decorated with acanthus leaf ornaments.

CORNICE. The horizontal molded projection terminating a building.

CORONA. A molding forming part of a cornice with lower part grooved to form a dripstone.

CRESCENDO. A gradual increase in tone.

CRYPT. A subterranean chapel beneath a church.

CUPOLA. A small dome or square structure rising above the roof of a building.

CUSP. Pointed foliations in architectural tracery.

CYMA. An undulated molding, formed of a concave and convex arc. When the upper arc is convex it is called cyma reversa; when the upper is hollow, it is called cyma recta.

DA. By.

DALES or **DAL.** In a soft, quiet manner.

DAMASCENING. Metal ornamented by inlaying another metal.

DECORATED. The second of the pointed or Gothic styles of architecture in England.

DELICATO. With delicacy.

DENTILS. Ornaments in the form of small cubes or teeth.

DIAPER. A mode of decoration by a repeated pattern.

DOLOROSO. In a melancholy, sad style.

DORIC. The oldest and simplest of the Greek orders of architecture.

DORMER. A gable window in the sloping side of a roof.

DRY-POINT. Direct engraving upon copper with the etching needle.

ECHINUS. The ovolo molding of a capital.

ELEVATION. The vertical plan of a building.

ENTABLATURE. The horizontal superstructure which lies upon the columns in classic architecture.

ENTASIS. The swelling of the shaft of a column.

EPINAOS. The portico situated at the back of a temple.

ESPRESSIVO or **CON ESPRESSIONE.** With expression.

ETCHING. Engraving by the action of acid on a copperplate covered with a wax ground on which lines have been scratched by the etching needle.

FACADE. The face or front of a building.
FAN TRACERY. Elaborate carved work spread over an arched surface.
FILLET. A plain band used in architecture to separate ornaments and moldings.
FINE. The end.
FINIAL. An ornament of carved work representing foliage on a pinnacle or spire.
FLAMBOYANT. A florid style of French pointed architecture peculiar to the fifteenth century, contemporary with perpendicular in England.
FLUTES. Small semicircular grooves or channels cut in the shafts of columns or pilasters.
FORTE. Strong, loud.
FRESCO. Painting executed on a freshly laid ground of stucco.
FRET. An angular, interlaced architectural ornament.
FRIEZE. (1) The middle division of an entablature which lies between the architrave and cornice. (2) Any horizontal sculptured band.
FURIOSO. With great animation.

GABLE. The triangular end of a house from the eaves to the top.
GENRE. Scenes from domestic life.
GIUSTO. In perfect time.
GRAVE. Slow in movement; low in pitch.
GRISAILLE. A style of painting in gray by which solid bodies are represented as if in relief.
GROIN. The angular curve formed at the intersections of a vaulted roof.
GUSTOSO or **CON GUSTO.** With style; taste.
GYMNASIUM. A large building used by the Greeks in which gymnastics were taught and practised.

HELIX. A small volute like the tendril of a vine placed under the Corinthian abacus.
HYPOSTYLE. A roof supported by columns.

IL. The.
IMPASTO. The thickness of the body of pigment laid on to a painting.
IMPETUOSO. Impetuously.
IN. In; as *in tempo*.
INTAGLIO. A stone in which the design is sunk beneath the surface, and gives impression of a bas-relief.
INTRADO or **INTRODUZIONE.** An introduction to a piece of music.
IONIC. The second order in Greek architecture, distinguished by the voluted ornaments of its capital.

JAMB. The side of any opening in a wall.

KEYSTONE. The top stone of an arch.
KLAFT. A royal Egyptian headdress forming a kind of hood and terminating in two flaps, which fall over the breast.

LANCET. A pointed arch, obtuse at the point, resembling a surgeon's lancet.
LANTERN. A small turret above the roof of a building having windows all round it.
LARGO. A slow and solemn degree of time.
LEGATO. In a smooth, even manner.
LEGGIANDO. Lightly.
LINTEL. The stone or beam placed across the top of a door or window.
LOGGIA. The gallery or corridor of a palace, having a colonnade on one or more sides, open to the air.
LOTUS. A water lily. In Egypt and India held sacred.

MANSARD. A roof with two sets of rafters of which the upper part is less steep than the lower. Named after a French architect.
MARCATO. In a marked manner.
MARQUETRY. Inlaid work of ornamental woods and stones of various colors. Often written Parquetry.
MAUSOLEUM. (1) The tomb of Mausolus, king of Caria. (2) Any tomb of imposing size and magnificence.
MEDALLION. A circular or oval tablet on the face of a building.
MEME. The same.
METOPE. A square slab, sculptured or plain, between the triglyphs in the Doric frieze.
MEZZO. In a medium degree; as *mezzo forte*.
MEZZO-RILIEVO. Sculpture in relief in which half of the figure projects.
MEZZOTINTO. A method of engraving by smoothing away the lights from a ground mechanically roughened.
MODERATO. Moderately.
MOLTO. Very; as *molto forte*.
MONOLITH. An object formed of a single block of stone.
MOSAIC. An imitation of painting by joining together minute pieces of hard substances of different colors.
MOVIMENTO. Movement; time.
MULLIONS. The slender pieces which separate a window into compartments.
MUTULE. An architectural ornament of the Doric order, consisting of a square block placed at equal intervals in a Doric cornice.

NAOS. The interior apartment of a Greek temple.
NAVE. The middle part or body of a church from the choir to principal entrance between the aisles.
NIMBUS. A halo or circular disk around the head of sacred personages. After the eighth century, living persons were in Italy distinguished by a square nimbus, which sometimes assumes the form of a scroll partly unrolled. The heads of statues of gods and of Roman emperors were decorated with a crown of rays. The same is found in the Oriental representation of Buddha.

OBBLIGATO. An essential portion of a composition.
OGEE. An arch described with four centers so as to be concave in lower and convex in upper part.
OGIVE. A pointed arch.
ORDER. An order in architecture consists of two parts: the one, vertical, consisting of a column and its base and capital; the other, a horizontal entablature, consisting of architrave, frieze, and cornice. The word is only used when the order is one of the five whose dimensions and details were fixed and defined by Palladio and other architects of the sixteenth century; these are the Doric, Ionic, Corinthian, Tuscan (supposed to be a simpler form of Doric), and Composite (a Roman modification of Corinthian).
ORIEL. A projecting angular window, generally triangular or pentagonal in shape.
OTTAVA or **8VA.** An octave.
OVOLO. A convex molding much used in classical architecture.

PAGODA. A sacred tower in the countries of the far East.
PALESTRA. A place for wrestling, formerly part of the gymnasium.
PEDALE or **PED.** Signifies that performer must press down pedal.
PEDIMENT. A triangular crowning of a portico usually supported by a row of columns.
PEN. A little.
PENDENTIVE. The part of a vault between two arches supporting a dome.
PERIPTERAL. A name given to a temple which had a portico of six columns on each front and a detached colonnade of 11 on each side of the cella.
PERISTYLE. A building, the interior of which is surrounded with columns.
PERSPECTIVE. The art of representing on a flat surface the appearance of objects from one given point of view.
PIANISSIMO or **PP.** Very soft.
PIANO or **P.** Soft.
PIER. Perpendicular supports from which arches spring.
PILASTER. Square pillar on a wall partly imbedded in it, less than one fourth of its thickness projecting.
PINNACLE. A small spire.
PISCINA. A stone basin usually placed in a niche in the wall of the chancel at which the priest might wash his hands.
PLINTH. The lower projecting base of a column.
PLUS. More.
POCO A POCO. Gradually; by a regular gradation.
POMPOSO. Stately, dignified.
PRECIPITATO. Very quickly; hurriedly.
PREMIERE. First, as *première fois*, first time.
PRESTO. Very quick.
PRIMO. First, as *violino primo*, first violin.
PRONAOS. The portico situated in front of a temple.
PROPYLAEA. Gateway or entrance to an Egyptian temple.

QUASI. In the manner of; like.
QUATREFOIL. An ornament in pointed architecture, consisting of four foils.

QUIETO. With repose, quietly.

RAPIDO. Rapidly.
RINFORZANDO, RINF., or RF. With increase.
RITENENTE or RITENUTO. Decreasing in speed.
ROCOCO. A style of decoration distinguished by a superfluity of confused and discordant detail.
ROMANESQUE. The debased style of architecture and ornament adopted in the later Roman empire, and the styles founded upon it.
ROSE WINDOW. A large, circular window divided into compartments by curved mullions.
RUSTICATION. Hewn stone masonry, the joints of which are rendered conspicuous by grooves or channels.

SARCOPHAGUS. A stone coffin.
SCUMBLING. The process of going over a painting with a brush, nearly dry, to soften and blend the tints.
SEGNO. Sign, as *al segno*, go back to sign.
SEMPRE. Always, as *sempre piano.*
SERIOSO. Seriously.
SHAFT. The body of a column.
SOLO or SOLA. Alone. A composition rendered by one person.
SOSTENUTO or SOST. Prolonged, sustained in tone.
SPHINX. A figure with a human head on a lion's body, typifying the union of intellectual and physical power. An Egyptian emblem, signifying the religious mystery.
SPIRITO. With spirit.
STACCATO. Each note to be distinctly marked.
STESSO. Extended, diffused, slow.
STYLOBATE. The common base of a row of columns.
SYNCOPATE. See SYNCOPATION.
SYNCOPATION. Connecting an unaccented note with an accented note following others in the same or in different bars, thus forming one prolonged note with a duration equal to the two.

TAENIA. A band which separates the Doric frieze from the architrave.
TANTO or TAN. So much.
TARDO. Slowly.
TEMPERA. Painting with pigments mixed with chalk or clay, and diluted with size.
TEMPO COMMODO. In moderate or easy time.
THALAMUS. The nuptial chamber in a Roman house.
TORSO. The trunk of the statue of a human figure.
TRACERY. Geometrical ornament.
TRANQUILLO. Tranquilly.
TRANSEPT. A transverse nave, passing in front of the choir, and crossing the longitudinal nave of a church.
TRANSOM. The horizontal crossbar in a window.
TREFOIL. An ornament of three foils.
TREMANDO or TREMOLO. The rapid striking of a note so as to produce a tremulous effect.
TREMENDI. With terrific expression.
TRIFORIUM. The second or middle story of the nave wall of a Gothic church, consisting of a gallery over the ceiling of the side aisle and below its roof.
TRIGLYPH. An ornament, consisting of three flutings or upright groupings, separating the metopes in a Doric frieze.
TRILLE or TRILLO. A trill or shake.
TRIPLET. A group of three notes equal in duration of time to two notes of the same value.
TRIPTYCH. A form of pictures in three panels.
TYMPANUM. The triangular space between the horizontal and sloping cornices. The name is also given to the space included between the lintel of a door and the arch over it.

UN. A, as *un poco*, a little.

VAULT. An arched ceiling or roof of stone.
VELOCE. Rapidly.
VELOCISSIMO. With great rapidity.
VIGOROSO. With vigor.
VIVACE or VIVACEMENTE. Briskly and quickly.
VOLTI SUBITO. Turn over quickly.
VOLUTE. A spiral scroll.
VOUSSOIRS. The wedge-shaped stones used in constructing an arch.

ZOOPHORUS or ZOPHORUS (lit., bearing animals). A continuous frieze, decorated with figures of animals, conventional and real.

LANDMARKS IN THE HISTORY OF MUSIC.

333 St. Ambrose born.
384 The Ambrosian chant arranged for Milan cathedral.
590 Accession of Pope Gregory, who arranged the Gregorian chant.
814 Chant of Metz, Germany, began to be introduced in all Catholic churches at matins.
895-900 Beginning of modern harmony. Hucbald's "Organum."
(*c.*) 1025 Improvements in musical notation and introduction of solmization by Guido of Arezzo.
1100 Beginning of the earliest French school of contrapuntists. Jean Perotin introduces "imitations."
1200 Franco of Cologne regulates measure in music and formulates some of the fundamental laws of modern harmony.
1217 Walter Odington, an English disciple of the French school, writes a learned treatise on music.
1380 Introduction of secular tunes in masses.
1425-1430 John Okeghem, first master of the great Netherlands school, born. Canon carried by him to its utmost perfection.
1453 Fall of Constantinople and flight of scholars to Italy.
1475 The Meistersingers flourished in Germany.
1480 Adrian Willaert, father of the madrigal, born. Introduction of double choruses in antiphonal form.
1514 Palestrina born.
1520 Orlando di Lasso, last of the Netherlands school, born.
1524 The first Lutheran hymn book published.
1544 Cyprian di Rore's "Chromatic Madrigals" published.
1555 Palestrina's first masses published.
1563-1570 Lasso's celebrated penitential psalms composed.
1594 Performance of Jacopo Peri's "Daphne," the first opera at the Palazzo Corsi, Florence.
1600 Cavaliere's oratorio, "L' Anima è Corpo," produced.
1600 Production of Peri's "Eurydice" at the marriage of Henry IV. and Maria de Medici in Florence.
1607 Monteverde's "Orfeo" produced at Mantua.
1608 Production of Monteverde's "Arianna."
1627 Opera introduced in Germany by Schütz.
1637 Opening in Venice of the Teatra San Cassiano, the first opera-house, with Manelli's "Andromeda."
1659 Alessandro Scarlatti, founder of the Neapolitan school, born.
1672 Sebastiani's passion music published.
1685 Johann Sebastian Bach and Händel born.
1710 The pianoforte invented by Cristofori.
1714 Gluck born.
1718 Händel makes England his home.
1724 Bach's "St. John's Passion" produced.
1731 Händel's first English oratorio, "Esther," produced.
1732 Joseph Haydn, father of the symphony, born.
1742 April 18, at Dublin, "The Messiah" first performed.
1749 March 23, "The Messiah" produced in London.
1756 Wolfgang Amadeus Mozart born.
1770 Beethoven born. Mozart's "Mithridate" produced.
1786 Weber born.
1791 Cherubini's "Lodoiska" produced.
1791 Meyerbeer born.
1792 Rossini born.
1795 Beethoven's Opus I. published.
1797 Schubert born.
1798 Donizetti born.
1799 Haydn's "Creation" produced at Vienna.
1802 Bellini born.
1803 Berlioz born.
1809 Mendelssohn and Chopin born.
1810 Schumann born.
1811 Liszt born.
1813 Rossini's "Tancred" produced.
1813 Richard Wagner born.
1813 Giuseppe Verdi born.
1818 Gounod born.
1821 Schubert's "Erl-King" first sung in public.
1829 Rossini's "William Tell" produced.
1831 Bellini's "La Sonnambula" produced.
1842 Wagner's "Rienzi" produced.
1845 Wagner's "Tannhäuser" produced.
1846 Mendelssohn's "Elijah" produced at the Birmingham Festival.
1849 Schumann's "Faust" produced.
1850 Wagner's "Lohengrin" produced.
1851 Verdi's "Rigoletto" produced.
1859 Gounod's "Faust" produced.
1864 Richard Strauss born.
1868 Wagner's "Die Meistersinger" produced.
1876 Wagner's "Der Ring des Nibelungen" produced.
1887 Verdi's "Otello" produced.
1900 Elgar's "Dream of Gerontius" produced.

BOOK X.

LITERATURE.

Mural Painting in the Congressional Library, Washington.
By H. O. Walker.

HISTORY OF LITERATURES OF ALL NATIONS. OUTLINES IN CHART FORM OF THE LITERATURE OF THE WORLD, SHOWING CONTEMPORARY WRITERS IN THE SEVERAL COUNTRIES. BIOGRAPHICAL DICTIONARY OF AUTHORS. LITERARY PLOTS, NOTED CHARACTERS IN FICTION, AND FAMILIAR ALLUSIONS. DICTIONARY OF PSEUDONYMS.

Babylonian and Assyrian Literature.—The majority of modern students of language consider that it is very probable the Sumerian language, spoken by the earliest inhabitants of the valley of the Euphrates, is the oldest language of which we have any knowledge. In that locality recent excavations have revealed a great quantity of clay tablets bearing characters written in the peculiar wedge-shaped letters known as cuneiform inscriptions. These have been deciphered and are found to be records in the Sumerian language, which seems to have persisted in written records long after the people themselves had merged with the Babylonian races. Only a very slight fraction of the great wealth of the early literature that is buried along this locality has yet been discovered, but sufficient is known to render it very probable that the first place in which written records were made, of which we have any knowledge, is among the Babylonians. The language was Semitic, and the Babylonian differed from the Assyrian only in a few variations of dialect. Everything points to a common Aryan origin; in no sense did the Babylonians borrow from the Egyptians. Clay was used as an ordinary writing material among the earliest Babylonians, but they inscribed upon stone the records which they desired to be permanent. Assurbanipal, a king of Assyria, caused copies of this earlier literature to be made, and some of it dates back earlier than 2000 B. C. It comprises hymns, prayers, incantations, myths, legends, and poems. Among the records are a great many commercial and legal cabinets, which are abundant in European and American museums. These range all the way from 3000 B. C. down to 200 B. C., and are exceedingly valuable as throwing light upon the history, manners, and customs of the people during many of the past centuries. There is every prospect that the gaps in the complete record will all be filled up by discoveries of new material which the excavations are constantly yielding. So important has this great mass of literature been to the students of past history that since 1890 it has been possible to almost wholly reconstruct the records of early Babylonian and Assyrian history from them. Under the patronage of the Assyrian kings the great library at Nineveh, instituted by the removal hither of that at Cabah, obtained a wonderful collection of tablets and books systematically arranged in every known department of knowledge. This library was destroyed in 625 B. C. when Nineveh fell. Nebuchadnezzar formed a great royal library, of which we have probably exaggerated accounts, and this, too, disappeared with the fall of Babylon. The contents of these libraries were private property of the kings.

EGYPTIAN LITERATURE.

Such papyri as we now possess are sufficient to show that ancient Egyptian literature was very extensive. The pyramids of the VI. and VII. dynasties bear rock-cut inscriptions of a religious nature. These are generally magical, for the religion of ancient Egypt was saturated with belief in magic. The famous *Book of the Dead* is, in its earlier chapters, little more than a series of incantations and assurances to the soul of the dead of its future welfare. Translation of hieroglyphics shows a complete absence of any works of a philosophical or speculative character. The nearest approach to this department of literature is a number of moral maxims or proverbs, all of an extremely practical nature. Such are the *Proverbs of Ptah-hotep* and the *Prescriptions of Ani*. The same practical vein runs through their works on science. The *Rhind Papyrus*, preserved in the British Museum, is the most important work on Egyptian mathematics which we have. It is a collection of arithmetical and geometrical solutions of problems of a very practical sort.

The *Papyrus Ebers*, written about 1550 B. C., is an extensive medical work. It deals only with the treatment of disease, and the prescriptions which it contains are in many cases disgusting and always empirical. Magical incantations play an important part in increasing the efficacy of the treatment prescribed. A fuller collection of these religious and medical incantations has been preserved in the *Harris Magical Papyrus*.

The *Turin Papyrus* gives an admirable and interesting illustration of civil and criminal law procedure, especially as no code or collection of Egyptian laws has come down to us. The *Abbott Papyrus* further illustrates these in describing the procedure in an investigation into tomb robberies in the reign of Rameses IX. (about 1100 B. C.).

Egyptian poetry is modeled upon that of the XII. dynasty. The only epic poem which remains describes the victory of Rameses II. over the Hittites at Kadesh on the Orontes. Lyric poetry abounds in the form of many really fine hymns and a few love-songs.

In the narration of tales and stories the Egyptians excelled all other Oriental nations, and the professional story-teller appeared in public places in ancient Egypt just as he does in Cairo to-day. The *Papyrus Westcar* contains a collection of stories dating from the Middle Empire. The story of the *Fated Prince* which is contained in the *Papyrus Harris*, though incomplete, is interesting in its treatment of a theme common in the folklore of all nations. The *Tale of Two Brothers* contained in the *Orbiney Papyrus* is complete. The story of the *Shipwrecked Mariner* gives play to the Egyptian love of adventure in simple, unaffected narrative, while the *Story of Sinuhe* and that of the *Eloquent Peasant* are heavily laden with a florid and ornate style and filled with rhetorical extravagances. Later Egyptian fiction, however, returns in the Ptolemaic era to the simple narrative, where the plot is essential and quick movement is the rule.

CHINESE LITERATURE.

The history of Chinese literature goes back, perhaps 18 or 20 centuries B. C. We do not find in China any lasting monuments like those of Babylon and Assyria upon which by inscriptions the early writings might be recorded. The earliest gathering together of the Chinese literature that we know of was in the sixth century B. C. when Confucius edited the famous *Ching* or *King*, a sacred canon. From this we know that already a great mass of both prose and poetry existed in China. This classic stands in a unique position among the early writings of the world in that it has exerted a marvelous influence upon the manners, morals, and customs of the nation down to the present day. It forms as interesting a literary collection as can be found anywhere among ancient writings. Thousands of volumes of commentary and discussion have been based upon this work which for over 3,000 years has been the model of literary style, the means of preserving the form of their remarkable language, and of prescribing the social life and the government of so many millions of people. As a record of authentic ancient history China is easily in the first rank of the Asiatic nations for reliable information concerning the early ages. Mencius, the greatest follower of Confucius, adds to the work and gives an elaborate exposition of the teachings of Confucius and sets forth the principles of his philosophy in what is known as the *Book of Mencius*. This group of works has dominated the minds of the people and has subordinated all other teachings, making it the backbone of extreme conservatism of the nation in all of the departments of national life. When, in 213 B. C., the emperor Chin found his reforms opposed by this spirit of conservatism which the writings of Confucius imposed upon the people, he ordered the destruction of all books in the hope that he would in this way be able to overcome the opposition of the *literati*. The only books spared were those upon science, agriculture, and divination. This thorough destruction of literature forms an epoch in Chinese history. But Chin's reign was short, and the Han dynasty (200 B. C.—200 A. D.) which succeeded instituted one of the most zealous revivals of learning that history has ever witnessed. In this revival there was a remarkable development of poetical and historical writing which is in distinct and marked contrast with the severe canonical restrictions of the age of Confucius. It is to this period that the work of Sze-ma Ch'ien (born 145 B. C.) belongs. His *Historical Record* gives the history of China from the beginning down to the author's own times in 526,500 words, all originally scratched with a stylus upon bamboo sheets. So thoroughly and devotedly has this work been studied that it forms even to this day the model of style for all historical treatises. Each succeeding dynasty caused the records of its rule to be added faithfully to the original record, so that in 1747 the work consisted of 219 volumes in which the national history had been revised and condensed. Other noted Chinese historians are Sze-ma Kwang, who wrote a history in 360 volumes in the eleventh century, and Chu Fu-tz', who wrote an abridgment in 55 volumes in the twelfth century.

Among the comparatively few works of foreign travel, for which the Chinese were never noted, are the accounts of the Buddhist pilgrims, Fa Hsien in the fourth century, and Hsuan Tsang

in the seventh century. These record travel in India and preserve much Buddhist literature which would otherwise have been lost in the extinction of India.

The intellectual life of China reached its zenith in the T'ang dynasty (600-900 A. D.), The names of the poets of this period are legion, and a "Complete Collection" was published in 1707. It contains 50,000 poems in 900 books. The most noted names of this period are Li Po (705-762) and Tu Fu (712-770), both court favorites and very popular among all classes. Their names have been household words in China for more than a thousand years. Han Yu (768-824) is a name venerated for nobility of character, probity and ability in high office, and refinement and excellence of literary style. Parts of his works are even now read at Chinese funeral exercises and others form an important part of the repertoire of school and public readers.

While there is a marked and rapid decline in the originality and power of the writers after the great golden T'ang period of Chinese literature, yet several noted names appear in the tenth and eleventh centuries. Valuable historical works were written by Sze-ma Kwang (1019-1086) and Chu Hsi (1130-1200). The latter was one of the most remarkable men of his country. He was not only a historian of ability but as a philosopher he interpreted the work of Confucius into that system or code which is now known to the outside world as Confucianism.

The invention of block printing in the tenth century caused a great increase in bookmaking and in the formation of libraries. While the Mongols added nothing to the intellectual life of China, it was during the period of their control that the Chinese drama was evolved and developed, and novels and short stories were introduced. Chinese plays are not long, as is erroneously supposed in the West. They are short and the plot often ingenious and melodramatic, but never complicated. The sessions at the playhouses are long, but a number of plays are presented in rapid succession without scenery. During the Ming (1368-1644) and present dynasties novels have developed with increasing and absorbing interest, though the plot is often too complicated and the characters too numerous to suit the Western ideas. Chinese short stories are admirable and some of them rank among the world's best, such as *Strange Stories* published in 1679.

Chinese later literature abounds in dictionaries and encyclopedias—one of the latter being complete in 5,600 volumes. No other country can present anything to compare with China in this department; but they can hardly be classed as literature.

Taken as a whole, Chinese intellectual development is most praiseworthy and creditable to any nation. More attention is being devoted to its study by Western scholars and every year reveals much to be admired in it, though through the difficulties of the language it suffers in translation more than the literature of other nations.

The labors of various European travelers and students have given us specimens of almost every description of Chinese literature. In legislation, we have a translation of the penal code of the Empire; in politics and morals, the sacred books of Confucius, and his successor Mencius; in philology and belles-lettres, a well-executed dictionary of the language; several translations and abstracts of history; and selections from the drama, criticism, and romance. Among the most successful explorers of the field of Chinese literature, we may mention Staunton, Davis, Morrison, Klaproth, and Rémusat, who have followed up the earlier researches of the Jesuits at Peking, and elucidated a subject which had been supposed to be inaccessible.

HEBREW AND JEWISH LITERATURE.

The earliest known writings in Palestine are the Tel el-Amarna letters which date about 1400 B. C. It is, however, probable that a knowledge of writing was general among the Hebrews about 1000 B. C. The greater part of ancient Hebrew literature which is known to us is contained in the Old Testament, which covers a period of about 900 years,—from 1000 B. C. to about 100 B. C. There are in addition some apocryphal books, such as the *Book of Ecclesiasticus*, written by Jesus Sirach about 180 B. C. A large portion of the originals of this work has recently been discovered. The oldest portions of this literature are the poetical portions, such as the *Song of Deborah* in Judges v., the *Fable of Jotham* in Judges ix., and the *Elegy of Saul and Jonathan* in II. Samuel i. The earliest collections of traditions and legends date from the tenth and ninth centuries B. C. Legal codes, such as are to be seen in the *Book of the Covenant* in Exodus xxi. and xxii., date from the tenth century B. C. The discourses of the prophets date from the eighth century B. C., while the latest sections are of the third century B. C. The great body of the religious poetry such as the *Psalms* and such philosophical productions as the Books of *Ecclesiastes* and *Job* were written after the return from exile. At that time a college of learned men under the direction of Ezra gathered together the remains of Hebrew literature, and from their labors we have received the books of the Old Testament in their present form.

This period of literary activity is considered the first period of Jewish literature as distinguished from the ancient Hebrew literature. The second period of Jewish literature dates from 143 B. C. to 135 A. D. In this period the *Midrash*, or inquiry into the meaning of the Old Testament, was divided into the *Halacha*, or authoritative and binding civil and religious law, and the *Haggada*, which was a free poetical dissertation on the whole body of the Old Testament. The *Midrash* was the center of all Jewish mental activity for over 1500 years. To this second period also belong all of the *Apocrypha* and the earliest Jewish writings on Christianity. Josephus, Philo, Hillel, Shammai, Johanan ben-Zakkai, Gamaliel, Eleazar ben-Hyrcan, Joshua ben-Hananya, Ishmael, and Akiba are among the great names of the second period. To the third period (175-475) belong the flourishing schools of Galilee, Syria, Rome, and Babylonia in which instruction was given in the *Halacha* and the *Haggada*. The masters of the *Mishna*, the body of "oral law," and the *Talmud*, the comprehensive compilation of laws and ceremonial regulations pertaining to rabbin-

ical Judaism and the discussion of the same, were Eleazar ben-Jacob, Jehuda, Jose, Meir, Simeon ben-Yehai, Jehuda the Holy, Nathan, Hiyya, Rab, Samuel, Johanan, Hunna, Rabba, Rava, Papa, Ashe, and Abina. In 340, Hillel II. fixed the Jewish calendar. The fourth period extended from 475 to 740. During this time the Jews adopted the language of the country in which they lived and the greatest part of the literature is of translation of the *Talmud* and other works into the several languages. Little remains of the works of the eminent physicians of the period. In the fifth period, from 740 to 1040, the Oriental Jews were stimulated by the great activity of the Arabs, and names of many physicians, astronomers, grammarians, commentators, and historians are famous in the literature of this period. The oldest prayer book was drawn up in 880, and the first Talmudic dictionary in 900. In this period are such names as Saadia (died 942), famous in nearly all departments of knowledge; Sherira (died 998) and his son Hai (died 1038) who wrote a dictionary. Spain and Egypt became the great seats of Jewish literature after the suppression of the Babylonian schools in 1040. In the eighth century Hebrew rhyme was produced. The sixth period, which extended from 1040 to 1204, was the most splendid in Jewish medieval literature. The Jews in Spain devoted their energies to almost every branch of literature and wrote in Arabic, rabbinical Hebrew, and ancient or classical Hebrew. The greatest names among them were Samuel Halevi, the great doctor (died 1055), and the celebrated Maimonides, who died in 1204. The French and German Jews attained very great fame. The seventh period (from 1204 to 1492) shows distinctly the influence of Maimonides. The most famous writers of this period lived in Spain, and, later, in Portugal, Provence, and Italy. The first Hebrew books ever printed were produced in Italy between the years 1475 and 1477. The eighth period extended from 1492 to 1755. The ninth period includes the years from 1755 to the present time. In these two periods the names of brilliant Jewish writers increased so that it is impossible to give even the names of the most illustrious. But it may be safely said that there is no civilized country which is not proud to record the names of eminent Jews among the great literary men of every department of literature. Everywhere they take a leading part in the intellectual progress of the age; and there is hardly a university of note which does not number Jews among the most learned professors.

SANSKRIT LITERATURE.

Sanskrit literature, like the language, may be divided into two periods: the Vedic and the Sanskrit. The chief point of difference is that the literature of the Vedic period is always sacred and that of the Sanskritic period is nearly always profane. The *Vedas* are the oldest books of the Hindus and, in the opinion of great philologists, date back to the eleventh century B. C. They are the sacred books or the Bible of the Hindus written in poetry in the most ancient form of the Sanskrit language. The *Vedas* are three in number: first the *Rig-Veda*, containing hymns and mystic prayers; second the *Yajur-Veda*, containing the religious rites; and third the *Sama-Veda*, composed of prayers in the form of hymns or psalms. These writings are believed to be inspired. They treat of the 33 gods of the heaven, of the air, and of the earth; of the creation of all things; of the relation of the gods to each other; of the relations and duties of men to each other and to the gods; of surgery, medicine, music, dancing, war, architecture, mechanical arts, astronomy, astrology, grammar, poetry, etc. The *Vedas* were first translated into English by Sir William Jones, about 1790. The individual writers of the Vedic literature are practically unknown, as the books are the work of families of poets or schools of religious learning. The *Brahmanas* are divisions of Vedic literature which relate to prayer and sacrifice. They are of a later period than the hymns. The *Upanishads* are speculations of a philosophical and theological nature found usually at the end of the *Brahmanas*. The earliest of the *Upanishads* can hardly be dated later than the year 600 B. C.

Sanskrit literature includes epic, lyric, didactic, dramatic, and narrative. The great epic is the *Mahabharata* or the story of the *Bharatas*. It is a composite work dating in the form in which it has come down to us from about 200 B. C. with additions from time to time down to 100 A. D. It consists of 18 books of 100,000 stanzas. The Bharata war which the epic describes is thought to have occurred in the twelfth century B. C. The *Ramayana* is the second of the two great epics of India. Unlike the works which precede it, this epic is mainly the work of one poet, Valmiki. It ranks with the great epics of the world and is to-day the favorite poem of the Hindus. In its 50,000 lines it describes the youth of Rama, the incarnation of the god Vishnu, and his banishment and residence in central India. The *Puranas* are a mixture of the epic, didactic, and cosmogonic, dating from the sixth to the fourteenth centuries A. D. They are 18 in number and relate chiefly to mythological legends. They form a sort of religious manual for the people and deal almost exclusively with the worship of Siva and Vishnu. Epic poetry reaches its highest perfection in the works of the great poet Kalidasa in the sixth century A. D. *The Birth of the War God* and the *Race of Raghu* are his most artistic epic poems.

In Sanskrit lyric poetry also Kalidasa is the leader. His elaborate long lyrics, the *Cloud Messenger* and the *Cycle of Seasons*, are famous examples. Short lyric verses were a favorite form of poetry for which Bhartrihari is the most famous. He lived in the seventh century A. D. and is the most remarkable Sanskrit poet after Kalidasa. Amaru, who wrote the *Century of Amaru*, is perhaps better known than Bhartrihari, because of his mastery of the erotic phase of lyric verse. But Hindu poetry and prose is always marked by the presence of speculative and reflective expression so that much of the writing is at once capable of classification in several departments of literature. The proverb is a favorite form of expression in Hindu writing and more than 8000 stanzas of this nature have been collected from Sanskrit writings. Such is largely the work of Bhartrihari; Silhana in his *Century of Tranquillity;* and the *Hamer of Folly*.

In didactic literature the most famous examples are the *Pancatantra* and the *Hitopadesa*. The *Pancatantra* is the great collection of beast-fables of the Hindus. It dates from the fifth century A. D., and is the work of probably many hands. The *Hitopadesa* or *Book of Good Counsel* is a collection of fables which have passed into the literatures of the whole world.

The chief dramatic writer, too, of India is Kalidasa, at once a master of the epic, lyric, and dramatic. One drama antedates his work. It was written at the court of King Sudraka, probably by Dandin. Later than Kalidasa are the works of King Harsha in the seventh century; Bhavabhuti, who ranks next to Kalidasa in the drama, and Viskhadatta, both in the eighth century.

The most interesting phase of Sanskrit writings is the fable and the fairy tale. Besides the *Pancatantra* and the *Hitopadesa*, which deal with fables, there is the *Oceans of Rivers of Stories* composed by Somadeva, a Kashmirian poet about 1070, which is the most famous collection of fairy tales. There are also the *Seventy Stories of the Parrot*, the *Twenty-five Tales of the Vampire*, and the *Thirty-two Stories of the Lion-Seat or Throne*.

In prose romance there are the works of Dandin who wrote the *Adventures of the Ten Princes* in the sixth century A. D.; of Subandhu, a little later; and of Bana, a writer of novels in the seventh century A. D.

Indian literature abounds in works of science, from the grammars of Panini, one of the greatest grammarians of all time, and from his commentators, Katyayana and Patanjali, down through the gift of the so-called Arabic numerals to the Arabs, to the medical works of Caraka, chief physician to King Kanishka, in the first century A. D.

PERSIAN LITERATURE.

The literature of Persia falls into four divisions: (1) The Old Persian cuneiform inscriptions of the Achæmenian kings; (2) the *Avesta*, including the more ancient Gâthâs, believed to date from the time of Zoroaster; (3) the Pahlavi literature; and (4) the post-Mohammedan or "Modern Persian" literature, which latter is generally what is understood as "Persian Literature." The Achæmenian inscriptions may be regarded rather as historical than literary monuments, and we may pass to the one classic which represents the literature of ancient Persia. This is the *Avesta*, of which only a fragment has come down to us, and which embodies the religious system of Zarathustra (Zoroaster).

The language of the *Avesta* is termed Avestic, but is often improperly called Zenda. The misleading term, *Zend Avesta*, really means "Avesta and Zend," that is, the original text of the Zoroastrian scripture, and the Zend or "Explanation" (translation and commentary) which accompanies it. The Zend is written in the Pahlavi language, different altogether from that of the text. By analogy it is as if some old Anglo-Saxon fragment had been "explained" in the middle English of Chaucer.

The Pahlavi literature consists chiefly of translations of Avesta texts, and of a number of religious works and commentaries of Pahlavi texts. Of non-religious subjects only 11 works have come down to us, containing not more than 41,000 words altogether. Pahlavi was essentially the Persian literature of the Sâsânian period, though it continued to about the ninth or tenth century. No poetry has come down to us from Sâsânian times, and scholars are not agreed as to whether such poetry ever existed.

In 641 the Persians were defeated by the Arabs at the battle of Nehavend, and with the fall of Merv in 651, the Moslem conquest was complete. The growth of a national literature was retarded, for during the Arab dominion Arabic was the chief medium in Persia, both for prose and poetry. Under the semi-independent dynasties, the Saffârids, Sâmânids, and earlier Tâhirids, the use of Persian was revived as a literary language.

The oldest poem written in modern Persian that has come down to us is a short ode by Abbas of Merv, at the beginning of the ninth century. The founder of the new school of Persian literature proper was the blind poet Rudagi, who died about 950, and who was pronounced by his contemporaries as "peerless amongst the Arabs and Persians." The language of Rudagi and his followers was surcharged with Arabic words, and their poems were but echoes of Arabic poetry.

The famous Sultan Mahmud of Ghazni, who reigned from 998 to 1030, was the greatest patron of literature that Persia had hitherto known. His court was the home of 400 poets, of whom one was elected as "King of the Poets," or laureate—an office which has continued to the present day.

The works of these poets consisted chiefly of occasional odes and panegyrics, with a sprinkling of lyrics in honor of some imaginary beauty. These were arranged in *divans* or collections, and were for the most part modeled on the *ghazal* of the Arabs. The ghazal is a form of poetical composition, consisting usually of 12 couplets, into the last of which the poet invariably introduces his nom de plume. The Arabic *kasida*, corresponding to the Greek *idyllium*, or our elegy, was also freely copied. It was at the court of the great Mahmud that Firdausi flourished, the Homer of Iran, and the author of the great Persian national epic, the *Shâhnâma*, or "Book of Kings," completed in the year 1010 and containing about 60,000 couplets. Though not the founder of the epic style in Persian he was its greatest exponent.

The epic was foreign to Arabic poetry, and was essentially Persian in growth and origin. The national spirit, though suppressed, was not extinguished by the flame of Islam. Firdausi's famous epic recorded the old legendary story of Iran from the creation of the world to the fall of the Sâsânian dynasty in 641. In the field of pure romance the greatest figure is Nizami (died 1203), who composed five romantic poems. The last of this school and the last poet of the classical period was Jami (1414-1492).

Not only the epic but the *ruba'i* or quatrain (from Arabic *raba'a*, four) was native to the Persian genius; the examples best known to the West are the quatrains of Omar Khayyam (died 1123). The other great lyrist was Hafiz, noted for his famous ghazals. Among his many imitators the most prominent was Baba Fighani of Shiraz (died 1516 or 1519), known as "the

minor Hafiz." In the Persian lyric proper, love and wine are the predominating themes; but in reading these poems the esoteric or Sufiistic meaning must ever be borne in mind.

Parody is closely allied to the lyric, and in this connection must be mentioned Abu Ishak (died 1427), who sang of gastronomical glories. Still more closely related to lyric poetry is the religious and didactic poetry, equally permeated by the spirit of Sufiism. The foremost writer of the mystic poetry was Jalal-ud-Din Rumi (1207-1273), whose *Divan* and *Mathnavi* are among the most important sources for the study of Sufiism. His greatest predecessor was undoubtedly Farid-ud-Din Attar (died 1229), whose *Mantig ut-Tair* (*Bird Parliament*) is a noble allegory of the struggle of the soul to be one with the Infinite. To this class of writing also belongs the great name of Sâdi (died 1291), whose *Gulistân* or *Rose Garden,* and *Bustân* or *Flower Garden* are among the finest didactic poems of the Orient, and Mahmud-Shabistari (died 1317), the writer of the well-known *Gulsán-i-Ráz* or *Rose Garden of Mystery.*

The prose literature is meager in extent, and indifferent in quality, very few of the great writers making use of prose at all. The oldest specimens of prose are Muwaffak's work on pharmacology and Balami's translations of Tabari, both written in the tenth century. The principal historical works are the *Chronicles of Wassaf,* the *Marrow of the Chronicles,* by Khaswini, in 1370, and the *Rauset Essafa,* by Mirchond, written about 1450.

During the last century Persia has produced three poets of a high order of genius, Kaani of Shiraz, Yaghma of Khorasan, and Mirza Serush of Ispahan, all of whom, both in style and diction, rank almost equal with Hafiz and Sâdi. Kaana in particular is noted for his charm of language, and many of his poems are unexcelled in the Persian tongue.

Apart from the miracle play of *Hasan and Hosein,* the drama of Persia is of recent development and unimportant as literature. The present state of Persian literature cannot be called flourishing, and, save in the field of philosophical speculation, serious studies are rarely attempted.

GREEK LITERATURE.

Greek literature is the source from which all European literature has mainly sprung; nor is its quickening energy abated by the centuries. In ethics and logic, as in geometry, the Greeks laid the foundation of all modern thought. Their literature is preëminently original, as befits a race remarkable for its creative genius. The beauty of the mind expressed itself in beauty of form and language. In poetry the Greeks perfected for us the principal types—the epic, lyric, and dramatic; in prose they fashioned well-defined types to suit particular needs—historical, oratorical, philosophical.

Greek literature may be divided into three periods: (1) the Early Literature, from Homer to 475 B. C.; (2) the Attic Literature, from 475 B. C. to 300 B. C.; and (3) the Literature of the Decadence, from 300 B. C. to 529 A. D.

I. The Early Literature. During the early period of Greek literature epic poetry flourished. There are no extant records of any poetry previous to the immortal poems of Homer—the *Iliad* and the *Odyssey.* But these epics were not the crude efforts of a primitive race struggling to record its minstrelsy in the vulgar tongue. They are the finished products of a poetic age, and reveal the skill of a consummate artist. The earliest stages of Greek poetry were closely allied to religion—hymns to the gods, festive marriage hymns, dirges for the dead. In time, poetry assumed a more secular character, and the minstrel (*aoidos*) sang of the deeds of warriors and the clash of war. Narrative or epic poetry gradually took form and became identified with hexameter verse.

The *Iliad* describes one of the final stages in the ten years' siege of Troy, and centers around Achilles and his "wrath." The theme of the *Odyssey* is the return of Odysseus (or Ulysses as he was called by the Romans). It is more domestic than military, and is filled with the wonderful legends that stirred the popular imagination. Little is known of the illustrious bard who wove these legends, lays, and superstitions into an artistic whole. Whether or not the *Iliad* and the *Odyssey* are the work of one poet has been often challenged, but the question admits of no positive proof.

The second author whose works have come down to us is Hesiod. His most important writings are his *Works and Days,* the earliest didactic poem extant, the *Theogony* or *Origin of the Gods,* and the *Catalogues of Women,* of which the well-known *Shield of Heracles* was supposed to be a fragment, although the latter is now held to be of later date. A collection of thirty-three so-called Homeric Hymns has descended to us; these consist of epic preludes designed for the use of the rhapsodists.

As is natural to all literatures, the lyric is of later growth than the epic; the poetry of reflection is of later unfoldment than the poetry of observation. In this early epoch of Greek literature elegiac and iambic poetry arose and the lyric had its birth. Archilochus (670 B. C.) is regarded as the father of lyric poetry. Other noted names are Simonides of Amorgus (660 B. C.), and the famous elegists Callinus, Tyrtaeus, Mimnermus, Solon the great lawgiver, Theognis, Phocylides, Xenophanes the founder of the Eleatic philosophy, Simonides of Ceos (480 B. C.), more celebrated as a lyrist, and Hipponax the outcast of Ephesus.

As lyric poetry was inseparable from music its development kept pace with that of the sister art; for in ancient Greece music formed part of a liberal education. The Æolian School of lyric poetry was rendered famous by the works of Alcaeus, Sappho (610 B. C., a woman of surpassing genius), and Anacreon. The most prominent figures of the Dorian School are Alcman, Stesichorus ("marshal of choruses," whose real name was Tisias), Arion, and Ibycus (540 B.C.). Lyric poetry was Dorian in form but national in spirit. With Simonides of Ceos commenced a new era. Pindar (522 B. C.) became the national lyrist of Greece, and with him lyric poetry culminated. The fragments of his work which have come down to us represent every form of lyrical poem including hymns, panegyrics, dirges, choral dance-songs, and *scolia* or festive songs. The only complete poems of Pindar extant are his *Epinicia* or triumphal odes

celebrating the victories gained respectively in the Olympian, Pythian, Nemean, and Isthmian games. During this early period prose writing began among the Ionian Greeks of Asia Minor, though in a crude form.

II. Attic Literature. During the Attic period, from 475 to 300 B. C., dramatic poetry reached its perfection both in tragedy and comedy. Popular devotion to the drama brought about a decline in lyric poetry, though the dramatic art could not be entirely divorced from the lyric, for the songs of the chorus were an essential feature of the Greek drama. The drama attained its highest excellence in the works of the great trilogy of Greek tragic artists—Æschylus the true founder of tragedy, Sophocles, and Euripides. Besides "satyric" dramas 70 tragedies are attributed to Æschylus, 113 to Sophocles, and 92 to Euripides. Only seven of the tragedies of Æschylus now remain to us: *Prometheus, Seven against Thebes, Agamemnon, Choephori, Eumenides,* the *Supplicants* and the *Persians.* Sophocles was the most perfect tragic writer of classic times. His dramas are marked by skillfully woven plots, clearly delineated characters, and artistic development of the stories. He introduced improvements into the Greek drama, increasing the number of actors from two to three, which was the greatest number allowed on the stage at any one time. His extant plays are: the trilogy of *Oedipus the King, Oedipus at Colonus,* and *Antigone;* the *Death of Ajax;* the *Maidens of Trachis;* the *Philoctetes;* and the *Electra.* These plays of Sophocles give expression to the age of Pericles on its higher moral and intellectual side. Euripides (480 to 406 B. C.) introduces a new order of ideas. His characters are essentially natural and his dramas are marked by great pathos combined with elegance of language; they however lack the artistic finish of the plays of Sophocles. His leading tragedies are *Alcestis, Medea, Iphigenia among the Tauri, Hippolytus, Hecuba,* and *Ion.* The *Cyclops* is the only specimen of a satyric drama that has come down to us.

Like tragedy, Greek comedy originated from the worship of Dionysus. Attic comedy began to take artistic form about 470 B. C., and in the hands of the three great dramatists, Cratinus, Eupolis, and Aristophanes, it reached its highest perfection. The comedies of Aristophanes form a satire on the daily life of the Athenians, and partake somewhat of the nature of burlesque. Aristophanes was great not only as a satirist but as a poet. After his death comedy became more purely social than political, and was represented by Antiphanes, Alexis, and Philippus. The "New" comedy, which flourished chiefly from 320 to 250 B. C., is represented by the poets Menander, Philemon, and Diphilus.

Literary prose was late in being developed, and until the time of the Persian wars the epic was found all-sufficient. During the Attic period the Greeks perfected a prose literature in history, oratory, and philosophical dialogue, and with this new development, coincidental with the passing away of political freedom, strictly creative art is left behind, and we enter an era of learned productions in science and literature. Herodotus, who lived in the fifth century B. C., is regarded as the "father of history," as he was also the first artist in prose. Thucydides may be styled the first philosopher of history. The third historian of the period is Xenophon, whose principal works are the *Anabasis,* the *Cyropaedia,* and the *Memorabilia.*

The most finished specimens of prose are contained in the works of the Attic orators: Antiphon, Andocides, Lysias, Isocrates—the founder of literary rhetorical prose, Isaeus, and Demosthenes—the greatest orator the world has ever produced. The chief contemporaries of Demosthenes were Æschines, Lycurgus, Hypereides, Deinarchus, and Demades. The decline of oratory began with Demetrius Phalereus, who flourished about 318 B. C.

The Greeks were the first nation to separate philosophy from religion. The untrodden field of philosphical thought was entered by Thales of Miletus and his successors, Anaximander and Anaximenes, about six centuries before Christ. The Pythagorean and the Eleatic schools still further grappled with the mysteries of existence. The doctrines of the atomistic philosophers were followed by those of Anaxagoras and the sophists. Then the master mind of Socrates introduced a new method into the inquiry. Socrates left no writings, but fragments of his teachings are preserved for us in the works of his disciples, more especially Xenophon, and the most celebrated philosopher of any age—Plato (429-347 B. C.). No "profane" teacher held a purer conception of God, nor has any writer embodied his thoughts in language more exquisite. His *Republic, Phaedrus, Timaeus, Critias,* and his famous Dialogues, are all masterpieces of literary genius.

The first of Greek scientists, Aristotle (384-322 B. C.), presents us with concise and unadorned reasoning. He was the founder of logic, and discovered the syllogism. His *Ethics* and *Politics* and his conceptions of what is now termed biology have exercised a far-reaching influence on Western thought. After Aristotle the productive energy of Greek philosophy began to decline. Various schools of philosophy flourished about the beginning of the third century B. C.: the minor Socratic schools (Megarics, Cynics, and Cyrenaics), the Epicureans, and the Stoics.

III. The Literature of the Decadence. This may be subdivided into two periods: the Alexandrian, 300-146 B. C., and the Graeco-Roman, 146 B. C.-529 A. D. When the glory departed from Athens after the conquests of Philip of Macedon and Alexander the Great, the city of Alexandria became the center of literature and art. The poetic Pleiades which assembled there consisted of Lycophron, Aratus, Nicander, Theocritus, Philiscus, Æantides, and Homerus. Poetry became artificial in style and derivative in character. Prose held a prominent place but was devoted chiefly to works of science and learning. Theocritus, the pastoral poet, was the greatest of the Pleiades, while with Apollonius Rhodius, Bion, and Moschus, the "silver age" of Greek poetry passed away. The "golden age" had perished with Pindar and his great contemporaries.

Science and learning are represented by Zenodotus, Aristophanes of Byzantium (200 B. C.), Aristarchus, Apollodorus, Euclid, Archimedes, Eratosthenes, the founder of scientific chronology, and the historians Manetho and Berosus.

The first part of the Graeco-Roman period, that is, from the Roman conquest of Greece to the end of the Roman Republic (146-30 B. C.), was devoted to literary and scientific research, and produced a number of histories, lexicons, miscellanies, and the like. The most talented of the historians was Polybius, who ranks next below Herodotus and Thucydides. During the latter part of this era, namely, from Augustus to Justinian (30 B. C.-529 A. D.), a number of writers arose, many of them being more remarkable for industry than for literary merit: Dionysius of Halicarnassus; Plutarch, whose celebrated *Lives* are of undying popularity; Strabo and Pausanias, the geographers; Josephus, the Jewish historian who wrote in Greek; Athenaeus, author of the *Deipnosophistae;* Lucian, Longinus, Libanius, and Heliodorus, noted names in rhetoric and belles lettres; Epictetus, Marcus Aurelius, and the Neoplatonists Plotinus, Porphyry, and Iamblichus, who represent the philosophic thought of the epoch.

No poetry of high merit was produced during these years of decadence. Æsop's fables were versified by Babrius; other notable writers of verse were Oppian, Nonnus, and Quintus Smyrnaeus. The so-called *Sibylline Oracles* and the *Greek Anthology* contained the remainder of all that is interesting or pleasing in the verse of this age. In 529 the schools of heathen philosophy were closed by order of Justinian, and the edict emphasized the fact that the old literature of Greece was dead.

LATIN LITERATURE.

Though all divisions are arbitrary, it will be found that Latin literature divides naturally into six periods, viz.:—

I. A period of crude beginnings, before literature was established, extending from the founding of Rome to the end of the First Punic War (240 B. C.). These beginnings are limited to simple and often coarse ballads, farces, and mimes, popular among the rustics at fairs and merrymakings. It was not until the Romans came into closer contact with the cultured Greeks who lived in the cities of southern Italy that they became aware of their great literary inferiority.

II. A second period, which for lack of a better name may be called the early period of Roman literature, extends from 240 B. C. to 80 B. C. After Rome had conquered for the time her arch-enemy, Carthage, in the First Punic War, she found time to devote herself to the arts of peace. The leisure class turned to a study of Greek culture, and for a time, at the beginning of this period, the literature of Rome consisted chiefly of translations of Greek models into Latin. Livius Andronicus (about 284-204 B. C.), a Greek captive from the taking of Tarentum in 272 B. C., translated Homer's *Odyssey*, fragments of which remain. But the real founder of Latin poetry was Gnæus Nævius (died 204 B. C.), who wrote tragedies and comedies that were very popular with his countrymen. Titus Maccius Plautus (about 254-184 B. C.) displays the greatest genius and a surprising mastery over the difficulties and limitations of the Latin language in his comedies. While we have only very few fragments of the works of his predecessors, we have no fewer than 20 plays from his pen. Great names in Latin literature now follow very rapidly. Quintus Ennius (239-169 B. C.), more popular than Plautus, was styled "the Father of Roman Poetry" and is memorable for his *Satires* and *Annales.* Quintus Fabius Pictor (born about 254 B. C.) was the first important prose historian. The familiar Marcus Porcius Cato (234-149 B. C.), or Cato the Censor, among other great literary qualities was the first Latin orator to write down his speeches. Alimentus (prætor in 210 B. C.) wrote his annals in Greek. The six plays of Terence (about 185-159 B. C.), derived from Greek sources, are faultless in diction and full of merit. Gaius Lucilius (180-103 B. C.) is called "the Father of Roman Satire." The last of the great Latin tragic poets, Lucius Attius (170-94 B. C.), closed the school of the old character-drama. Lucius Afranius closed the old Latin comedy school. Nor must the Gracchi be forgotten in the department of oratory, though their chief characteristic was vehemence.

III. The third period is known as the Golden Age, the Classical Period, or the Ciceronian Period (87-43 B. C.). The latter part is known as the Augustan Age, in which a new spirit is exhibited in Roman literature. In didactic poetry Lucretius surpassed his Grecian masters by the force of thought and the splendor of diction which characterize his great philosophical poem on the origin of the universe. Catullus attempted various styles of poetry, in all of which he obtained eminent success. His lyric and elegiac poems, his epigrams and satires, are marked by singular versatility of feeling, frequent flashes of wit, and rare felicity of expression. Among the elegiac poets, of whose genius we still possess the remains, the highest distinction was gained by Tibullus, Propertius, and Ovid. The former of these poets was pronounced by Quintilian to be the greatest master of elegiac verse; Ovid possessed an uncommon fertility of invention and ease of versification; while Propertius tempers the voluptuous cast of his writings with a certain dignity of thought and vigorous mode of expression. The great lyric poet of the Augustan age is Horace, whose graceful and sportive fancy, combined with his remarkable power of delicate and effective satire, continues to make him a favorite with all who have the slightest tincture of classical learning.

The noblest production of this period, however, is the *Aeneid* of Virgil, which, with his elaborate poem on rural affairs, the *Georgics*, and his sweet and tender pastorals, or *Eclogues*, fairly entitles him to the position, which has been given him by universal consent, of the most gifted epic and didactic poet in Roman literature.

The writings of the Latin prose authors, taken as a whole, betray a higher order of genius and cultivation than the works of the poets. In this department the pre-eminence belongs to Cicero, whose various productions in eloquence, philosophy, and criticism are among the most valuable treasures of antiquity. In history, Cæsar, Sallust, and Livy are the most prominent names, who, each in his own peculiar style, have left models of historical composition which have been the admiration of every subsequent age. The literature of the Augustan

period partook of the general character of the Roman people. Devoted to the realization of practical objects, with slight tendencies to the ideal aspect of things, and absorbed in the exciting games of politics and war, the Romans had little taste either for abstract speculation or for the loftiest flights of poetical fancy. Hence no new system of philosophy was produced in their literature; their best poets were essentially imitative; and of all branches of study, those connected with popular eloquence were held in the greatest esteem.

IV. The fourth period, to mark the decline and its inferiority to the period immediately preceding, is often called the Silver Age. It is post-classical, and receives many important contributions from Spain. It is counted as extending from 17 B. C. to about 130 A. D. While more of the writings of authors of this period survive, they are of only secondary importance. The two Senecas, Mela, Lucan, Columella, Quintilian, Martial, and others were of Spanish origin. The despotic Tiberius (reigned 14-37) exercised a markedly depressing effect upon Roman literature by discouraging it so that men dare not praise the deeds of the past nor record those of the present. Yet the fables of Phædrus in adaptation of those of Æsop, and the great medical work of Celsus belong to this reign. The greatest writings of the succeeding reigns were the philosophical works of Seneca (4 B. C.-65 A. D.). The greatest writer of Vespasian's reign was Pliny the Elder, whose zeal for scientific research caused his death in the destruction of Pompeii by the eruption of Vesuvius. Martial, the court poet of the Emperor Domitian, is the creator of the epigram as we know it, for he invented the use of the sting which the real epigram carries with it. Sextus Julius Frontinus (40-103) was perhaps the most scientific writer of all the Romans. The noblest literary works of the whole period of the Roman Empire are those of the reign of Nerva and Trajan, covering the period from 96 to 117. It is graced by the names of Tacitus, Juvenal, and Pliny the Younger.

V. The fifth period covers the time of the Middle Empire during the second century, marked by the writings of authors of African origin and those of the Early Christian writers. Gaius Suetonius Tranquillus (75-160), author of *Lives of the Caesars*, Florus, Fronto (about 100-175), and Gaius the Jurist (about 110-180) were the chief writers in the reign of Hadrian. Aulus Gellius, author of *Noctes Atticae;* Lucius Apuleius, the rhetorician and philosopher; and the earliest literary work in Latin on Christianity, the *Octavius* of Felix, are of greatest interest in the reign of Marcus Aurelius. In the reigns of Commodus and Severus, Tertullian of Carthage (about 150-230), the defender of Christianity, and Papinian the Jurist are the greatest names.

VI. The sixth and closing period, covering the years from the third to the sixth centuries, marks one of decline in literature from a purely literary point of view. Interest in the numerous writers of the period attaches to subjects upon which those learned men wrote. Saint Cyprian, Bishop of Carthage; the Christian poet Commodius; Lactantius; Avienus; Ausonius; Prudentius; Saint Ambrose, Bishop of Milan; Hieronymus or Saint Jerome; Donatus, the grammarian; Claudianus; Saint Augustine; Bishop Hippo; Appolinaris Sidonius, Bishop of Clermont; Dracontius; Boethius the philosopher; and Cassiodorus, author of the *World-Chronicle*, are among the last names memorable in the department of Latin literature.

ITALIAN LITERATURE.

There is no existing record to show that Italian—the latest developed of the Romance languages—was used for literary purposes before the thirteenth century. Unlike those of France and Germany, the beginnings of Italian literature were not simultaneous with the struggles of a rising people. The nation was versed in the art of expression in other tongues, which accounts for the rapid development of the literature when once the vernacular became a medium for the master minds. At the outset Italy drew mainly from the literature of France, and imitated the lyrics of the troubadours and the heroic songs of the trouvères. Italy had no national epic of its own. The first awakening of Italian poetry was in Sicily in the time of Frederick II., the great patron of letters. Soon afterward religious poetry flourished in Umbria, due to the rise of the two orders of St. Francis and St. Dominic. The drama sprang into being from the same impulse; the *Laude Spirituali* gradually developing into the *Devozione* and the *Rappresentazione*. Meanwhile the poets of Tuscany, stimulated by the influence of Provençal poetry, founded a less conventional school of writing, and established the preëminence of the Tuscan dialect. Three poets are worthy of mention in connection with this school: Guinicelli (1220-1276) the founder, Cavalcanti, and Cino da Pistoja. Of early prose writings the oldest specimen extant is a register of household expenses by Matasala di Spinello of Siena, which, however, cannot be classed as literature. The letters of Guittone d' Arezzo are the earliest existing monument of literary prose; but the first writer of any considerable work was Malespini, who wrote a history of Florence to the year 1282. The real founder of Italian literature is Dante (1265-1321), for previous to him there is not an author of the first or even the second rank. Out of the crudest materials this mighty artist fashioned a monument whose sublimity of conception is equaled by the grandeur and delicacy of his art. The destiny of Italian literature was fixed and defined by his great epic, the *Divina Commedia*, and the era of the Renaissance was ushered in. In this world's classic, Dante voices the beliefs and aspirations of the Middle Ages. Guided by Vergil, he makes a visionary journey through the dread regions of the Inferno and the circling abodes of Purgatory; thence led by the saintly Beatrice he beholds with a seer's vision the manifold glories of Paradise. The greatness of the poem was instantly recognized, and time will never sully the brightness of its fame. Two more names—Petrarch, the greatest Italian lyrist, and Boccaccio, the father of Italian prose—complete the *triumvirate*. Petrarch (1304-1374), "the laureat poete," as Chaucer called him, was the first to place Italy in the van of European literature. He revived the study of the Greek and the Latin authors and restored

the republic of letters. His fame now rests not on his Latin works but on his *Canzoniere* or lyrical poems, inspired by his love for Laura. The exquisite beauty and perfection of these poems place him only a little lower than Dante himself. Boccaccio (1313-1375) by his *Decameron* endowed Italy with a classic prose and earned the distinction of being the first modern novelist.

The century from the death of Boccaccio to the rise of Lorenzo de' Medici is the most barren in the history of Italian literature. Attention, however, was given to the development of the drama and the romantic epic. The most famous of the early dramatists are Feo Belcari (1410-1484), Castellani, Antonia (wife of Bernardo Pulci), Rosselli, and the author of the first classical Italian drama, Angelo Poliziano (1454-1494). The first to raise the literature from the low estate into which it had fallen was Lorenzo de' Medici, named "the Magnificent" (1448-1492), who gave a great impetus to the study of the vernacular and himself led the way with many graceful poems. His court was the home of artists and men of letters. Among them were Boiardo, author of the *Orlando Innamorato*, and Pulci, author of the epic, *Morgante Maggiore*. One of the features of the times was the founding of the academies of Florence, Naples, and Rome.

In the literary epoch following that of the Renaissance every form of art was perfected, and the Italian character of the language was combined with classicism of style. This Golden Age lasted from 1494 to about 1560. Of the prose writers two figures tower above their contemporaries—Machiavelli and Guicciardini, the chief originators of the science of history based on observation. Machiavelli (1469-1527) is the Thucydides of Italy, as the great Florentine historian Villani in the previous century is her Herodotus. He holds a position in prose similar to that of Dante in poetry. His three most famous works are *The Prince*, *The Art of War*, and the *History of Florence*. No book has aroused more controversy than *The Prince*. By many it has been regarded as a manual for tyrants, and true it is that no book has wrought more harm, for it was the daily companion of the most noted despots of Europe. Yet it was nothing more than the dream of a philosophical patriot for the restitution of liberty to his country. Less illustrious but of a more practical genius is the historian Guicciardini (1482-1540), whose *History of Italy* is one of the most valuable works in the language. Of lesser historians of this period Nardi, Segni, Camillo Porzio, and Cardinal Bembo may be noted. A characteristic product of the age, due to the study of Plato, is the dialogue; and the most typical example of these polished didactic colloquies is the *Cortegiano* of Castiglione (1478-1529). Ariosto (1474-1533) is a great and essentially national poet, who assimilated the romance of chivalry to the style and models of classicism. His great poem, *Orlando Furioso*, the result of ten years' toil, eclipses all previous romances, and has never since been equaled. Its success inspired many imitations, the two most important of which were the *Girone il cortese* of Alamanni and the *Amadigi* of Bernardo Tasso, both of them feeble productions. Not more successful was Trissino (1478-1500) who in his *L'Italia Liberata* made the first attempt to write Italian epic poetry in blank verse. Torquato Tasso published his famous work *Jerusalem Delivered* in 1581. It is a poem of faultless beauty, and is the finest of all epics after the *Aeneid* and *Paradise Lost* (for *Orlando Furioso*, to which it is commonly compared, is not really an epic at all). Tasso achieved immediate success with *Aminta*, a pastoral masque which attracted a host of imitators. The best of these was Guarini, the author of the *Pastor Fido* (1537-1612).

From 1559 began a period of decadence, known in the history of Italian literature as the *Secentismo*. Lyric poetry was represented by mediocre rhymesters. Galeazzo di Tarsia, Vittoria Colonna and her sister poet, Gaspara Stampa, are amongst the noteworthy names. Though in pure literature the age was one of decline, it was an era famous for the advance of natural science, and incidental reference may be made to the names of Galileo, Cassini, Renieri, Torricelli, Valisnieri, Viviani, Bellini, and Redi. The chief name in Italian literature during the seventeenth century is that of Tassoni (1565-1635), whose masterpiece, *La Secchia Rapita*, is a poem of European reputation. Of the minor poets who emulated the extravagances of Marini (1569-1625), the most famous were Guidi, Testi, Ciampoli, Menzini, and Filicaja. Some of the poems of Filicaja reach a high degree of excellence, and his name recalls the famous sonnet, *Italia, Italia, a cui feò la sorte*. A mania for rhyming seized the nation, and dates from the inauguration of the "Arcadian Academy" in 1692. But the Arcadians, the last of whom was Frugoni (1692-1768), replaced with effeminacy the bombast of the Marinists, and only succeeded in impoverishing the literature. But one department of the fine arts, the opera or musical drama, achieved distinction through the genius of Metastasio (1698-1782), who was both a consummate playwright and a true lyric poet. The only other writer of the first rank during this period is Goldoni, the reformer of Italian comedy. Voltaire said of him that he had rescued Italy from the hands of the harlequins. His great rival, Count Carlo Gozzi, won success on the Venetian stage by his *fiabe* or dramatized fairy-tales. Alfieri (1749-1803) swept Italian tragedy with his drastic reforms. Though his writings display what Matthew Arnold calls a "narrow elevation," his style is manly, and he is undoubtedly one of the grandest figures in Italian literature since Tasso. Giuseppe Parini is interesting as being the first Italian poet who shows decided traces of English influence. His *Giorno* is suggestive of Thomson's *Seasons*, but the satire is worthy of Pope. Parini opened the way to the fine school which was now to arise, that of Foscolo, author of the lyrical masterpiece, *I Sepoleri;* Monti, whose *Bassvilliana* gave him rank as the first epic poet of his time; Pindemonte, whose best work is his *Antonio Foscarini;* Manzoni, the representative of the romantic and mediæval reaction of the post-Napoleonic age, and the author of the world-famed *I Promessi Sposi;* Leopardi, whose blank verse is the finest in Italian literature; Niccolini, renowned as a poet and a classical dramatist; Giusti, the Tuscan satirist; Gioberti,

author of the great book, *Il Primato d'Italia;* Pellico, the writer of the famous work, *Le Mie Prigioni.* Love of country is the dominant thought of the nineteenth century writers; and though these include no name of premier rank, yet the pervading spirit of liberty and patriotism lends to the literature of the period a unity and dignity which command our admiration. Aleardo Aleardi (1812-1878) has failed to retain his popularity. His poems are graceful and full of feeling but lack force. Prati (1815-1884), called by Carducci "the last of the troubadours," produced several volumes of lyrics, whose fluency borders on improvisation. Gabriele Rossetti (1783-1854) was the most noted poet in southern Italy. His greatest compositions are *Iddio e l'Uomo* and *L'Arpa Evangelica.* Carducci (1835-1907) is the foremost Italian poet of the past half century, and the greatest force in recent Italian literature. Many of his lyrics are widely known, and the admirable translations of the American, Mr. Sewall, have done much to increase their popularity. Carducci is a critic, too, of no mean order. Zanella (1820-1889) is a poet whose fame has gone on increasing. *The Vigil,* a meditation on evolution, is perhaps his masterpiece. His lyrics are exquisite. D'Annunzio (born 1864) is a second Marini, but his naturalism too often borders on extravagance. In his sonnets he has enriched Italian poetry with one new form of beauty, the *rima nona.* The poet of the social revolution is Mario Rapisardi, a Sicilian; while the woes of the poor are expressed by a lady, Ada Negri. Arnaboldi excelled in grave and dignified lyric, not unlike Matthew Arnold. Arturo Graf, Fogazzaro, Panzacchi, Edmondo de Amicis (celebrated as a traveler), Capuana, Marradi—translated specimens of these and other contemporary poets may be read in G. A. Greene's *Italian Lyrists of To-Day.*

The serious drama is represented by the tragedies of Cavallotti and the New Testament trilogy of Giuseppe Bovio; and the humorous by the comedies of Roberto Bracco and Giacinto Gallina.

Lengthy story-telling seems to be foreign to the genius of the people, and the novelists are mostly of inferior rank. One or two, such as Matilda Serao, Barrili, and Farini have acquired a wider reputation. Two names stand out, however, as masters of fiction, the poet, D'Annunzio, author of *La Vergine della Rocce,* and Giovanni Verga, whose novels reflect the social history of Sicily. In the field of literary criticism the two chief names are Settembrini and De Sanctis. Of modern historians, Villari, the biographer of Savonarola and Machiavelli, and Comparetti, author of *Virgilio nel Medio Evò,* have won a lasting reputation as writers. We cannot conclude without a reference to Giuseppe Mazzini (1805-1872), that "swift, yet still, Ligurian figure; merciful and fierce; true as steel, the word and thought of him limpid as water," as Carlyle finely portrays him. His writings greatly influenced the destinies of his beloved Italy.

SPANISH LITERATURE.

Spanish literature has its root in the old heroic songs and *fabliaux* of early France and Italy. No texts of earlier date than the twelfth century have come down to us. The two oldest extant specimens of Castilian verse are the *Poema del Cid,* and the *Misterio de los Reyes Magos.* The *Cid* is national in tone, and is an epic or *chanson de geste* of about four thousand lines, celebrating the adventures of the great national hero, Ruy Diaz de Bivar (died 1099), better known by the Arabic surname of the Cid. His exploits are also recounted in the *Rhymed Chronicle,* which some suppose to be of older date than the *Poema.* In the thirteenth century religious and didactic poetry grew up, the most noted representative of which is Gonzalo de Berceo (1198-1268). Under Alfonso the Learned (1226-1284) the language became a polished literary medium. Alfonso, like Bacon, took all knowledge as his domain, and in every branch he shone preëminent. He was the creator of Castilian prose. The second great prose-writer was his nephew, Don Juan Manuel, who brought the language to perfection. His best known work is *Conde Lucanor,* a collection of 51 didactic tales. Juan Ruiz (1300-1350), better known as the Archpriest of Hita, is the most original mediaeval Spanish poet. His *Libro de Cantares* gives us a highly-colored picture of the manners of the age. The *Rhymed Chronicle of Alfonso XI.,* discovered in 1573 by Diego Hurtado de Mendoza, was written by Rodrigo Yañez, who is the first to use lines of eight syllables for the purpose of epic narrative. A writer who did not come under the prevailing influence of Provençal and Italian poetry is Pedro Lópezde Ayala (1332-1407), whose best-known work is the *Rimado de Palacio.* He is equally distinguished as a writer of prose. A representative writer of the fifteenth century is Iñigo Lôpez de Mendoza, Marqués de Santillana, who wrote both in prose and verse, and was an imitative rather than an original genius. The official court-poet of the time of Juan II. was Juan de Mena, known to his own age as the "Prince of Castilian poets." In contrast to the artificiality of such writers as these is the celebrated elegy of Jorge Manrique on the death of his father, known as the *Coplas de Manrique.* This imperishable poem has been admirably translated by Longfellow. The fifteenth century finds the chivalrous romance established in Spain, and the best example is *Amadis de Gaula.* The introduction of printing presses in 1474 inaugurated an era of translation. Nebrija (1444-1522), the greatest of Spanish humanists, printed his Spanish-Latin dictionary in 1492. It is worthy of note that the first Greek text of the New Testament ever printed was produced by Nebrija at the University of Alcala de Henares, in 1514. Versions of foreign classics were in all men's hands.

With the reign of Charles V. we reach the Golden Age of Spanish literature. Juan Boscán is chiefly noted as having naturalized the Italian eleven-syllable verse. He is seen at his best in the allegorical poems, the *Octava Rima.* In point of merit he is eclipsed by his comrade, Garcilaso de la Vega (1503-1536), a poet of refinement and distinction, whom both Cervantes and Lope de Vega agreed in calling the first of Castilian poets. He certainly is one of the greatest of Spanish poets. As a reproducer of the cadences of the Vergilian Eclogue, his success is unique. Diego Hurtado de Mendoza

(1503-1575), one of the chief figures in the history of Spanish politics and letters, cultivated both the national and the Italian forms of poetry, but lent his weight to the supremacy of the latter. He is the author of two historical works: The *History of the Rebellion and Chastisement of the Moriscos* and the *Guerra de Granada*. Amongst the greatest Spanish poets few, if any, rank higher than Fernando de Herrera (1534-1597). He is the first purely lyrical poet of Spain. Another eminent poet was his contemporary, Luis Ponce de León (1529-1591), who was no less great in prose. The greatest of all Spanish mystic books, *Los Nombres de Cristo*, together with his translation of the Song of Solomon, give him rank with the masters of Castilian prose. The moral and mystic writings of Santa Teresa (1515-1582) have justly won a reputation which is world-wide. She is a sublime figure in the annals of religious thought, and is the only woman who stands as an unchallenged equal with the great writers of literature. Crashaw's famous line will be recalled:—

"O 't is not Spanish but 't is Heaven she speaks."

Her masterpiece is the *Castillo interior*.

At the close of the sixteenth century, Spanish literature, with the exception of the drama, had become stereotyped; the Italian influence had set its seal on form and matter; the chivalresque romance was on the wane; the picaresque novel, modeled on the unclaimed *Lazarillo de Tormes*, was losing its freshness; and until the appearance of Cervantes no genius had arisen to introduce any new type. Miguel de Cervantes Saavedra (1547-1616) is the most illustrious figure in Castilian literature. He is a great creative genius and a universal humorist. He ignored the conventions of the times, and, drawing closely to humanity, he created types which are eternal. As a dramatist he is seen at his best in the tragedy of *Numancia*, and in his comedy, *Trato de Argel;* but it is as the author of the immortal *Don Quixote* that his fame is sung throughout the world. This work is by no means a model of literature, nor does it show Cervantes at his best as a writer of prose; but the strong human interest that underlies its humor is the reason for its greatness. It is a masterpiece of unsurpassed invention, and is a work for all times and all nations. A great creative writer, but lacking the universal note of Cervantes, is his contemporary, Lope Felix de Vega Carpio (1562-1635). Lope was the creator of the modern drama. He was a prodigy of learning and inventiveness, and was the most voluminous writer of ancient and modern times. The great authors of other nations drew upon the treasures of his art; his plays have been treated as models by all later Spanish writers, and his influence has been unique. As a poet he achieved fame, though not greatness. Many of his carols (*villancicos*) treating of the childhood of Jesus are very beautiful. The miscellaneous works of this versatile writer fill more than twenty large volumes. The most eminent of the minor poets of this epoch was Góngora (1561-1627), whose earlier verse is marked by fine workmanship and rare lyrical melody. But he was the founder of a school which is known as *culturanismo*, and Gongorism soon become synonymous, for all that savors of bad taste, affectation, and euphemism. A more widely gifted writer is Quevedo (1580-1645), who attained some measure of success in almost every branch of literature, though never reaching the first rank in any one of them. The chief writers of the so-called Aragonese school were the brothers Lupercio and Leonardo de Argensola, whose works are scholarly but artificial. Less exclusively classical is Manuel de Villegas, an Anacreontic poet.

Turning to the historians, a new epoch is marked by the production of the *Anales de la Corona de Aragon* by the learned Gerónimo de Zurita. This is the most trustworthy authority on the period, though it is hardly distinguished as literature. Very different is the *History of Spain* by the greatest of Spanish historians, Juan de Mariana. It bears the defects and limitations of the age, but its prose is above criticism.

Calderón (1600-1681) is the greatest Spanish dramatist by reason of his being the greatest poet who espoused the drama. He created no new forms but developed the seeds sown by Lope. His published works consist of about 120 plays and 80 autos or mystery-plays, besides some light interludes and occasional verses. His best known plays are the *Principe Constante*, *El Pintor de su Deshonra*, and the two philosophical dramas *La Vida es Sueño* and *El Mágico Prodigioso*. As a writer of autos he stands supreme. He is not an universal dramatist, but the most representative Spaniard of the seventeenth century. A notable dramatist of the Golden Age is Gabriel Téllez, better known by his pseudonym "Tirso de Molina" (1571-1648). His most famous play is the *Burlador de Sevilla*, which is based upon the legend of Don Juan. The religious side of the Spanish character is represented in *El Condenado por Desconfiado*, while Tirso's mastery in lighter comedy is shown in his *El Vengonzoso en Palacio*. His fame, like Lope's, is growing every day. During a period of one hundred years the fertility of the dramatic authors is unparalleled. Plays dealing with the problems of human life or studies in human character are foreign to the Spanish genius, but the form in which Spain excels is the play depending for interest entirely on its plot, and the masterly combinations of stock characters. The "sword and cloak" plays were dear to the hearts of the people. The period of Spanish literary glory coincided, as in other countries, with the most brilliant epoch of military glory and national activity. But when reverses came, Spanish literature decayed. The old ideals were still clung to, but they were no longer in keeping with the spirit of the times.

The best attempt at formal epic in Spanish is the *Araucana* of Ercilla, written during the campaign against the Araucanian Indians in Chile. There is little in it however that merits the name of poetry.

With the succession of the Bourbons, French influences became dominant in Spain. The old traditions were dead, and the ground was cleared for fresh developments. When Spain awoke from her lethargy, the eighteenth century was dead, the old literature was gone, the foreign influences had not taken root, and the vacant field was about to be occupied by the romantic

school and the modern novelist. During the age of the Bourbons, one of the foremost figures was the poet Luzán, whose *Poética* sets out his destructive criticism. Other reformers were Feijoo, Sarmiento, Isla, and Meléndez. Isla was the greatest prose writer of his time.

Under the unifying influence of the French wars Spanish literature responded to the renewed activities of the nation. During the struggle for independence, the verses of Manuel José Quintana (1772-1857) stirred the depths of patriotism. Yet even his *Call to Arms against the French* is written in the French classical style, and is Spanish only in sentiment. The classical poets of the early years of the nineteenth century number many other names of minor rank. The two chief poets of the Romantic school are the Duque de Rivas (1791-1865), who wrote *Al Faro de Malta* and *El Moro Expósito*, and José de Espronceda (1810-1842), the greatest Spanish poet of the last century. Espronceda modeled his verse on that of Byron, and was the hero of his own writings. His famous ode *To Jarifa*, his fragmentary *Diablo Mundo*, and his patriotic odes *A la Patria* and *Al Dos de Mayo*, are the most notable of his compositions. His successor, Zorrilla (1817-1893), is more widely known by his plays, *Don Juan Tenorio*, *El Zapatero y el Rey* and *Traidor, Inconfeso, y Mártir*. Among his more prominent contemporaries may be noted A. G. Gutierrez, the author of *El Trovador;* J. E. Hartzenbusch, who wrote the popular play, *Amantes de Teruel;* Manuel Tamayo y Baus, whose best and most ambitious play is *Un drama nuevo* (1867); and Gustavo Becquer (1836-1870), who is represented by three volumes of prose legends and *Rimas*. Some of the latter are beautiful and full of pathos.

Spain has not contributed much to modern philosophy; but her theologians have always been of good repute. Two names suggest themselves: Don Jaime Balmés, author of the famous *Cartas á un Escéptico*, and Don Juan Donoso Cortes, whose most celebrated work is *An Essay upon Catholicism, Liberalism, and Socialism*. One of the most brilliant masters of prose is Mariano José de Larra (1809-1837). An essayist of somewhat the same stamp is Serafin Estébañez Calderôn (1799-1867); but more popular is Mesonero Romanos, author of *Escenas Matritenses*. Cecilia Böhl von Faber, better known by her pseudonym, "Fernán Caballero" (1796-1877), is the writer of *La Gaviota*, a novel many times translated.

Of more recent writers, the most eminent are Campoamor, who devised a new poetic *genre* under the name of *doloras, humoradas*, or *pequeños poemas;* Valera, whose *Pepita Jiménez* marks the renaissance of the Spanish novel; Pereda and Galdós, the novelists; Alas ("Clarin"), the critic and writer of one of the best modern novels, *La Regenta;* Emilia Pardo Bazán (b. 1851), the best authoress of the century; and the orator Castelar, who wrote an Italian story called *La Hermana de la Caridad*. The best of the modern dramatists is José Echegaray (b. 1832), who wrote *La Esposa del Vengador* and *O Locura ó Santidad*. The political poet, Gaspar Nuñez de Arce, the Cuban poetess Doña Gertrudis de Avallaneda, and the eminent critic, Marcelino Menendez y Pelayo (b. 1856), author of the remarkable *Historia de las Ideas estéticas en España*, are the last names that call for special mention.

The most exhaustive survey of the subject will be found in George Ticknor's great *History of Spanish Literature*, first published at Boston in 1849. This may also be read in the Castilian version of Pascual de Gayangos and Enrique de Vedia (1851-1856), or in the German of Nikolaus Heinrich Julius (Leipzig, 1852).

PORTUGUESE LITERATURE.

The Portuguese language and literature had their birth in the same era as the kingdom. There is no great Portuguese epic like the *Cid*. The earliest monuments we possess are fragments of the poems of Hermiguez and Egaz Moniz, two knights of Alfonso I. These uncouth ballads are barely distinguishable as Portuguese. For the next two centuries such poetry as existed was imbued with the Provençal spirit, due to the troubadours and jongleurs of Provence, who flooded the peninsula with their minstrelsy. Macias, known as El Enamorado, Cristovão Falcão, João de Menezes, and the more eminent Bernardin Ribeyro, are the first Portuguese poets of any importance. These writers flourished in the fifteenth century, by which time the language began to assume the characteristics of modern Portuguese, and pastoral poetry laid its hold upon the affections of the people. Ribeyro has also left us a fragment of a prose romance entitled *Menina e Moça*. At the beginning of the sixteenth century the wealth and greatness of the nation had reached their zenith, and at this opportune moment appeared Sá de Miranda to stamp his genius on the poetry of his country. Miranda (1495-1558) laid the foundations of a national literature, and gave to poetry a nobler aim and a wider sympathy. Much of his best work is in the Castilian tongue, but his Portuguese writings consist of eclogues, sonnets, epistles, and two comedies. Of these, his epistles, written in flowing verse, are perhaps his most important contribution to literature. His influence was very marked, and, having rescued the national literature almost from barbarism, he was esteemed and imitated by a host of writers. Foremost among these was Antonio Ferreira (1528-1569), who rivals his master in the mark which he has left on the literature of his country. His style is more classical and more polished, and he wrote no single line except in Portuguese. His epistles and odes have won for him the title of the Portuguese Horace. His greatest work, and also the best tragedy in the Portuguese tongue, is *Castro*, based on the tragic history of the Lady Inez de Castro. These two great poets ushered in the most glorious period of Portuguese literature, an age which gave birth to the poets Pedro de Andrade Caminha, Diego Bernardes, Rodriguez de Castro, and Lobo de Soropita, and which culminated in the *Lusiad* of Camoëns.

The genius of Camoëns (1525-1580) looms large in his country's literature, so much so that the two great names, Miranda and Ferreira—the Chaucer and Dryden of Portugal—are almost overlooked even by their countrymen. His great masterpiece, the *Lusiad* (called by the Portuguese *Os Lusiadas*, or the *Lusitanians*), is a magnifi-

cent conception inspired by a lofty patriotism. It recounts the conquests in the Indies and the glory of the Portuguese arms and achievements. This famous epic is almost the only specimen of Portuguese poetry known outside the kingdom. Camoëns wrote a number of sonnets, canzoni, and eclogues, eloquent of the sorrow and melancholy of his life. One of his most noted contemporaries was Gil Vicente, a dramatic author, who may be considered the founder of the Spanish theater, in that he served as a model for Lope de Vega and Calderon. The rage for pastoral compositions reached its height in the time of Rodriguez Lobo, the author of a book on philosophy, besides pastoral romances and fugitive poems. His *Winter Nights* greatly influenced the writers of Portuguese prose, and its Ciceronian style was freely imitated. During the same period flourished Jeronymo Cortereal, who wrote a ponderous epic on the misfortunes of the celebrated Manuel de Sousa Sepulveda. Two other specimens of the Portuguese epic must be noted: the *Ulysses* of Castro, and the *Malacca Conquistada* of Francisco de Sa y Menesez.

The Augustan age saw the beginnings of a new branch of Portuguese literature. The historians vied with the poets in recounting the exploits and conquests of their countrymen. Foremost among them is John de Barros (1496-1571), author of the monumental work, *Asia Portugueza*, and one of the founders of Portuguese prose. His history was continued by Conto. Other noted historians are Castenheda and Bocarro, who dealt with the Portuguese conquests in India; Affonso d'Albuquerque, author of a series of *Commentaries;* Bernardo de Brito (1570-1617), whose reputation rests on his *Monarchia Lusitana*, an incomplete history of Portugal "from the creation of the world" to the rise of the monarchy; Osorio, Bishop of Sylvez (1506-1580), the historian of the troublous reign of King Emanuel. The most voluminous writer of this epoch was Manuel de Faria. He wrote largely in Castilian, but in his native writings he has won distinction by his *Portuguese Europe*, and a number of sonnets and eclogues. His commentary upon Camoëns and his dissertations on the art of poetry established his reputation as a critic. During the national decline following the subjugation of Portugal by Philip II. of Spain, a number of lesser poets abounded, the most notable among them being Antonia Barbosa Bacellar (1610-1663), Andrada, Simão Torezão Coelho, Duarte Ribeiro de Macedo, and Sister Violante do Ceo. Bacellar was the first to devise the *saudade*, a sort of elegy combining love, remembrance, and regret. The eighteenth century opens with the name of Francisco Xavier de Menezes, Count of Ericeyra (1673-1744), a disciple of Boileau, whose *Art of Poetry* he had rendered into Portuguese verse. Ericeyra's most ambitious work is the *Henriquéide*, an epic poem relating the exploits of Henry of Burgundy (the founder of the Portuguese monarchy) against the Moors. Antonio Correa Garçao and the Countess de Vimieiro, author of the tragedy *Osnia*, did their best to revive a moribund drama. The most eminent of the early nineteenth century poets are Antonio Diniz da Cruz e Silva, J. A. da Cunha, and F. M. de Nascimento. The Romantic movement began with Garrett (1799-1854) and Herculano (1810-1877). The latter is more famous as a historian, his *History of Portugal to the End of the Reign of Alfonso III.*, and later, the *History of the Origins and Establishment of the Inquisition*, establishing his reputation as the leading historian of the Peninsula. An ultra-romantic school of poetry was started by Castilho (1800-1875), and included such lyric poets as João de Lemos (1819-1889), Soares de Passos (1826-1860), and Thomaz Rebeiro (1831-1901), author of the patriotic poem, *D. Jayme.* Belonging to no school, and a true son of the people, is João de Deus (1830-1895), one of the chief lyric poets of Portugal. His *Campo de Flores* is remarkable both for its spontaneity and simplicity, and contains a number of such exquisite gems as *A Vida* and *Rachel.* Four more poets call for mention, each of whom is distinguished by a weighty reflection and the influence of foreign models: Anthero de Quental (1842-1891), author of more than one hundred sonnets; Guerra Junqueiro, whose *Death of Don Juan* and *Patria* prove him a master of satire, while his quasi-philosophical *Os Simples* shows him to be a really great poet; Gomez Leal, who wrote the *Claridades do Sul;* and Antonio Nobre (1867-1900), whose lyrics created a sensation by their freshness and lofty inspiration. In comedy the two chief names in modern times are Fernando Caldeira (1841-1894), author of *A Mantilha da renda* and *A Madrugada*, and Gervasio Lobato (1850-1895), whose most popular plays are *O burro do Sr. Alcaide, O Valete de Copas*, and *O testamento da Velha.* The novel shares with poetry the leading place in modern Portuguese literature, and three at least of their novelists are of first rank, viz., Camillo Castello Branco (1825-1890), Gomes Coelho ("Julio Diniz"), and Eça de Queiroz (1843-1900), the greatest of the three, and the founder of the Naturalist school in Portugal. The best novels of Queiroz are *Cousin Basil, Os Maias, The Relic*, and *The City and the Mountains.* As a creator of characters he can hold his own with any European novelist of his day. The leading art critic of recent years is Ramalho Ortigão, who will be remembered chiefly for his *Farpas*, a series of satirical sketches of society written in collaboration with Queiroz. Nor must we overlook the philosophic *Historia de Portugal* and *Portugal Contemporaneo* of the gifted writer, Oliviera Martins (1845-1894). It will be seen that, the drama alone excepted, Portuguese literature during the last century reaches a high level of excellence. That their more eminent writers are not more widely known and appreciated is due to the language being little understood by foreigners generally.

FRENCH LITERATURE.

The earliest literary monument of the French language is found in the Strassburg Oaths of 842, famous alike in history and literature. Few manuscripts, however, have come down to us from before the twelfth century. The form of the language and the trend of the literature were largely determined by two events: the conquest of Normandy by Philip Augustus, and the Crusades which terminated under his grandson. During the twelfth and thirteenth centuries almost every form of literature was attempted.

Since poetry invariably develops before prose in the literature of any nation (for the imagination of infancy precedes the growth of reason), we find *cantilènes*—short historical ballads—and epic poems in abundance. The French Epic is of German origin, the Teuton spirit in a Romance form; and like that of all other nations it had its birth in native minstrelsy. The *Chansons de Gestes*, so called from the *Gestes* or heroic families of early France, were sung by the *Trouvères* and *Jongleurs* to the accompaniment of the *veille*. The *Chanson de Roland*, the MS. of which is in the Bodleian Library, Oxford, is the most famous of these poems, and represents the first real development of French literature. To France we owe the origin of the epic of Arthur, the satire of Reynard the Fox, and the allegory of the Rose. The epic and romance were not so popular in the south, and the lyrics of the troubadours are the chief feature of Provençal poetry. Blondel de Nesle (known by his legendary connection with Richard I.) and Thibaut of Navarre were the most noted lyrists of the Provençal school. The drama, too, was begun in all its varieties, tragedy, comedy, and opera; while history, vernacular homilies, and satire were equally prolific. The oldest extant historical work on contemporary events is Ambroise's *L'Estoire de la Guerre Sainte*, which relates to the Third Crusade (1189-1192). The Fourth Crusade is dealt with in the famous memoirs of Villehardouin (about 1160-1213), the first author of distinction who used French prose as a medium of expression. His *Conquête de Constantinople* has been called a *chanson de geste* in prose. What Villehardouin is to the twelfth century *Jean de Joinville* (1224?-1317) is to the thirteenth and Froissart to the fourteenth. Joinville, in 1309, produced his *Histoire de Saint Louis*, in which he gives an account of the things he had "oralement veues et oyes." During the reign of St. Louis the first French translation of the whole Bible was written at the University of Paris. This became the standard French version of the Scriptures.

The fourteenth century saw a change come over the spirit of the literature; romance was checked, and the *chansons de gestes* were converted into prose. Didactic literature dethroned the tales of chivalry and adventure. Few writers need be noted: Alain Chartier (1386-1440), poet and historian, whose best work is his *Quadriloge*, but who is known to modern readers by the story of Margaret of Scotland's Kiss; Christine de Pisan (1363-1431), whose chief works are her *Cents Ballades*, and the *Livre du chemin de longue étude* directed against the *Roman de la Rose;* Eustache Deschamps (1328-1415), the most prolific poet of his time; Charles d'Orleans (1391-1465), the last of the trouvères, and an admirable poet; Villon (1431-1485), the most important figure of French literature before the Renaissance, and whose poems foreshadow the modern poetry; and Froissart (1335-1410), the celebrated chronicler and lyrist, whose *Chroniques* deal with the history not only of France but of England, Italy, Germany, Spain, and Portugal. Froissart has been well named "the knight-errant of history." The fifteenth century was more remarkable for its prose than its poetry, and Comines (1447-1511) was its most illustrious writer. In reading his *Mémoires* one is struck with the progress the language has made since Froissart. The French Chronicle before Comines was practically only gossip, with random gleams of genius. No abstruse or political work of importance was attempted in French prose before the beginning of the sixteenth century; for the vernacular, though rich in volume, was not flexible or precise enough for serious prose. Latin had stunted the expansion of the language, and a critical spirit had not as yet shown itself. As a molder of French prose, Antoine de la Salle (1398-1462), the chief writer of fiction before Rabelais, deserves to rank with the great chroniclers. Poetry was at a low ebb, and the verses of Crétin and Coquillart may be taken as typical of the fifteenth century.

The sixteenth century witnessed the grand upheaval of the Renaissance and the Reformation, and in no country was the literary result more striking than in France. No later period can show a finer array of poets and prose writers: Calvin, St. Francis de Sales, Montaigne, Du Vair, Bodin, D'Aubigné, Brantôme, Pasquier, Rabelais, Des Periers, Herberay des Essarts, Amyot, Garnier, Marot, Ronsard and the rest of the Pléiade, and the polished satirist Regnier. These created a language and a style able to give expression to their genius. Calvin's *Institution de la religion chrétienne* (1540) is the first really great composition in argumentative French prose. The Pléiade, whose two brightest stars were Ronsard and Du Bellay, revolutionized the language; and in spite of their classical eccentricities they laid the foundations of modern French. The dramatic works of Etienne Jodelle (1532-1573) mark an epoch in the history of the drama. With his *Cléopâtre* he founded modern French tragedy, and modern comedy with his *Eugène*. Literature, in fact, became organized. But the pride of the early Renaissance is Rabelais, whose *Gargantua and Pantagruel* is the work of a great creative mind, and a master of literature. Montaigne, whose *Essays* have never lost their popularity, was a writer of the purest French, and his work is of supreme importance in the history of French prose.

The seventeenth century is the golden era of the French drama and French prose; but, excluding the dramatists, there is not a single poet who belongs to the first rank. Malherbe and Boileau are the two most prominent poets of the latter half of the century, the former being a radical reformer of the language and literature. The most illustrious group of the "Grand Siècle" of Louis XIV. consisted of Descartes, Corneille, Pascal, St. Evremond, La Rochefoucauld, Bossuet, Madame de Sévigné, La Fontaine, and Molière; and these have scarcely a rival in prose, or in the measured verse, half poetry, half prose, which the dramatists affected. In 1635 a great service was rendered to literature by the founding of the *Académie française* by Richelieu. "Le grand Corneille" (1606-1684) is the greatest tragic dramatist of France in the classical style, and as a writer of dramatic verse his place is amongst the giants of the world's literature. The *Cid* and the *Menteur* are respectively the first examples of French tragedy and comedy, which can be termed modern. His masterpieces, *Horace, Cinna, Polyeucte* (the greatest of all Christian tragedies), and *Rodogune* (perhaps the finest of his works), strictly conform to the classical model. Molière (1622-1673) stands foremost in the history of French comedy. He

alone amongst dramatists recognized the value of the stage as a lay pulpit, and his wit enshrined a wholesome moral. The heights of his genius are seen in *Tartufe* and the *Misanthrope;* while his influence on all subsequent writers of comedy is most marked. The tragic masterpieces of Racine (1639-1699) reveal a perfection of workmanship never before attained. The purity and melody of his style and his masterly skill are seen at their best in his *Andromaque* and *Athalie.* But like Molière he ignores the complexity of human character, and his dramatis personæ might well be labeled with some particular type or trait—puppets of the stage and not creatures of the world. This distinguishes the classical dramas from the plays of Shakespeare, and is largely due to the rigid adherence to the Aristotelian unities. No century surpasses the seventeenth in the beauty and precision of its prose. As finished gems, what can excel a peroration of Massillon, a letter of Madame de Sévigné, a maxim of La Rochefoucauld, a *caractère* of La Bruyère, a *pensée* of Pascal, an *oraison* of Bossuet, when each writer is seen at the best? But the first complete model for classical prose was supplied by the *Discours de la Méthode* of Descartes, which was not only an epoch-making book of philosophy but also of French style. The essays of Jean Guez de Balzac (1594-1655) and the *Recherche de la Vérité* of the philosopher Malebranche (1631-1715) were remarkable contributions to French literature. The most popular narrative of France, the *Télémaque* of Fénelon, was produced in this period; so too were the writings of the great wit, St. Evremond, which influenced Voltaire and through him all later literature.

The eighteenth century was dominated by the Academy, to which every French author strove to belong. The effect at first was salutary, but in time the Academy acted as a check on spontaneous genius; hence the eighteenth century is not eminent in belles lettres, but only in serious branches of study. The most important French literary production was the *Encyclopédie* edited by Diderot. Voltaire (1694-1778), one of its contributors, won fame in almost every branch of letters. As a dramatist his three best works are *Zaïre, Mérope,* and *Tancrède.* As a writer of short tales he excels, and in the use of satire and *persiflage* he is a past master. Many of his phrases are now household words. As a historian his best work is the *Siècle de Louis Quatorze.* Chénier (1762-1794) is the greatest poet of the century; while Crébillon the Elder, Beaumarchais (author of the *Barbier de Séville* and the *Mariage de Figaro*), and Lesage are its most noted dramatists. Diderot the encyclopædist was not at his best in his plays. The first and greatest novelist of the century is Lesage, whose *Gil Blas,* a work which resembles Fielding, is by reason of its style and language one of the classics of French literature. Marivaux (1688-1763) may claim to have invented the novel without a purpose, aiming simply at amusement. Jean Jacques Rousseau (1712-1778), the celebrated novelist and *philosophe,* became the teacher of Europe, and was a greater force in life, letters, and education than any other writer of the age. His *Emile* (whose sub-title is *L'Education*) and *La Nouvelle Héloïse,* though not perfect as novels, have had a mightier influence than any other novel in the world. The greatest man of letters of the eighteenth century was undoubtedly Montesquieu (1689-1755), a writer of greater depth and originality than Voltaire. His three chief works are the *Lettres Persanes,* the *Grandeur et Décadence des Romains,* and his masterpiece *Esprit des Lois.* A notable follower of Rousseau was Bernardin de St. Pierre, whose *Paul et Virginie* is now a well-known schoolbook. In philosophy we must note the names of Turgot, Condorcet, Volney, and Condillac, as well as the moralists Helvétius, Thomas, Vauvenargues, Chamfort, and Rivarol. Among the *philosophes* was an antitheistic school, whose opinions may be gathered from that remarkable book, the *Système de la Nature,* believed to be the work of Baron d'Holbach. The chief of the scientific writers is Buffon (1707-1788), whose great work is the *Histoire Naturelle,* a book of 36 volumes, written in an inflated style. Buffon is the author of the well-known phrase, "Le style c'est l'homme." Rouget de Lisle deserves mention for his one famous poem, the *Marseillaise* (1792).

The greatest name at the beginning of the nineteenth century is unquestionably Chateaubriand (1768-1848), whose literary influence can hardly be exaggerated, and who has justly been called "the father of the romantic movement." So charmed was Joubert (whose *Pensées* prove him the most illustrious successor of Pascal and Vauvenargues) with the brilliance of Chateaubriand's style, that he called him "l'enchanteur." Of his miscellaneous works the most remarkable are *Les Martyrs, René, Génie du Christianisme,* his *Itinéraire,* and his autobiography, *Mémoires d'Outre Tombe.* Madame de Staël (1766-1817) is an important figure during this epoch. Her principal novel is *Corinne,* but her greatest achievement is her book *De l'Allemagne.* Xavier de Maistre (1764-1852) is best known by his *Voyage autour de ma Chambre,* a model of French style. Courier (1772-1825) deserves mention for his unique Letters, which in his own words reveal "peu de matière et beaucoup d'art." Chief amongst the transitionists from the *philosophe* era to the new romantic and eclectic movements are Béranger, the song writer of the people; Lamartine, distinguished both in prose and verse; Lamennais, the gifted theologian and journalist; Cousin, the eclectic; Henri Beyle, who wrote under the name of De Stendhal; Nodier, and the two dramatists Soumet and Delavigne. The triumph of the literary revolution is centered in Victor Hugo (1802-1885), the king of modern French literature, foremost then and foremost still. In him all the romantic characteristics are embodied and expressed. The fine tragedy *Hernani,* that masterpiece in prose *Notre Dame de Paris,* his matchless odes and ballads, and that remarkable book *Les Quatre Vents de l'Esprit* all show the greatness of his genius. The seven other names which sum up the greatness of the romantic movement are Sainte-Beuve, the greatest of French critics; Dumas the Elder, the celebrated novelist and dramatist; Honoré de Balzac, a novelist of great originality, given to minute psychological analysis; George Sand (Lucile Aurore Dupin), a novelist of rare imagination and improvising power; Mérimée, a novelist of the first rank and a master of French prose; Théophile Gautier, poet, critic, and novelist, a master of the ornate style of modern

French; and, lastly, Alfred de Musset, the gifted poet, dramatist, and novelist. Three stars of lesser magnitude must be noted: Alfred de Vigny, an original thinker among poets, and a prose writer of some distinction; Auguste Barbier, eloquent in his vigorous satires, the *Iambes;* and Gérard de Nerval, a less known writer of poetic prose. The romantic was followed by the naturalistic movement, itself divided into the Impressionists (represented by the two Goncourts, Alphonse Daudet, and, in a sense, Pierre Loti) and the Realists (led by Flaubert, Zola, and Guy de Maupassant). The Realistic School abolished all conventions and sunk deep into the baser side of human character. Though the works of Zola contain an element of grandeur, it is a grandeur in which no Soul is immanent. A reactionary movement against this school was begun by Paul Bourget (born 1852), aided by Brunetière, Lemaitre, and Anatole France.

Among women authors, by far the most talented is "Gyp" (Countess de Martel de Janville), who was born in 1850.

Of the most recent poetry the "Parnassian School" is the most noteworthy. It was founded by L. Xavier de Ricard and Catulle Mendès. Its most prominent members are Sully-Prudhomme (a French Matthew Arnold) and François Coppée. Of names distinguished in other fields of literature, the most notable are Comte and Proudhon, constructive philosophers; Montalembert, Lacordaire, and Rénan, theological writers; the brothers Thierry, Guizot, Thiers, Michelet, Quinet, Tocqueville, and Taine—a band of the greater modern historians.

For volume and merit, the literature of France is second to that of no other country; but for individual works of striking preëminence we may look in vain. Judged by the verdict of other nations, no French writer reaches the level of Dante or Shakespeare. There is no truly great epic in French, few great tragedies, little prose like Milton's, little verse like Spenser's or Shelley's. But there are the finest short tales in prose and verse, the most polished gems of thought and wit, songs of exquisite grace and charm, and, above all, a store of narrative fiction surpassing all other nations in art and originality.

GERMAN LITERATURE.

The history of German literature may conveniently be divided into three periods:—

I. Old High German Literature, 600-1100, from the rise of the Franks to the Crusades.

II. Middle High German Literature, 1100-1500, from the Crusades to the Reformation.

III. New High German Literature, 1500 to the present day.

1. The beginnings of the literature may be traced almost to the dawn of the Christian era, and although no remains have come down to us there are references to German poetry which was in existence during the first six centuries. The development of epic poetry from the old heroic songs was closely connected with the migration of the German tribes. The heroic period was succeeded by an age of culture and Christianity in which the whole tone of literature was revolutionized by the infusion of new ideals. In the fourth century Bishop Wulfila (or Ulfilas) made a translation of the Bible into Gothic. The oldest monument extant of Christian poetry is the *Wessobrunner Gebet*, a Saxon poem, written in the beginning of the ninth century. A copy of the pagan poem, *Hildebrandslied*, though of much earlier origin, has come down to us from the same period. A great impetus was given to the literature by Charlemagne, aided by his Anglo-Saxon adviser, Alcuin. The poems *Ludwigslied* and *Der Heliand* mark the transition from paganism to Christianity. The former was written by Otfried, who was the first to write in rhyme. He also wrote the sacred epic, *Krist*. The first German poetess was the nun Hroswitha von Gandersheim (920-968), who was also the first dramatist after the Romans. In the second half of the ninth century we trace the beginnings of prose, the first efforts being in the form of tales (*Märchen, Novelle, Schwänke*) and legends. In the tenth century Notker Labeo translated the psalms into German prose.

2. The hundred and fifty years from 1150 to 1300 are called the "erste Blütezeit"—the first Golden Age of German literature. The brilliancy of this period is due to four causes: (1) The influence of the Crusades; (2) the patronage of the Hohenstaufen dynasty; (3) the spirit of chivalry; and (4) the introduction of models from France. The language used was Middle High German. The epic romances presented an idealized picture of the virtues of knighthood. The priest Konrad wrote the *Rolandslied* in imitation of the *Chanson de Roland;* another priest, Lamprecht, wrote the *Alexanderlied*. Greater than either of these was Heinrich von Veldeke, the first of the poets who may claim to rank as German trouvères. His great work was the *Eneit*, based on Vergil's *Aeneid*. The greatest production of the Middle Ages is the *Nibelungenlied*, an epos which embraces the hero-songs of the leading German tribes. These songs had been recited for generations by the wandering minstrels, to an accompaniment on the zither or the harp. The second national epic is the *Gudrunlied*, which embodies the legends of the North Sea. While the sagas of the minstrels formed the foundation of these two epics, the poetry of the Court was inspired largely by the legends of other nations. Chief amongst these were the Arthurian Legend, the Spanish Legend of the Holy Grail, the Classical Legends of the Trojan War, the deeds of Alexander the Great and Charlemagne. The greatest poet of this era is the Bavarian knight, Wolfram von Eschenbach, whose *Parzival* is a masterly conception. The greatest of his contemporaries is Gottfried von Strassburg, who died at the beginning of the thirteenth century. The age of chivalry was remarkable for its lyrics. Poets of this class were called Minnesänger because their theme was "Minne," or the ideal Love. The chief of these writers of Minnepoesie was Walther von der Vogelweide, who died in 1227. The lyrics of Ulrich von Lichtenstein rank next in order of merit. His *Frauendienst*, 1255, is the oldest German autobiographical work extant. As the national and courtly epic began to decay about the middle of the thirteenth century, narrative poetry became more general, and the longer romance gave place to the short tale. The chief didactic work of this period was Freidank's *Bescheidenheit*, a word which appears to have meant worldly wisdom, rather than "modesty"—its modern meaning.

The use of prose was encouraged by the *Sachsenspiegel* and the *Schwabenspiegel*, two great collections of local laws; but preaching did more to establish it. From 1300 to 1500 was a period of literary dearth. After the fall of the Hohenstaufen dynasty, the age of chivalry came to an end. Driven from the strongholds of princes and nobles, literature took refuge in the cities. Guilds of poetry were formed amongst the burghers, but there is hardly a "Meistersänger" worthy of note. Heinrich von Meissen, surnamed "Frauenlob," was the first of the Meistersingers. Lyricism found its expression in the popular ballads (*Volkslieder*). During this age of decadence, prose became the universal medium, and a plain narrative prose style began to be cultivated in the Chronicles. But there were no prose writers of distinction in this period of gloom; no Villehardouin or Joinville, no Boccaccio or Roger Bacon. Not till after the early Italian Renaissance and the culture of the Humanists had spread beyond the Alps, did the Germans rise to the need of universities to form a groundwork for their literature. The rise of the drama from the sacred plays was similar to its development in other European countries. Gradually the comic element increased, until in the fifteenth century the secular drama or comedy arose alongside of religious tragedy.

3. With the Reformation the Germans awoke from their lethargy; and Luther (1483-1546), the dominant figure in literature as in religion, placed his countrymen in the van of European progress. His translation of the Bible gave the nation for the first time a literary language. Luther is the greatest of German hymn writers, and led the way with that fine battle hymn, "Ein feste Burg ist unser Gott." Ulrich von Hutten (1488-1523), a writer of satirical poems and prose dialogues, was a prominent disciple of Luther's. Hans Sachs (1494-1576), the leading German poet of the sixteenth century, composed in all 6,048 poems, among them many excellent hymns. His best works are his *Shrove Tuesday Plays*. The greatest satirist of this epoch was Johann Fischart, who was also one of the best masters of diction. Jacob Ayrer, a writer of plays, is best remembered for his *Singspiele*, the parent of the opera. The Thirty Years War (1618-1648) paralyzed German literature, and religious lyrics alone survived amid the general decay. The beginnings of modern German poetry may be said to date from the publication of the critical *Buchlein von der deutschen Poeterei*, of Martin Opitz, 1624. Paul Fleming (1609-1640) is the only secular poet of the seventeenth century endowed with true genius. Opitz and his followers are called the First Silesian School of Poetry. Marking the transition from this to the Second Silesian School is Andreas Gryphius (1616-1664), who was the first German dramatist to divide his tragedies into five acts. During the greater part of the seventeenth century Germany produced few prose works of eminence, and the language became more and more corrupt. Grimmelshausen's romance *Simplicissimus*, 1659, is a masterpiece of its time; while the name of Christian Thomasius (1655-1728) is noteworthy in connection with the first German periodical. During this dismal period Germany gave birth to one of her most brilliant thinkers, the philosopher Leibnitz (1646-1716). Poetry is represented by the names of Wernicker, Günther, and Brockes, the first German poet who displayed acquaintance with English literature. With Frederick the Great came a revival of letters. Gottsched (1700-1766) did good work for German literature by his "Critical Art of Poetry" (*Kritische Dichtkunst*). The poet and fabulist, Gellert, is the most popular figure of these times. His most important work is *The Swedish Countess*, the first social novel in German literature. It was modeled on Richardson's *Pamela*. Haller, Hagedorn, and "Vater Gleim" deserve note as poets; but greater than these is Klopstock (1724-1803), who, under the influence of the English nature poets, created the modern German lyric. His *Messias*, a sacred epic, is his greatest achievement. Gessner (1730-1788) is best known by his *Idylls*, which, until the appearance of *Werther*, was the most popular book in Europe. Among prose writers Moses Mendelssohn, Nicolai, and Forster stand out among their contemporaries.

The foundations of the classical literature, which reached its zenith by the beginning of the nineteenth century, were chiefly laid by Klopstock, Wieland (1733-1813), and Lessing (1729-1781). Wieland stands somewhat apart from the writers of his time. He represents the Latin element in the literature, and his work helped to counterbalance the excessive nature worship of Rousseau, which later swept through Germany. His masterpiece is the romantic poem *Oberon*, which won the applause of Goethe. In a letter to Lavater, July 3, 1780, Goethe wrote: "Sein 'Oberon' wird so lang Poesie Poesie, Gold Gold, und Crystall Crystall bleiben wird, als ein Meisterstück poetischer Kunst geliebt und bewundert werden." Wieland was the first to popularize Shakespeare in Germany, and translated 22 of his plays, thus contributing to the development of the German drama, which was soon to burst forth into unrivaled splendor. Lessing was the founder of æsthetic criticism in Germany, and the pioneer of the modern German drama. Macaulay styles him "the first critic of Europe." The greatest of his critical writings is the *Laokoon*. Lessing is still a living influence, and unsurpassed as a master of style. His *Minna von Barnhelm*, 1767, is the first masterpiece of German comedy. The tragedy, *Emilia Galotti*, followed in 1772, and his third and greatest dramatic work, *Nathan der Weise*, in 1779. The Second Golden Age of German literature was now reaching its highest glory in every field of thought. A new and vigorous movement began in Germany known as the "Sturm und Drang" (a name adopted from one of Klinger's plays); and the watchword of its leading spirits was "Originality and genius." Herder (1744-1803) is the greatest intellectual force of this new epoch, and forms the link between Lessing and Goethe and Schiller. As a linguist and translator he stands alone. His best prose work is *Ideen zur Philosophie der Geschichte der Menschheit*. Goethe, to use his own words in reference to Shakespeare, "is not for an age but for all time." His name is enrolled amongst the foremost poets of all nations, and *Faust*, his masterpiece, will live as long as the German tongue. Goethe sprang into European fame with the publication of his *Werther*,

and soon afterwards joined the illustrious group at the court of Weimar. With Wieland, Herder, Goethe, and Schiller banded together, it was indeed a "Court of the Muses." Goethe's famous dramas *Iphigenie, Egmont, Torquato Tasso,* besides his immortal *Faust,* give him rank as the greatest of German dramatists; while his matchless lyrics prove him the foremost lyric poet of Germany. The range of his activity was extraordinary, but the main secret of his power was his combination of realism and idealism. Schiller (1759-1805) is a truly national poet, second only to Goethe. He is an idealist expressing his noble sentiments and ideas by means of his dramatic creations. *Don Carlos, Wallenstein, Die Jungfrau von Orleans, Maria Stuart,* and his masterpiece, *Wilhelm Tell,* reveal the greatness of his dramatic genius. His ballads are loved by every reader of the language.

The Romantic School which now arose left its influence on every branch of literature and science. The prophet of this school was Friedrich von Hardenberg, better known as Novalis (1772-1801); its critical leaders were the brothers Schlegel, and its most productive writer was Ludwig Tieck. Affected too by this wave of romanticism were the brothers Grimm, whose fairy tales are dear to every child; Alexander von Humboldt, the natural philosopher; and Jean Paul Richter (1763-1825), usually called "Jean Paul," a master of satire gifted with what Carlyle called a "vast World-Maelstrom of Humour." Richter's two best works are *Titan* and the unfinished *Flegeljahre.* He was a power in his generation, but his influence is on the wane. Among the contemporary poets must be named Bürger, whose *Lenore* and *Der wilde Jäger* are translated by Scott; Voss, best known for his poem *Luise;* the brothers Stolberg; Matthisson, Miller, and Claudius. The deepest current in the intellectual life of Germany during the nineteenth century was philosophical speculation. The eminent philosopher, Kant, was succeeded by Fichte, Schelling, and Hegel, and these in turn by Strauss, Feuerbach, and Schopenhauer. One of the most celebrated story writers of the Romantic School was E. T. Amadeus Hoffmann (1776-1822), whose *Die Serapions-Brüder* and *Nachtstücke* are characteristic of his weird imagination. Friedrich de la Motte-Fouqué (1777-1843) is remembered best by his well-known fairy tale *Undine.* One of the great lyrical poets of modern times is Chamisso (1781-1838), who also wrote the romance of *Peter Schlemihl.* The lyrics of Heine (1797-1856) are amongst the best in German literature, and his ballads are known in every home. Except Goethe, no other German poet achieves his effects by such simple means. Rückert (1788-1866) wrote a number of poems inspired by the Napoleonic wars; but a more picturesque figure is Theodor Körner (1791-1813), whose well-known battle songs and the drama *Zriny* show great promise. Patriotism likewise inspired Kleist (1777-1811), who wrote many lyrics and excellent short stories. His two great patriotic dramas are *Prinz Friedrich von Homburg* and the *Hermannsschlacht.* Platen, Arndt, and Max von Schenkendorf also stand among the greater poets of the period. The Swabian group of nature poets included Uhland (1787-1862), the writer of some of the most charming songs and ballads; Gustav Schwab; Justinus Kerner, who was of a more tragic cast; and Eduard Mörike. Of more recent poets Fallersleben (1798-1874), Freiligrath (1810-1876), Kinkel (1815-1882), and Giebel (1815-1884), are the most distinguished; while Hebbel and Karl Gutzkow are highly-gifted dramatists. The German novel has not kept pace with other departments of literature. Freytag, author of *Soll und Haben* ("Debit and Credit"), is one of the best German novelists. Hauff's *Lichtenstein,* Scheffel's *Ekkehard,* Dahn's *Kampf um Rom,* Ebers' *Homo sum,* Auerbach's *Tales of the Black Forest,* Spielhagen's *Problematische Naturen,* and Paul Heyse's *Die Kinder der Welt,* are amongst the best of modern German fiction. Heyse is a master of style, as is also Hermann Sudermann, the dramatist of the successful play, *Die Ehre.* Sudermann's two best novels are *Frau Sorge* and *Der Katzensteg.* The greatest modern humorist of Germany is Fritz Reuter, author of *Ut mine Stromtid;* while the most original dramatist is Hauptmann (born 1862). The field of history is dominated by the great names of Niebuhr, Ranke, Von Sybel, Von Treitschke, and Mommsen. The most original thinker in the latter half of the nineteenth century was Friedrich Wilhelm Nietzsche (1844-1900), whose philosophy may be gathered from his great book, *Also sprach Zarathustra,* one of the masterpieces of modern literature. German is essentially a literature of individualism; the personal note is clear in every German masterpiece, and even the drama is not objective. The dramatic literature is thus rich in initiative and originality; nor have letters, as in England, become divorced from the stage. In the last generation nothing is more marked than the improvement of the prose style. Both scholars and thinkers are paying more heed to the form, and are cultivating greater force, simplicity, and directness of speech.

RUSSIAN LITERATURE.

The literature and the people of Russia stand apart from the Western European world. The great movements, from the Crusades to the Revolution, which left their mark on Western nations, did not arouse Russian literature from its lethargy. The epic age, beginning with the *bilinas* or heroic tales, continued till the opening of the nineteenth century. The *bilinas* (literally "songs of the past"), unlike the national epics of other nations, are an apotheosis of the laborer instead of the knight. Instead of an Arthur or a Roland, they glorify Mikula and Ilia, both heroes of the plow. The age of chivalry which succeeded this primitive era is known as the Kief cycle, and its central figure is Vladimir, who introduced Christianity into Russia; yet the heroic *mujik,* Ilias de Moron, the giant Cossack, is well to the fore. With the spread of Christianity the paladins disappeared, and the literature assumed a religious cast. Two Greek brothers, Cyril and Methodius, translated the Gospel into the Sclavonic tongue; and in the eleventh century epistles, sermons, and moral writings began to pour forth. Nestor the monk, who died in 1116, Nicephorus, and Cyril the Golden-Mouthed were the chief writers of the time. Nestor's *Chronicle* is the first book on Russian history ever written. The twelfth century produced the *Song of the Host of Igor,* a

mixture of pagan and Christian marvels, written to please the Russian nobles. The Tatar invasion in the thirteenth century checked the course of lay literature, and not till the fifteenth century did the oral tales really enter into the domain of literature. In 1564 the printing press was established in Moscow, and on the first of May *The Acts of the Apostles*, the first book printed in Russia, made its appearance. The first regular press and the first periodical (1705) were founded by Peter the Great, who gave a great impetus to the Russian language and literature. Peter revived the theater and established the academy. In his reign there arose the first Russian writer of note, Lomonosof, who refined and perfected the language for his successors. Till the middle of the eighteenth century, though many writers appeared, their works were chiefly of an utilitarian nature. Tatichtchev (1685-1750) produced a *History of Russia*, while the only poet of distinction was Kantémir, with whom modern Russian poetry practically begins.

Under the influence of the Empress Catherine letters made great progress. A literary Pleiad arose, which numbered such names as Von-Vizine, the first original Russian dramatist; Derzhavin, the official bard; Kheraskoff, the pseudo-classic author of the *Rusiada;* Sumarakov, the first dramatist whose plays were put upon the stage; and the poets Bogdanóvich and Petrôv. Russian literature owes much to Catherine, for by her writings and her influence she familiarized her people with the best thought of Europe. Translations from the *Spectator*, the *Guardian*, and the *Tatler* had a salutary effect on Russian letters. In the eighteenth century we find hardly a trace of anything original; imitations of foreign models alone abound. Other writers worthy of mention are Princess Dolgoroukaïa (1713-1770), Prince Chakhofskoï (1705-1772), Joukovski (1786-1852), and the prose writers Nôvikov, Tatíshchev, Shcherbátow, and Radíshchev. But during this epoch little seriousness was shown in literary pursuits, and prose naturally suffered more than poetry. The best records of the eighteenth century are found in the memoirs, for the restrictions of free speech gave an incentive to this class of literature, which was not originally intended for publication. Karamzin (1766-1826), the "Titus Livius of Russia," the historian and novelist, first freed the popular style from the fetters of a pseudo-classicism, and exercised a humanizing influence on Russian literature. His direct literary heirs were the poets Dmitriev and Oziêrov. The fables of the satirist Krylov are stamped with his own personal genius, and have been translated into twenty-one languages.

With the name of Pouchkine (1799-1837) we enter upon the most glorious epoch in Russian literature. Pouchkine is a lyrist of the first rank. His chief works, *The Prisoner of the Caucasus, The Fountain of Baktchissaraï; The Gipsies, and Eugène Onièguine*, have won for him a European reputation. He was moreover a finished prose writer, and the author of a most interesting novel, *The Captain's Daughter*. The two poets who stand nearest to him are his contemporaries, Baratinski, whom Pouchkine called "our first elegiac poet," and Lermontoff, the Russian Byron, whose poems are the high-water mark of romanticism in Russia. Pouchkine, Lermontoff, and Tolstoy, each in his own way, have sung the regenerative virtue of the snow-capped Caucasus. The creator of the Russian novel, Gogol (1809-1852), put an end to romanticism with his masterpiece, *Dead Souls* (a kind of Russian *Don Quixote*), and established the school of modern realism. One of the foremost writers of this school is the novelist, Turguéniev (1818-1883), a finished artist whom Ernest Renan pronounced the incarnation of the Russian people. His best known works, *First Love, A Sportsman's Sketches*, and *A Lear of the Steppes* so filled Taine with enthusiasm that he regarded their author as one of the most perfect artists the world has seen since the days of the ancient Greeks. Of his rival, Gontcharov (author of *Oblomov*), the visionary Dostoïevski, the gifted propagandists Herzen and Chtchédrine, the novelist Pissemski (whose best novel is *A Thousand Souls*), the poet of freedom, Nékrassov, and the author of the *Family Chronicle*, Aksakov, we can merely find space for their names. The most famous Russian novelist, Tolstoy, was born in 1828. A nihilist and a mystic, he formulated the idea of a return to Nature, for which the way was already paved by Schopenhauer, and in his writings Russian naturalism would seem to have culminated. A less known, though remarkable novelist is Liéskov (1831-1895), author of *The Priests*, the first description in the national literature of the life of the orthodox clergy. Of the writers of a younger generation only Tchékhov seems to be known out of Russia. The reason is that Russian intellectual vigor is at a low ebb. There is no national ideal, either in ethics or æsthetics, and at the present time Russian literature subsists chiefly on translations.

POLISH LITERATURE.

Compared with Russia and Servia, Poland is extremely poor in legendary poetry and national songs. The earliest specimen of the Polish tongue is the so-called Psalter of Queen Margaret, discovered in 1826 at the convent of St. Florian, and which was presumably written about the middle of the fourteenth century. A more famous monument is the ancient battle hymn, *Picsn, Boga Rodzica* (1408), addressed to the Virgin. This is supposed to have been written by St. Adalbert. The next extant monument is the Bible of Queen Sophia or *Bible of Szaroszpatak*. The introduction of Christianity into Poland did nothing to foster the native literature, for Latin was exclusively the organ of the new faith. Not till the sixteenth century, when Polish became the language of Sigismund's court and of polite society, did the national literature come into being. From Rey of Naglowic (1505-1569), who is the earliest poet of repute and who first fixed the idiom of the language, the poets of Poland follow in an unbroken line. Rey, who is a contemporary of the celebrated Pole, Copernicus, is best known by his didactic poem, *The Mirror of an Honest Man*. The period from 1548 to 1606 is called by Poles their Golden Age. To this era belong Grochowski, author of 32 Polish works; Miaskowski, the best religious poet; Zabczyc, a song-writer and satirist; Zbylitowski, a didactic poet; Bielski, author of the *Kronika Polska*, the first historical work in Polish; Szymonowicz and Zimorowicz,

writers of pastorals; and Kochanowski (1530-1584), called the prince of Polish poets, whose most popular work is his *Treny* or "Lamentations," and who is the author of the first regular play, *The Despatch of the Greek Ambassadors.*

From 1606 to 1674 is known as the macaronic period, during which the literature and language declined, owing to the pedantic and frivolous studies introduced by the Jesuits. The poets were for the most part mere rhymesters, and the only writers worthy of notice are Potocki, noted for his epigrams; Twardowski, a most prolific poet; Opalinski, a bitter satirist; and Kochowski, one of the best Polish lyrists.

The literature found a regenerator in the last Polish king, Stanislaus Poniatowski, a zealous patron of letters and education. In this second great period of the development of Polish literature French taste was all-dominant; and though the language was enriched, it lost much of its national character. The most celebrated poet was Bishop Krasicki (1735-1801), a keen satirist, who wrote an elaborate epic on *The War of Chocim.* His fame now rests chiefly on his comic tales and fables. Another bishop-poet, Naruszewicz, succeeded better as an historian, and his *History of the Polish Nation* stands out as one of the finest examples of Polish prose. His contemporary, Kniaznin, ranks with the best of his country's lyrists. The more conspicuous names of this era are that "gifted child of nature," Elizabetha Druzbacka, the poetess; Trembecki, a court poet, whose chief work is a contemplative poem called the *Zofiiowska;* Wenzyk, whose *Glinski* and the *Boleslav* are the finest tragedies in the language; Kropinski, best known by the tragedy of *Ludgarda;* Felinski, who wrote the historical tragedy of *Barbara Radziwill;* Godebski and Tropinski, writers of miscellaneous verse; Niemcewicz, author of the *Historical Lives of Poland;* and Tomaszewski, the bucolic epic poet.

With the appearance of Mickiewicz (1798-1855), a romantic movement was inaugurated, and Poland, which had remained untouched by mediæval romanticism, was swept by the newer thought of England and Germany. Mickiewicz eclipses all Polish poets. His longest poem, by many regarded as his masterpiece, is *Pan Tadeusz;* but he is also the author of many beautiful sonnets, such as *The Storm, Bakchiserai,* and *The Grave of the Countess Potocka.* The second great poet of the romantic school is Slowacki (1809-1849), who, influenced by the writings of Byron and Hugo, produced his famous pieces, *The Monk, Hugo,* and *Lambro Beniowski.* One of the most entertaining dramatists Poland has produced is Fredro (1793-1876), who has given us many excellent comedies, modeled on those of Molière. Of more recent writers, few names call for special mention. Brodzinski, who has translated the *Lay of the Last Minstrel,* is a truly national poet. His best known poem, *The Legionist,* is touched with real genius. A further development of romanticism was marked by the Ukraine School of poets, chief amongst whom are Malezewski, Goszczynski, and Zaleski. But none of these can aspire to the mantle of Mickiewicz. Two names in fiction have attained European rank, Kraszewski and Sienkiewicz; the latter especially coming into prominence in 1896 with his sensational *Quo Vadis?*

DUTCH LITERATURE.

No national hero inspired the earliest writers of the Netherlands: the literature was mainly nurtured in the lap of commerce. Dutch literature had its birth in the thirteenth century. The oldest prose monuments extant are the charters of the towns of Flanders and Zealand, 1249, 1251, and 1254; these are in Middle Dutch. A translation of the Old Testament was made about 1300, and there is a *Life of Jesus* written about the same time. No genuine folk-tales of Dutch antiquity have been bequeathed to us, but there are some interesting prose translations of the stories of Arthur and Charlemagne recited by the wandering *jongleurs.* The first original Dutch author was Jakob van Maerlant (1235?-1300?), whose *Flowers of Nature*—a collection of moral and satirical addresses—forms an epoch in Dutch literature. No longer was literature the handmaid of the classes, but gave expression to the prosperity and growing independence of the burghers. A Dutch version of *Reynard the Fox* was made about 1250 by Willem the Minstrel. The first lyrical writer was John I., Duke of Brabant; while the earliest collection of Dutch folk-songs was published in 1544. The fourteenth century opens with the famous rhymed chronicles, the *Brabantsche Yeesten,* of Jan van Brendale (1280-1365); but the most important work of this period is the *New Doctrine* by De Weert, which by the boldness of its phrase foreshadows the Reformation.

The chivalric spirit came once more into vogue about the middle of the fourteenth century; though it was foreign to the literary genius of the Hollanders, who from the first sought to express themselves in a homely and utilitarian manner. During the Bavarian period (1349-1433) very little original work was produced—Van Aken wrote the romance of *Heinric en Margriete;* while with Dirk Potter's *Der Minnen Loep,* the last traces of the chivalric element disappeared, and poetry was left to the school of Maerlant. As in most European countries the religious drama occupies a prominent place. The earliest existing relic is part of a *Limburg-Maestricht Passover Play* of about 1360. The latest Dutch miracle play is the *Mystery of the Holy Sacrament,* by one Smeken, and performed at Breda in 1500. Besides these theological dramas there were produced moralities known as *Abelespelen* and *Sotternieën,* and in these we find the first signs of that genius for low comedy which culminated in the dramas of Brederôo. Out of the various theatrical companies and the wandering poets or *sprekers* there arose the "Chambers of Rhetoric" (for poetry was then styled the "Art of Rhetoric"), and these literary guilds greatly flourished during the fifteenth and sixteenth centuries. Meanwhile the growth of the native literature was retarded by the fact that the greatest Dutch intellects had recourse to the Latin tongue. Erasmus, Grotius, Arminius, Lipsius, and Vossius are well-known names to students of history, but their writings are entirely in Latin.

Modern Dutch literature virtually begins with Anna Bijus, who stands out amid the rhetoricians and psalm-writers of the sixteenth century as a poet of true genius. In her the middle Dutch period terminates and modern Dutch begins. Marnix (1538-1598), the author of the

famous *Wilhelmuslied*, the national hymn of Dutch independence, is also the writer of an epoch-making prose work, the *Biencorf* or Beehive of the Church of Rome. His contemporary, Coornheert, is best known by his *Zedekunst*, a prose treatise on ethics. Spieghel and Visscher form the link between the sixteenth and seventeenth centuries, and stand at the threshold of the Dutch Renaissance. At a time when the republic of the United Provinces rose to the first rank among European nations, with Amsterdam as the center of all literary enterprise, we encounter the greatest names in Dutch literature—Hooft, Vondel, Cats, Huygens. The tragic and lyric poet Hooft (1581-1647) is the founder of native tragedy. He is even more celebrated as a prose writer, for his masterpiece, the *History of Holland*, gives him rank with the foremost of European historians. His influence on his native tongue cannot be overestimated. Vondel (1587-1679) is the greatest of all Dutch writers. His fame rests chiefly on his numerous tragedies, the best of which are *Gysbreght van Aemstel* and, the more exalted in conception, *Lucifer*. The two daughters of Visscher, Anna (1584-1651) and Tesselschade (1594-1649), won distinction by their poems, and many writers of their time gathered around them. Brederôo (1585-1618) is the greatest comic dramatist Holland has produced. His best work is *Jerolimo, the Spanish Brabanter*. He created no school, but is a solitary figure in the literature of his country. "Father" Cats (1577-1660), as his countrymen affectionately call him, was a voluminous writer of didactic and descriptive poems written in a prosaic style. Though always popular with the people, he has really had a baneful influence on the literary art of Holland. Huygens (1596-1687) was not great as a poet, though a consummate metrical artist. His most famous poem is *Batava Tempe*, written in praise of The Hague. Among the lyrists the chief name is Starter (an Englishman by birth), who wrote the exquisite *Friesche Lusthof*.

After 1687 the literature declined. The more noted names are those of Poot, a rustic poet of undoubted genius; Langendijk, Holland's only comic poet; Hoogvliet, the author of the poem *Abraham;* De Marre, one of the best writers of tragedy; the brothers Van Haren, two celebrated poets; and Heemskerk, whose *Batavian Arcadia* is the first original Dutch romance. Towards the end of the eighteenth century the turning point was reached when the ladies, E. B. Wolff and Agatha Dekken, began to collaborate. In 1782 appeared their first novel, *Sara Burgerhart*, in imitation of Richardson. This was followed by *Willem Leevend*, 1785, and *Cornelia Wildschut* in 1792. The real creator of a new epoch was Willem Bilderdyk (1756-1831), the most impressive figure of his time. He excelled in every kind of poetry, except tragedy; his masterpiece is the unfinished epic, *De Ondergang der eerste Wereld*, of which his country is justly proud. In spite of Bilderdyk's opposition the new romantic movement made headway in Holland. Van Alphen (the children's poet), Feith, and Kinker are the chief poets of this school. The foremost prose writer of the nineteenth century is Van der Palm, an historian of decided genius. His greatest achievement was the translation of the Bible. No very great genius has arisen in any branch of letters since Bilderdyk and Van Alphen. Loosjes wrote an historical romance, *Charlotte van Bourbon*. Among more recent authors we may mention Tollens and Loots, the patriotic poets; Van Walré and Van Halmaal, dramatic poets of distinction; and Bogaers, the most prominent poet and romance writer of the time, author of the famous poem *Jochebed*, though more beautiful is his *Voyage of Heemskerk*, in which his genius attains its height.

Flemish literature came once more into existence with the independence of Belgium, and has produced three writers of note: the poet Ledeganck (1805-1847), the popular novelist Hendrik Conscience, and the gifted writer De Laet. The use of the French tongue by Flemish authors has, however, deprived the national literature of much that is meritorious.

SCANDINAVIAN LITERATURE.

From an intellectual standpoint the Scandinavian nations, which consist of the people of Denmark, Norway, Sweden, and Iceland, form a national unity imbued by the same spirit. Down to the Middle Ages they spoke the same tongue, and even to-day the differences between the three chief languages, Danish, Norwegian, and Swedish, are very slight. The development of Northern literature is one of the most striking phenomena in the history of the world. The poetry and the sagas of the North were inspired by the highest ideals, and gave utterance to the deepest thoughts of the Teutonic race. The early literature of the North divides itself into two great categories—(1) the Lays, usually called the Eddic Poetry, and (2) the Sagas or Prose Histories. There are two Eddas: *The Elder* or Sæmund's Edda, consisting of 39 poems, was collected from oral tradition in Iceland between 1050 and 1133; *The Younger* or Snorre's Edda is the work of different writers, both of prose and verse, and was doubtless intended as a handbook for Skalds. The Eddas embrace a number of semi-historical narratives, dealing with the lives and deeds of Norse heroes, chief of whom is Sigurd, the champion of the Volsungs, besides mythic poems remarkable for their range and depth of thought. The skaldic poetry extends back to prehistoric times, but not till the time of the Norwegian king, Harold Fairhair, at the end of the ninth century, can we name any skald with historical certainty. The two most famous poets of the reign of Harold—himself a skald—are Thjodolf of Hvin and Thorbjorn Hornklofe. Of greater renown is Eyvind Finnson, who celebrates King Hakon in one of the finest songs bequeathed to us—*Hakonar-mál*. This poem seems to have been modeled on the earlier *Eiriksmál*, which was chanted at the funeral of King Erik Bloodaxe (d. 952). The most famous Icelandic skalds, descendants of Norse emigrants, were Egil Skallagrimsson, a great warrior-poet who has left us three long *drapas* or songs of praise besides a number of songs; Kormak and Gunlaug Ormstunga, whose lives are told in sagas; Snorre Sturlason, the celebrated poet and historian, and his two nephews, Olaf Hvitaskald and Sturla Thordarson. Sturla was the last to compose drapas in honor of Norse kings. After the fourteenth century, when Christianity gradually made itself felt, the poetry assumed a

religious tone. The most noted of these early religious poems is *The Lily* by the monk Eystein, a poem which marks the close of the skaldic period and the beginning of the *Rima* or ballad. The saga is a kind of prose epic centering round a single figure or group of characters. The Sagas may be divided into three groups: (1) The Icelandic Sagas dealing with life and character in Iceland, e. g., *Njala, Gretla, Laxdaela,* the *Eyrbyggia,* and *Egil's Saga,* all works of great literary merit; (2) The Historic Sagas, e. g., the renowned *Heimskringla,* or "the Sagas of the Kings of Norway" to the year 1177, by Snorri Sturlason; (3) The Mythical or Romantic Sagas, e. g., The *Volsung* and the *Saga of Gunlaug Serpent-Tongue.*

After the union with Denmark, intellectual activity in Norway almost ceased. A few Norsemen with literary ambitions settled in Copenhagen, and their works became incorporated in Danish literature. Swedish letters, however, entered upon an independent course. Among the more eminent names are Saxo Grammaticus, whose *Chronicle of Denmark* is the greatest intellectual effort of Denmark in the Middle Ages; Messenius (1579-1637), whose chief work is the *Scondia Illustrata,* a history of Sweden partly in prose and partly in verse; the chancellor Axel Oxenstjerna (1583-1654), who began a history of Gustavus Adolphus; Olof Rudbeck the Elder (1630-1702), whose *Atlantika* tries to prove that Plato's Atlantis and Paradise were no other than Sweden; Georg Stjernhjelm (1598-1672), a great literary reformer, who, in his epic-didactic poem *Hercules* and other poetic works, laid the foundation of an artistic literature; Rydelius (1671-1738), the first great Swedish philosopher; Swedenborg (1688-1772), the mystic writer who founded the remarkable theosophical system which bears his name; Holberg (1684-1754), who wrote a number of comedies in the style of Molière, and whose influence was so great that he must be regarded as the founder of modern Danish literature; Ewald (1743-1781), one of the greatest lyric poets of Scandinavia, whose best work is *The Fishermen;* and Wessel (1742-1785), the witty satirist and the second great poet of this period. During the latter half of the seventeenth century Swedish poetry modeled itself chiefly on the pseudo-classical French, the transition between this period of imitation and the golden age of Swedish poetry being marked by the writings of Olof von Dalin (1708-1763), and Fru Hedvig Charlotta Nordenflycht (1718-1763). The first Swedish novelist was Jacob Henrik Mörk (1714-1763), whose great novels, *Adalrik och Göthilda* and *Thecla,* are amongst the best prose works of this era. Another novelist, Jacob Wallenberg (1746-1768), is still popular in Sweden by reason of his rollicking novel *Min Son pa Galejen.* This period produced many eminent men of science, the greatest of whom is Karl von Linné (1707-1778), "the king of botanists." Swedish poetry attained its highest glory in the reign of Gustav III., himself a man of great literary ability, and the founder of the national theater in 1782 and the Swedish Academy in 1786. The most famous poets of this Gustavian period are Kellgren, Karl Gustav af Leopold, J. D. Valerius, Lidner, Thorild, and the greatest of all, Karl Michael Bellman (1740-1795). Historiography in the first half of the nineteenth century claims three eminent names, Geijer, Strinnholm, and Fryxell. The most widely known Swedish poet is Esaias Tegnér (1782-1846), the author of *Frithjof's Saga, Axel,* and a poem made famous by Longfellow's translation—*The Children of the Lord's Supper.* Of the romantic poets or Phosphorists (so called from their periodical, the *Phosphoros*), the greatest was Atterbom (1790-1855), and his disciples, Dahlgren, Börjesson, Julia Kristina Nyberg ("Euphrosyne"), and Grafström. In the field of fiction Sweden is to the fore, and is particularly rich in historical novels. Count Sparre, Zeipel, Kullberg, Crusenstolpe, and the Finlander Zachris Topelius, have each given us important historical novels. A writer well known in the United States, which she once visited, is Fredrika Bremer, who wrote an appreciative *Life in the New World,* besides the romances, *The President's Daughters, Nina, Home,* and *The Neighbors.* Somewhat like her in his appreciation of all the features of an everyday life is Wetterbergh ("Uncle Adam"), whose novels *Genre Pictures, The Four Signatures, The Core of Society,* etc., give us a vivid picture of Swedish life and customs. Two other novelists, both women, are worthy of note, Sofia Knorring, and Emilie Flygare-Carlen, both of whom have left faithful portrayals of popular life. The greatest poet that has ever used the Swedish tongue is Runeberg, the Finlander (1804-1877). His chief work, *Fänrik Stals sägner,* is a collection of masterpieces throbbing with intense patriotism, and has won for him the title of national poet, both of Finland and Sweden. His exquisite idyl, *The Elk-Hunters,* marks an epoch in Swedish literature on account of its minute realism. One of the foremost writers of modern times is Viktor Rydberg, whose historical romance, *The Last Athenian,* has been translated into several tongues.

During the first fifty years of last century Danish literature shone forth with a new splendor. Oehlenschläger (1779-1850) was the first to rouse the nation's interest in the treasures of the past, and he revived the skaldic heroes in a series of historic tragedies, *Earl Hakon, Baldur the Good, Palnatoke, Hagbarth and Signa,* the heroic romance of *Helge,* and the fine dramatic poem, *Aladdin.* The versatile Baggesen belongs to the opening years of the century. Both his prose and verse are marked by a graceful style. He has been called "the poet of the graces." In the field of the drama there are P. A. Heiberg, a writer of operettas and comedies; Hauch, a true romanticist and author of many successful plays; and Henrik Hertz (1798-1870), the father of the new comedy in Denmark. The study of antiquities was further developed by Müller, author of the critical *Sagabibliothek;* Petersen, Werlauff, K. F. Allen, and the Icelander, Finn Magnusson (1781-1846), who traced the discovery of New England by Bjorne in the tenth century. The chief name in natural science is Oersted (1771-1851), author of a brilliant work, *Aanden i Naturen* (The soul in Nature). A race of intellectual giants came to a close with four Danish poets, each eminent in his own line—Grundtvig, Bödtcher, Andersen, and Paludan-Müller. Grundtvig (1783-1872) is the people's poet and his spirited songs are the joy of the poor. His influence on the literature of his country has been

considerable. Bödtcher (1793-1874) is one of the most finished poets of the North. His finest poem is *The Meeting with Bacchus.* The world-famed Hans Christian Andersen (1805-1875) was one of the most versatile writers, but his *Fairy Tales* are the flower of his remarkable genius. Their charm and freshness are not equaled by his *Improvisatoren* and *The Story of My Life.* Paludan-Müller (1809-1876), the social satirist, has won fame by his great epic, *Adam Homo,* though his lyrical drama, *Kalanus,* possesses more cosmopolitan interest. The excellent critic, Georg Brandes, whose *Danske Digtere* (1877) is known to every Scandinavian student, says of *Adam Homo* that it is "a piece of Denmark, a piece of our history, a piece of living cloth cut out of the web of time."

It was not till Norway regained her independence in 1814 that her literature became distinct from the Danish. At first her poets sang with harsh and hearty note, but amongst these patriotic versifiers three men, who have been called the Trefoil, were much admired in their day—Schwach, Bjerregaard, and M. C. Hansen. Rising far above these is the noble figure of Wergeland (1808-1845), who aggressively advocated the building of a literature upon national history and traditions. His most ambitious work is the symbolic epic, *Creation, Man, and Messiah,* but *The English Pilot* is his last and greatest poem. Welhaven (1807-1873) maintained a contrary opinion, and did his utmost to introduce new canons of criticism from abroad. He has left behind him several fine lyrics, while his prose writings are the most brilliant in Norwegian literature. A book which has exercised a great influence on later poets is the *Norwegian Popular Tales,* by the joint authors Jörgen Moe and the gifted zoölogist, P. C. Asbjörnsen. We now pass to the greatest name among the poets of the new realistic school, Henrik Ibsen, who has risen higher and higher as an artist till he now ranks with the foremost writers of the nineteenth century. His most famous work is the Puritan opera of *Brand.* Of his many dramas none have excited so much controversy as *A Doll's House.* Ibsen is an original thinker and an unsparing satirist. To him literature is a mighty agency for the amelioration of the race. His great rival, Björnson, poet, novelist, and dramatist, is famous throughout Europe and America. Björnson's works are imbued with the life and thought of his native land, and he has achieved what to Wergeland was only a fond hope. Stimulated by Ibsen and Björnson, a vigorous school of novelists has arisen, the most distinguished writers being Jonas Lie and Kielland, whilst among minor novelists may be noted Magdalene Thoresen, Camilla Collett, Dilling, Glöersen, and Paulsen.

JAPANESE LITERATURE.

In reviewing the voluminous literature of the Japanese, three features are particularly noteworthy: (1) the prominence of women writers; (2) the lack of any great epic or didactic poem; and (3) the absence of any great dramatist or imposing figure of any kind in the whole twelve centuries of their literary history. From the earliest times literature was the pastime of the mikado and his courtiers, and took the form chiefly of poetry and the writing of diaries. There were few works of a popular nature. China supplied both the inspiration and the models, while India, through the humanizing energies of the Buddhist missionaries, left its impress on the rising literature. The oldest extant monument is the *Kojiki,* or "Record of Ancient Matters" (712); but, though containing a number of Japanese songs, its interest is more archæological than literary. Of a similar character, though of greater historical importance, is the *Nihongi,* or "Japanese Record," in which Chinese influence is very marked. The *Norito,* or Shinto liturgies, are written in prose containing many of the elements of Japanese poetry.

The poetry is very restricted in its scope and form. Love and wine, absent and lamented friends, the joys of home and life's uncertainty, and withal the manifold beauties of nature, these are the themes most favored by the poets. War and religion seem foreign to the native muse, nor do we meet with any political, philosophical, or satirical poems. The most ancient collection is the *Manyôshiu,* or "Collection of a Myriad Leaves," which was prepared at the beginning of the ninth century. This anthology covers a period of about 130 years, and contains more than 4,000 poems, of which the greater part are *Tanka,* or short stanzas of 31 syllables. Still better known is the *Hiaku-nin-is-shiu,* or "Collection of One Hundred Persons," each author being represented by a single poem. This was compiled about 1235 by a courtier named Sadaiye, and has been translated into English by F. V. Dickins.

The Chinese influence, which was so great in the tenth century that the development of the Japanese language and literature was left almost entirely to the ladies of the court, became even more pronounced during the Tokugawa-Shōgunate (1603-1867). This period was productive of many writings, more remarkable for their pedantry and extravagances than for their literary merit. Considerable attention was given to the geography of Japan, as well as to matters pertaining to art. The drama has never held the same place as in European countries, and no classic author has arisen. The plays are always of a popular character. Another large portion of the literature consists of romances and fairy stories. The foremost novelist in Japan is Kiokutei Bakin (1767-1848), whose most famous novel is *Hakkenden.* One of the greatest literary undertakings was the *Dai Nihonshi* in 240 books, prepared under the patronage of the celebrated Mitsukuni, daimio of Mito (1622-1700). This is a history of Japan from the reign of the first mikado, Jimmu Tennō, 660 B. C., to the abdication of Go Komatsu, 1413, and is written in a concise and polished style. This standard work was first printed in 1851.

The downfall of the Shōgunate in 1867 gave a decisive blow to Chinese influence. As in other departments of Japanese national life, European models were set up in place of the Chinese, and were studiously copied and adopted. A band of new writers came forward who popularized the life and institutions of Europe. Of these authors the most conspicuous was Fukuzawa, whose *Seiyō Jijō* ("Things European") was issued in 1866. Many English books were translated, and about 1872 a new impetus was given to the spread of European knowledge by

the rise of a magazine and newspaper press. The influence of Europe on Japanese literature proper dates from the translation of Lytton's *Ernest Maltravers* in 1879. Gradually a reaction set in against the high-flown style and the drawn-out stories of the older writers. The leader of this salutary movement was Tsuboüchi Yuzō, whose *Shōzetsu Shinsui* ("Spirit of Fiction") is a merciless attack on the methods of Bakin and his school. Bimyōsai, author of *Natsu Kadachi*, and the realistic novelist Kōyō, introduce the colloquial dialect, which differs very considerably from the literary language. The most popular and voluminous writer of the present day is "Rohan" (Kōda Nariyuki). Fiction holds a very prominent place in modern Japanese literature, and these are only a few names out of a host of writers.

ENGLISH LITERATURE.

I. Its Beginnings (600-1066).—The story of English literature, from its rise in a barbaric age to the splendor of its manhood, is one that has kept pace with the nation's progress, and reflects the growth and greatness of the Anglo-Saxon race. Though no prose has come down to us from before the reign of Ælfred, we have the remains of many of the earlier poems, written in that strong, unpolished tongue from which our language has been evolved. There is *Widsiþ*, the fargoer; *Deor's Complaint*—the earliest English lyric; *The Wanderer; The Seafarer; The Fates of Men; The Ruined City;* and that famous, though unfinished epic, *Beowulf*. These were the songs of prehistoric bards, who, like the rhapsodists of Homeric times, journeyed from court to court, chanting their wild lays of "battle and bale," and rousing their hearers with the stirring minstrelsy of the sea.

The introduction of Christianity, and with it the use of the Latin tongue, bade fair to stifle all native song. But in virile Northumbria, the "scops" or gleemen clung to the language dear to their heart, and shaped the course of a national literature. It is remarkable that for long after the North became Christianized, the ritual of the church was in the native tongue. But a new spirit entered into English song, and the minstrel sang of the deeds and battles of the triumphant King of kings. The theme alone was changed; the form and the fervor remained the same. Cædmon, the aged Yorkshire bard, sang the story of Genesis and Exodus, and told of Christ and the life to come. These were the first really English poems, but their fame alone has survived. About the year 1650 Junius (Francis Dujon), a scholar of Amsterdam, published a manuscript which he believed was the work of Cædmon. The *Genesis* is worthy of the "Anglo-Saxon Milton," and is believed to have inspired that greatest of English epics—*Paradise Lost*. To another Northumbrian, Bæda, we owe the beginnings of English prose. Bæda's earlier writings were in Latin, and his *Historia ecclesiastica gentis Anglorum* is the chief authority for early England. By his scholarship he raised the standing of the English tongue, and translated into English *The Gospel of St. John*. The story of Bæda's death told by his pupil, Cuthbert, is the first record of English prose writing. Cynewulf, the greatest of the Northumbrian singers, flourished about a century after Cædmon, and was the first of the Old English poets who signed his verse. His name appears in runic letters in four of his religious poems: *Elene, The Crist, Juliana,* and *Fates of the Apostles*. Under King Ælfred, English became the language of letters, and the *English* or *Anglo-Saxon Chronicle* rose to the dignity of a national history. The *Chronicle* preserves for us that fine war poem, *The Song of Brunanburh* (937), as well as many songs of the time. Ælfred was truly the father of English prose; and as Yorkshire is the cradle of English verse, so is Winchester of our prose. The *Chronicle* lived on till the death of Stephen (1154); and at its close, we catch the last strains of Old English minstrelsy, and see in its quaint historical records the last traces of Old English prose.

II. From the Conquest to Elizabeth (1066-1558).—For a century and a half after the coming of the Normans, English literary history is a barren waste. French became the language of court and cloister; and English singers and writers became outcasts in their own land. But the tongue lived on among the masses and in time absorbed the Norman speech, until in the reign of Edward I. English literature was again supreme. The Normans brought with them their Chroniclers; and these Latin historians, the greatest of whom was William of Malmesbury, paved the way for historic romance and English story-telling. Geoffrey of Monmouth recounted the half-mythical tales of Arthur and Merlin, the stories immortalized in the *Idylls of the King*. From the Latin, Geoffrey's "History" (as he humorously styled it) was translated into French, and next put into English garb in Layamon's *Brut*. Layamon, who flourished about 1250, is the first English poet after the Norman Conquest. About 1300 story-telling gave rise to historical poems, and Robert of Gloucester penned his *Rhyming Chronicle* from Brutus to Edward I. Within the next 50 years French and Latin words streamed into our language, and the spirit of French romance pervaded the writings of those times. The reign of Edward III. not only saw the consolidation of the English people, but the fixing of the standard of the English tongue. The "King's English" became the language of court and letters. It was the East-Midland dialect that prevailed—the tongue of Oxford and Cambridge, of London and the heart of England. Langland's *Vision Concerning Piers Plowman* was, however, written in a dialect, and so was Wiclif's translation of the Scriptures. But both these works were meant to reach the hearts of the simple masses, and were given to them in words they well could understand. The Bible was read eagerly in every corner of the land, and did much to mold the style of mediæval writers.

The courtly Gower wrote little of value, and we turn from the dreariness of the *Confessio Amantis* (written in English verse) to Geoffrey Chaucer, "the morning star of English song." Chaucer wrote many poems which are colored by his sojourn first in France, and afterwards in Italy. Of such are the *Compleynt unto Pite, Troilus and Criseyde,* the *House of Fame,* and the *Legende of Good Women*. But it is as the author of the *Canterbury Tales* that Chaucer

is loved and remembered best. Like Dante, he wrote in his native tongue and made it at once the tongue of literature. A popular book in its day was that strange mixture of fact and fancy, the *Voiage and Travaile of Sir John Mandeville.* With the death of Chaucer in 1400, the brilliance of the dawn was followed by a century of almost total eclipse. Imitators of the great master arose, such as Thomas Hoccleve and John Lydgate; but these feeble rays only deepened the darkness. The coming of Caxton with his printing press worked a silent revolution in England's intellectual life. The first book printed in England was *The Game and Play of the Chesse,* 1474; but the first book bearing the imprint of William Caxton is *The Dictes and Sayings of the Philosophers.* Caxton was not only a printer, but an editor and translator; and, by his enterprise and zeal, saved the English of Chaucer from further degradation. His most important publication was *La Morte d'Arthur* of Sir Thomas Malory, the greatest masterpiece of prose before the revival of learning. What fixed our language once for all was Tyndale's *Translation of the New Testament* (1525). Tyndale's Bible, revised by Coverdale and issued as *Cromwell's Bible,* 1539, and in the following year as *Cranmer's Bible,* was set up in every church in England. After its revival in 1611, this same Bible was brought by the Puritan Fathers to New England, and fixed the standard of English in the New World. No book ever published has had so great and lasting an influence on the purity of language and the style of prose. The *English Prayer Book,* 1549-1552, edited by Cranmer, also gave balance to the English tongue. Not in Tyndale alone, but also around Sir Thomas More and Roger Ascham did the new learning center. More's most famous work is the *Utopia,* written in Latin, 1516, but afterwards translated by Ralph Robinson in 1551. More also wrote many works in English, his most valuable being the *Life of Richard III.* and the *Life of Edward V.* Ascham's most important works are the *Toxophilus,* or Lover of the Bow, and *The Scholemaster,* both written "in the English tung, for English men." The Renaissance in Italy was far reaching, and in the lyrics of Wyatt and Henry Howard, Earl of Surrey, we see the Italian sentiment wedded to the English tongue. Wyatt and Surrey gave us a new kind of poetry, and heralded the dawn of the Elizabethan splendor. The *Miscellany* of Richard Tottel, 1557, contains a number of poems by Wyatt, Surrey, and "Uncertain Authors." This is the first English anthology, and marks an epoch in the history of English verse.

III. The Golden Age (1558-1625).—The Elizabethan era presents a galaxy of genius far outshining the glory of any other age. Seldom have such giants of intellect been crowded into so short a span. The creative spirit overshadowed the nation: the poets burst forth into immortal song, and from the old Mysteries and Morality plays rose the drama to swell the triumph of the age. To merely name the poets, dramatists, and great prose writers of this period is to tell the brightest stars in the firmament of English literature. Spenser, Sidney, Shakespeare, Ben Jonson, Beaumont and Fletcher, Raleigh, Bacon,—what age has produced their like? At the threshold of this new era stand two well-known figures: Spenser, "the poets' poet," gazing dreamily backward, and Sidney, the "jewell of his times," living devotedly in the present; both destined to shape the age, of which they also were the product. Spenser's two greatest works, *The Shepheard's Calendar,* in 1579, and that exquisite allegory, the *Faerie Queene* (1590), delighted the England of his day as they have charmed true lovers of poetry ever since. Spenser sang of the ideal and the spiritual, and out of this subtle substance he wrote for England her first great ideal poem. His influence on all later poetry has been considerable. He was the originator of the English Spenserian stanza—a form of poetry only inferior in individual beauty to the sonnet, and which has been used with such telling effect by Thomson, Shelley, and Tennyson. The impress of Sidney on English poetry is very clear. Sir Philip Sidney, who died in the heyday of his fame, 1586, produced more artistic prose than any previous author; but it is as a writer of verse he excels, and his matchless sonnets by their influence created the greatest sonnet era in the history of English literature.

It was an age of action, and looked to the drama for an expression of national life. Shakespeare's was the master mind which seized the occasion and shaped it to his will. Whatever Shakespeare wrote he impressed with his titanic individuality. He settled forever the form of the English tongue and the English drama. Beginning in 1589 with *Love's Labour's Lost* (though the dates and order of his plays are not known with exactness), we can trace the growth of his skill and power in the *Comedy of Errors,* the *Two Gentlemen of Verona,* and the *Midsummer Night's Dream.* His dramas are preëminently human, and show us every side of human life, thought, and passion. He voiced the nation's patriotism in that grand series of historical plays, beginning with *Richard II., Richard III., Henry IV.,* and *King John.* In the *Merchant of Venice* the mastery over his art has become complete, and then follow his four great tragedies, *Hamlet, Othello, Macbeth,* and *King Lear,* each overtowering the one before in dramatic strength and grandeur of conception. In *King Lear* he reaches the summit of his tragic power. The grand development of his genius, from the first imperfect efforts to the sublime achievements of his riper years, has led some critics to believe that Lord Bacon, and not the man of humble birth, was the author of the plays; but such a conjecture is idle and baseless. His minor works include the poems, *Venus and Adonis,* and *Lucrece,* besides a collection of sonnets which reach the high-water mark of English poetry. Shakespeare is the greatest poet of our modern world. He is a literature in himself. Not only is his imagination complete, but all the elements of his many-sided strength are evenly adjusted. His is the one towering figure amid a band of giants; and this is as true to-day as 300 years ago. Such is Shakespeare, and such is his influence.

"Rare Ben Jonson" (1573-1637), the other leading dramatist of the Golden Age, stands out in striking contrast to Shakespeare. Jonson's was a mighty intellect, but void of passion. His

chief success was in comedy, his best works being *Every Man in His Humour* (1596), *The Alchemist, The Silent Woman,* and *Volpone the Fox*—the finest play he ever wrote. His tragedies are *Sejanus* and *Catiline.* Jonson's masques mark the beginning of the reaction against the imaginative school. They are material and not spiritual, and appeal to the intellect and not to the heart, thus sounding the first notes of the decadence of the drama. As a lyrist he excelled, and such songs as "Drink to me only with thine eyes" led the way for such as Herrick. Beaumont and Fletcher, the "twin stars," who ruled the drama after Shakespeare and Jonson had quit the stage, are striking examples of the creativeness of the times. Of their 52 collaborated plays the best known are *The Two Noble Kinsmen* (in which the hand of Shakespeare is evident), *The Maid's Tragedy,* and *Philaster.* "Beaumont," as Lowell has it, "contributed the artistic judgment and Fletcher the fine frenzy." Their plays, though brilliant, bore no message, and pandered to the coarseness of a declining age. That lovely pastoral, *The Faithful Shepherdess,* is by Fletcher alone, and anticipates the *Comus* of Milton. The Elizabethan age produced many distinguished dramatists whose fame has been eclipsed by the brilliance of the masters. The four most important writers in the earlier years are Peele, Greene, Kyd, and Marlowe. Marlowe (1564-1593) was the greatest of these, and may be said to have created the English tragic drama, laying the corner stone for the temple of Shakespeare. He wrote *Doctor Faustus* and *Edward II.,* and is the author of that beautiful lyric, "Come live with me and be my love." Other contemporaries of Shakespeare are Middleton, Marsden, Chapman, Heywood, and Dekker, whilst belonging more exclusively to the reign of James are Webster, Ford, and Massinger. The literary fame of the ill-fated Raleigh (1552-1618) rests not so much on his poems as on his *History of the World,* written during his 13 years' imprisonment in the Tower. This work shows an English historian for the first time looking beyond the British Isles.

The Renaissance left its influence on English prose. On the borderland between the old style and the new—between the strong, rugged writings of Tyndale and Latimer and the smoother periods of the later stylists — Raleigh and Hooker are the two chief figures. Hooker's *Laws of Ecclesiastical Polity* laid the foundations of moral and political science. The era of modern prose is ushered in by one predominant name—Francis Bacon (1561-1626). Unlike the writers of the Renaissance, who wrote only for the present, Bacon wrote for the future. His one desire was immortal fame; "a cosmopolitan philosopher writing for all ages and all nations." To this end he wrote principally in Latin, and even his English works he translated into Latin, "the universal language"; for he had no faith in the permanence of the English tongue. Of his Latin writings only the *Novum Organum* is of present importance (and this mainly academic); but his English works, especially the *Essays* and *The Advancement of Learning,* are read wherever the English language is known. The word "essay" was borrowed from Montaigne, and Bacon meant by it an attempt to record in compressed form his "dispersed meditations." He was not an investigating scientist, but a seer and idealist pointing the way. In the words of Macaulay, "he moved the intellects which have moved the world." Bacon was strangely lacking in passion. The cold rhetoric of his *Essay on Love* compared with the impassioned eloquence in Shakespeare's plays, reveals a striking contrast between these two vast intellects.

The crowning achievement of the age was the production of the Authorized Version of the Bible in English (1604). The King James Version—the greatest prose masterpiece of any age or language—fixes the standard of English prose for all time. No book in the history of the world has had so great an influence on life and letters. The Bible is the epic of the English-speaking race, and is woven into all that is noblest in our literature.

IV. The Age of Milton and Dryden (1625-1700). — Milton (1608-1674), though born in the reign of James, was really an Elizabethan, fired with the poetic zeal of the age just closed. The first 30 years of his life were productive of many fine lyrics, and amongst them those five immortal poems, *L'Allegro, Il Penseroso, Arcades, Comus,*—the last and greatest of English masques,—and *Lycidas,* in which shone the final rays of Elizabethan inspiration. For the next 20 years Milton laid aside the lyre, and hurled his fierce invective against the foes of the Commonwealth. Style was cast to the winds in the bitter fight for liberty; and, except his *Areopagitica* and the *Letter to Hartlib,* none of these prose writings command notice as literature. From 1660 to his death, Milton, blind and outlawed, turned once more to his art. Then grew that sublime, imperishable epic, *Paradise Lost,* magnificent in its conception, intensity, and unworldliness. This inspired poem, reflecting the loneliness of him "whose soul was like a star and dwelt apart," stands in our literature like some stately cathedral upon a heaven-rapt mount. Two other poems followed: *Paradise Regained* and *Samson Agonistes,* but both these fall short of the sublimity of his masterpiece. Milton is the greatest English poet save Shakespeare, and his strong personality is stamped on every line.

Of the many writers of this period, though dwarfed into insignificance by the side of Milton, may be mentioned those five religious poets of the "Caroline" period: Crashaw, Herbert, Vaughan, Wither, and Quarles, and the last of the lyric writers—Robert Herrick. Then there is Jeremy Taylor, "the Shakespeare of the pulpit"; Hobbes, author of that philosophic treatise, the *Leviathan;* and Sir Thomas Browne, who wrote *Religio Medici.* These are the three leading prose writers. In 1678 Bunyan published his famous *Pilgrim's Progress,* a book which draws its power almost entirely from the Bible, and which inspired a plenteous crop of religious allegorical works.

With the Restoration the old ideals were swept away; "the age of prose and reason," of artificiality and hypercriticism, was entered upon. Prose began to take the place of poetry; whilst poetry no longer voiced the emotions, but lent itself to satire and the play of intellect. A new interest in individual life gave birth to

numerous biographies. The new school began with the poems of Waller, Denham, and Cowley, the immediate precursors of that literary autocrat, whose iron rules cramped English poetry for over 100 years,—John Dryden.

Dryden (1631-1700) was the first leader of the new critical and didactic school. His first noted poem, the *Annus Mirabilis*, appeared in 1667, but not till he was 50 years of age did he produce that foremost of English satires, *Absalom and Achitophel*. This was the first great example of political verse, which grew so fierce and personal in the hands of Pope. It was a gallery of ruthless portraits, and was followed in 1682 by the *Medal*, a diatribe against Shaftesbury. The *Hind and Panther* (1687) is a religious satire aimed at the foes of the Church of Rome. In the same year he produced the *Song for St. Cecilia's Day*, and 10 years later, for the same occasion, he wrote that beautiful ode, *Alexander's Feast, or the Power of Music*. This Macaulay deems "his greatest work." First in poetry, so was he also first in prose. In his essays *On the Historical Poem*, on *Heroic Plays*, and on *Dramatic Poesy*, we catch the first notes of modern literary criticism. Dryden wrote several plays, but few survived his life. His best known are his tragedies, the *Indian Queen*, *All for Love*, and *Don Sebastian*, and his comedy, the *Spanish Friar*. It is in his satires, translations, allegories, and prologues that his fame will abide. His mastery over heroics is unequaled. His poetry is not of the highest kind; but in the sweep and variety of versification, in argument, in satire, in fiery spontaneity, and in declamatory splendor, Dryden stands supreme and unapproached.

The philosopher, John Locke (1632-1704), belongs to this period. His celebrated *Essay Concerning the Human Understanding* constitutes him the founder of the analytical philosophy of mind.

V. From Pope to Johnson (1700-1784).—On the death of Dryden, literature was in a state of stagnation. The comic drama, represented by Congreve, Cibber, Vanbrugh, and Farquhar, alone showed signs of vitality. For the first time in the history of English literature, poetry became wholly subordinated to prose. Not that verse was inactive; elegiac, didactic, and occasional poems poured forth in plenty; but the divine afflatus was gone, and poetry, dethroned from its high estate, became the wanton of the imagination. Literature was the instrument of party strife and unbridled slander. With the triumph of prose, the critic came into prominence; and, influenced by French writers of the period, introduced into England the Aristotelian criticism of imaginative literature. The effect on prose was healthy. Elegance, perspicuity, and brevity adorn the prose of the "Augustan Age" (a time-honored misnomer); a finished style was achieved by the leading writers, and prose became a worthy vehicle for the worthiest thoughts.

During this whole period no "great" poet arose to claim the mantle of the Elizabethan singers. Pope (1688-1744) stands first among his contemporaries. As a metrical artist he is unrivaled, and, until the rise of Wordsworth, his verse set the fashion for two generations. His *Essay on Criticism* appeared in 1711. The next year gave us the *Rape of the Lock*, a masterpiece of most exquisite beauty. The writings of the great French satirist, Boileau, the "Law giver of Parnassus," had been closely studied by Pope and his school; but the *Rape of the Lock* marks the turning point of English deference to French ideals, and henceforward England gives models to the world at large. Pope was imitated in every country in Europe, while in England for 30 years he may be said to have represented the poetry of his time, unchallenged and supreme. His *Dunciad* was issued in 1728, and shortly afterward appeared his celebrated *Essay on Man*. This poem of the English classical school, though weak in philosophy, has enriched our daily speech by countless lines and phrases. "Dear Mat Prior's easy jingle," as Cowper somewhere speaks of it, adds sparkle to these early years. Gay, now best remembered by his *Fables*, contributed between 1713 and 1726 a sprightly flow of songs, epistles, and short pastorals. The first reaction against the dictatorship, begun by Dryden and continued by Pope, was made by Thomson, who is the true pioneer of the whole romantic movement which culminated in Wordsworth. Thomson's *Seasons* inaugurated a new intellectual era. After writing two or three tragedies, the chief of which is *Sophonisba*, 1730, he produced the *Castle of Indolence*, 1748, a poem in the Spenserian stanza. His masque, *Alfred*, 1760, is noteworthy as containing the British national song of *Rule Britannia*. To mention Thomas Gray is to at once recall his *Elegy Written in a Country Churchyard*, which Wolfe declared he would rather have written than take Quebec. This exquisite poem, and the Odes which every schoolboy knows, now rank with the classics of our language. Gray's influence on Europe was delayed but certain, and in the *Elegy* both Chateaubriand and Lamartine found inspiration. William Collins, whose *Ode to Evening* must be numbered with the best lyrics of the century, was, like Gray and Thomson, a herald of a fairer dawn. Goldsmith disdained these innovations, and reverted to the old didactic couplets of Pope. *The Traveller* and *The Deserted Village* are perfect examples of the descriptive poem in heroics. His verse has infinite grace and charm, but marks no forward step in the art of poetry. Goldsmith's best known comedies are *The Good Natur'd Man* and *She Stoops to Conquer*. The latter is one of the great comedies of the world. His *Vicar of Wakefield* will live as long as the English tongue. Turning once more to the prose writers, Defoe in 1719 gave us the first great English novel, *Robinson Crusoe*, written at the age of 58. The most conspicuous figure in the beginning of the eighteenth century is Jonathan Swift (1667-1745), born in Dublin of English parents. He was the greatest satirist of the age, and wielded a vast influence over the essayists and prose writers of the period. Swift created a school of rhetorical diatribe on its better side. His prose is characterized by great originality, simplicity, mordant wit, and savage satire. *The Tale of a Tub*, the *Battle of the Books*, and that sinister but inimitable masterpiece, *Gulliver's Travels*, are his best known works.

Bishop Berkeley, the greatest English thinker between Locke and Hume and a pure metaphy-

sician of the foremost rank, clothed his philosophy in prose of classic beauty. His famous dialogue of *Hylas and Philonous* was published in that celebrated year, 1713, when Pope, Swift, Addison, Steele, were all at the summit of their power and fame. One of the landmarks in the history of literature is the date, April 12, 1709, when Steele issued the first number of the *Tatler*. This, though not the first English newspaper, marked the creation of modern journalism. Addison joined forces with Steele, and on March 1, 1711 (two months after the collapse of the *Tatler*), the *Spectator* appeared, only to die an early death at the close of 1712. But during this short time the periodical essay was created. Steele began it and contributed 188 out of the 271 numbers of the *Tatler;* 42 were by Addison, 36 by both conjointly, and 3 by John Hughes (1677-1720), a minor writer, author of *The Siege of Damascus*. But in the *Spectator* the polished pen of Addison took the lead. Of the 555 numbers, Addison wrote 274, Steele 236, Hughes 19, and Pope 1 (*The Messiah*). Addison was a great master of style, and was one of the first English prose authors to aim deliberately at beauty of execution and purity of language. In this way his style is often superior to his matter. His share in perfecting our prose, and spreading culture amongst the middle classes of his time, was very considerable. Recent biographers incline to do greater justice to Steele at the expense of Addison; but these illustrious colleagues were the natural complement of each other, and we may love them both. In the 49th *Tatler* occurs that famous phrase of Steele's, where, speaking of Lady Elizabeth Hastings, he says that "to love her is a liberal education."

The period was rich in letter-writers. Walpole, Gray, and Chesterfield excelled all their contemporaries in this department of letters. The name of Lady Mary Wortley Montagu (1689-1762) must be added; but her keen wit and breadth of view are too often marred by the freedom of her language. With the decay of the drama, and the need for new intellectual amusement, came the conception of the modern novel. In 1740—a memorable date in the history of literature—Richardson, the first great novelist, gave to the world his famous *Pamela*. Eight years later appeared his *Clarissa*, which created a great sensation both in England and France. Rousseau frankly copied it, and Alfred de Musset has called it the best novel in the world. The *History of Sir Charles Grandison* was published in 1754. Other great novelists made bids for fame. Fielding, the greatest of them all, produced his *Joseph Andrews* (1742), *Jonathan Wild* (1743), *Amelia* (1751); but it was in *Tom Jones* (1749), his masterpiece, that for the first time an attempt was made to portray the life of a normal person. Sterne has left us two incomparable works: *Tristram Shandy* and a *Sentimental Journey*, unrivaled in style, originality, and pathos. Smollett, inferior to the three great novelists, has given us three books worthy of note: *Roderick Random*, confessedly modeled on *Gil Blas*, *Peregrine Pickle*, and *Humphrey Clinker*. The type of the first English novels remained for over half a century the sole model for continental fiction.

Meanwhile a new dictator had arisen to wield the scepter of Pope and Dryden. Samuel Johnson (1708-1784), though not the greatest writer, is the most colossal figure in English literature; a man of wholesome humor and fearlessness, majestic in intellect and noble of heart, Johnson was the center of the literary life of his day. He tried his skill at every kind of composition—poetry: he wrote *London* and *The Vanity of Human Wishes;* the drama: *Irene* is his one attempt; periodical essays: he contributed to the *Rambler* (1750-1752) and afterward to the *Idler*. In 1755 appeared the *Dictionary of the English Language*, a monument of industry and scholarship. His famous letter to Chesterfield struck the final blow at patronage, and made Johnson the first literary man to find in the public the only paymaster. His *Rasselas* introduced the didactic novel. The *Lives of the English Poets* is his *magnum opus*, and lifts biography into a loftier place in English literature. This brilliant though inaccurate work brings the criticism of the eighteenth century to a close.

This was the age of the historians Hume, Robertson, and Gibbon, the founders of a school of history of purely English growth. History now became a branch of creative literature, no longer to be classed with the "good old prattle" of the chronicles of Bishop Burnet. Hume (1711-1776), the philosopher and the greatest utilitarian of the age, led the way with his *History of England* from the union to his own time. The work was a new departure, but, though brilliant and lucid in style, it lacked the thoroughness of the later historians, and is no longer regarded as authoritative. Hume's success inspired Robertson (1721-1793), who wrote a *History of Scotland*, a *History of America* (1777), and a *Disquisition on Ancient India*. His style is colorless and lacks the graces of his predecessors, but the success of his books was phenomenal. But a greater than either of these now appeared, a brilliant exponent of modern historical research—Edward Gibbon (1739-1794). That stupendous work, the *Decline and Fall of the Roman Empire*, which Freeman regards as "the grandest of all historical designs," was launched in 1776 and completed in 1788. Gibbon's style is one of ornate splendor, and his treatment is broad and accurate. His work is raised on such solid foundations that it can never become obsolete or unnecessary. In the words of the historian Freeman: "Whatever else is read, Gibbon must be read, too."

One or two more names call for attention during this period: Edward Young (1683-1765), whose reputation as a poet rests almost entirely on his *Night Thoughts*, a work which inspired many imitators both in England and Germany; Adam Smith, the founder of the science of political economy, whose *Wealth of Nations* was published in 1776; Sir William Blackstone, whose *Commentaries on the Laws of England* appeared from 1765 to 1768; and Joseph Butler, the author of the famous *Analogy of Religion*, 1736.

A striking characteristic of this era is that literature is no longer the preserve of a leisured clique, but becomes the privilege of the multitude. Culture spreads beyond the pale of the metropolis, and for the first time English literature, breaking away from its long insularity, forms the taste of cultured Europe.

VI. The Age of Wordsworth and Byron (1784-1837).—Poetry once more came suddenly to the front and threw off the fetters of an uncompromising classicism. The revival of romanticism shadowed forth by Collins, Gray, and Thomson set free the spirit of true poetry. Men's idcals were ennobled and broadened; no longer was poetry treated as an exact science void of all passion, imagination, and feeling, but it again rang true with the melody and fervor of the soul. The vast political upheaval on the continent, and the wide acceptance of revolutionary teachings, left their mark on the literature of the day. Romanticism swept over Europe like an overwhelming wave. The voice of Rousseau rang out like a prophet; the oneness of man and nature was proclaimed, and the underlying law of Love was revealed. The harmonies between man and external nature, which Rousseau had perceived, were widened and spiritualized by Wordsworth, Keats, and Coleridge. The Romantic poet rekindled the "naturalness" of the past and combined it with the art of the present, standing toward his brother man as a seer and interpreter of life and nature. Clinging to the old traditions, but voicing the new ideals, Cowper is the leading poet of the transition. The unity of the race first found expression in his verse. His greatest work is the *Task*, 1785, which marks an epoch in modern English literature. His *Table Talk*, and the well-known ballad, *John Gilpin*, are his best known works. Crabbe and Blake in England and Burns in Scotland, each in his own way, promoted the new ideals. Burns (1759-1796), the poet of passion and spontaneity, has left us some immortal ballads—glimpses of his wasted genius. Burns gives expression to the brotherhood of man, and love lives blithely in his songs. He is the national poet of Scotland, and as a writer of Scottish verse he holds the foremost place.

The false canons of the rhetorical school were finally broken down by Wordsworth (1770-1850), who, in the words of Macaulay, "was the high priest of a worship in which Nature was the idol." Both in Nature and in man Wordsworth perceived the "hiding places of infinite powers." He was a true son of the human race, and voiced its inmost needs and strivings. He is a poet of childhood, for in the child the bond with nature is more perfect. "The Child is father of the Man," and the instinctive communion with nature should not be outgrown with childhood. Coleridge placed Wordsworth "nearest of all modern writers to Shakespeare and Milton, yet in a kind perfectly unborrowed and his own." Though he has not the vastness of Shakespeare nor the sublimity of Milton, no poet since the Elizabethan era has added so much to the lasting wealth of English verse. He has sounded the depths of the soul, and gives us strength, purpose, and peace. His philosophy is outlined in that noble poem, *Ode on Intimations of Immortality from Recollections of Early Childhood*. This is one of the few great odes of English literature, and would alone place Wordsworth among our greatest poets.

The fame of Coleridge (1772-1834) rests on his poems rather than on his prose. The *Rime of the Ancient Mariner* and *Christabel* are matchless specimens of poetic realism. Like his friend Wordsworth, Coleridge was a prophet of nature inspired by the impulses of the times. The weird, the supernatural, and tumultuous he interpreted with power and subtle insight. As a metaphysician he is a spent influence, but as a great poet his fame is undiminished. The friend of these two master poets, Robert Southey, can hardly claim rank as a writer of verse, though pulsing with the true poetic instinct. Southey's fame must rest on his *Life of Nelson* and *Life of Wesley*. The former is one of the most perfect biographies, on a small scale, known to modern literature. Scotland produced one more lyrist, Thomas Campbell, whose name will be preserved by such poems as *Ye Mariners of England, The Battle of the Baltic*, and *Hohenlinden*. Though no admirer of the Lake Poets, he was a romanticist, and a sturdy ally in the fight against didactic classicism. Even Samuel Rogers, whose *Pleasures of Memory* appeared in 1792, felt called upon to swell the growing choir when the romantic movement was at its height. His *Italy* was written in 1822, but though containing some fine phrases, can hardly rank as poetry. A melodious singer of this epoch, and one to whom modern criticism is perhaps unjust, is Thomas Moore, the Irish lyrist. Moore wrote a number of songs and ballads, but his most ambitious work is *Lalla Rookh*, for which Longmans paid him 3,000 guineas. Romanticism was further popularized by the great "Wizard of the North," Sir Walter Scott (1771-1832), whose *Lay of the Last Minstrel* in 1805 aroused the enthusiasm of Europe. *Marmion* followed in 1808, the *Lady of the Lake* in 1810, and the *Lord of the Isles* in 1815, besides other epical narratives which were less successful. As Wordsworth phrased it, Scott was "the whole world's darling"; but when Byron sprang into universal fame, Scott laid aside the harp to join in the praises of the greater poet. But the love of ancient chivalry welled up within him, and found expression in the world-famed series of *Waverley Novels*. *Waverley*, his first novel, was published in 1814; and his last, *Count Robert of Paris* and *Castle Dangerous*, in 1831. History lives in the deathless pages of these novels. His greatest results are wrought by the simplest means, and in this consummate mastery over his art Scott is excelled only by Shakespeare, and rivaled only by Goethe. His poetry is rich in color, and owes its force to its simplicity and vividness of phrase. But beneath this power of description and stirring narrative there are no depths that call to our deepest nature; there are no heights which bid our souls to soar. The age needed poetry throbbing with the passions and promises of the present. An unintelligible world hungered for a voice to express its hopes, its bitterness, and its rage; and turned with eagerness to the wild, unbridled verse of Byron. The pent-up spirits of the revolutionary era at last found an outlet, and England fell at the poet's feet dazzled by his brilliance and his daring. On the publication of *Childe Harold's Pilgrimage* Byron (1788-1824) "awoke one morning and found himself famous." His popularity was increased by the *Giaour* and the *Bride of Abydos*, 1813, and the *Corsair* and *Lara*, 1814; "and at twenty-four," writes Macaulay, "Byron found himself on the highest pinnacle of literary

fame, with Scott, Wordsworth, Southey, and a crowd of other distinguished writers at his feet." A reaction was caused by his domestic delinquencies, and Byron left England, in April, 1816, never to return. In temperament he was reactionary, but, as he was the hero of his own poems, he was a Romantic in spite of himself. The *Vision of Judgment, Beppo,* and *Don Juan* belong to the last six years of his life. *Don Juan* is considered his masterpiece, and reveals to perfection his many-sided power. In the words of a Quarterly Reviewer (October, 1871), "it forms the copestone of Byron's fame." Byron must be numbered with the greatest English poets. Modern criticism decries his art and his faulty meters; but he was a writer of force and passion, hurling his riotous numbers in proud defiance of all convention. Though not an original thinker, he imbibed the ideas of his age, and flung them wide in storm-swept verse. His poetry never reaches the sublime, and its influence on English verse is inappreciable. Prose writers, like Bulwer, it directly inspired; whilst on the continent, a legion of poets were fired by its spirit. The revival of Polish and Russian literature is due to Byron's influence, and the romantic writers of France worshiped at the altar of his genius.

Unlike Byron, Shelley (1792-1822) was a poet of supreme imaginative power. Like his own skylark he soared in the boundless realms of imagination, filling the heavens with the glory of his song. His fine lyrical drama, *Prometheus Unbound,* portrays a regenerated universe when the love in man and nature shall be all in all, and stands alone in modern poetry for the splendor of its conception and the beauty of its form. Who will forget his *Adonais* or the charm of his matchless lyrics? The *Ode to a Skylark* is the most perfect lyric of modern literature. As a prose-writer, too, Shelley holds a distinguished place. The sadness of his music slowly died, and the love he sang lifted his soul to the Fount of Love; until near his untimely death we find him writing an essay in praise of the Christ he once had despised.

The close of the revolutionary movement is marked by Keats (1795-1821), who, unmoved by the spirit of his age, sought inspiration from Spenser and the minor poems of Shakespeare. His *Endymion* and *Hyperion* are exquisite poems, rich in promise. His every ode is "a thing of beauty." The influence of Keats on English poetry has been considerable. He was the unconscious founder of the school of ornate and artistic poetry, which holds that art exists only for its own sake, and that beauty and loveliness alone are worthy to be worshiped.

Mention must be made of Leigh Hunt (1784-1859), a graceful poet and an essayist of the *Spectator* school; Walter Savage Landor (1775-1864), best known for his *Imaginary Conversations of Greeks and Romans,* and *Pericles and Aspasia,* as well as some dainty "occasional pieces"; Felicia Dorothea Hemans (1793-1835), whose poetry was long deservedly popular; and James Montgomery (1771-1854), author of the *West Indies,* the *Pelican Island,* and other poems.

Turning once more to the prose writers, the eighteenth century closed with the brilliant orations, the trenchant and melodious prose of Edmund Burke (1729-1797). His most powerful works are the *Reflections on the French Revolution,* 1790, *Letter to a Noble Lord* (the Duke of Bedford, who had attacked him for taking a pension), 1795, and the *Letters on a Regicide Peace,* 1796. His famous *Essay on the Sublime and Beautiful* belongs to the days of Johnson and Goldsmith. The close of the century gave us the inimitable *Life of Johnson,* by Boswell, and henceforward biographies came into great prominence. We must pass over the "School of Terror," founded by Mrs. Radcliffe, M. G. Lewis, Beckford, and William Godwin, in whose romances fear was the dominant passion; Miss Burney, a social satirist, whose *Wanderer* was produced simultaneously with *Waverley,* 1814; and Maria Edgeworth, whose delightful sketches of Irish life and manners charmed the readers of the first half of the last century. But the name of Jane Austen (1775-1817) bids us pause. Amongst the creators of literature Jane Austen takes a foremost place. Her six immortal novels, the best of which is perhaps *Pride and Prejudice* (the MS. of which went a-begging for nearly 20 years), were issued between 1811 and 1818. She wrote "with an exquisite touch which renders commonplace things and characters interesting from truth of description and sentiment"; and in her own province she has never been surpassed. Her influence on English fiction was wholesome and lasting. This is the age, too, of Hallam, Mill, and Mitford, the historians; of Paley, Hall, and Chalmers, the theologians; of Hazlitt, Broughton, Jeffrey, and Sydney Smith, the most celebrated of that brilliant coterie which gathered round the newly-founded critical organs—the *Edinburgh* and the *Quarterly Reviews.* William Gifford was the first editor of the *Quarterly,* 1808 to 1824. His most celebrated successor was J. G. Lockhart, whose biographies of Scott, Burns, and Napoleon are well known. The *London Magazine* came out in 1820, and in its pages first appeared Lamb's *Essays of Elia,* De Quincey's *Opium Eater,* and, later, Carlyle's *Life and Writings of Schiller.* De Quincey was one of the most brilliant writers of modern prose, a dreamer of exquisite dreams, though too rarely is the substance worthy of the style which enshrines it. Autobiography — impassioned, psychological, minute—was made by him a fertile branch of literature. The death of Byron was followed by a host of writers of "fashionable" novels, chief amongst whom were Edward Lytton Bulwer (afterwards Lord Lytton) and Benjamin Disraeli. Bulwer's *Pelham* (1828) and Disraeli's *Vivian Grey* (1826) were the beginnings of the "Dandy School" of fiction. A new era in criticism was begun in 1825 when Macaulay contributed his essay on Milton to the *Edinburgh Review.* This was the first of those famous essays, which now are "known to every schoolboy," and which have done so much to raise the level of cultivation. Such was literature when Queen Victoria came to the throne.

VII. The Modern Era (1837-1909).—In the lull which followed the outburst of the Byronic period, the voice of Carlyle thundered a newer message to a generation not ready to receive it. His *French Revolution* burst upon the world in 1837, and the despised *Sartor Resartus* in the following year. As an historian he had carved out a new path, laying bare

the minutest facts, and probing into the very souls of men. Herein lies his greatness. The "Seer of Chelsea," rugged and stern like an Alpine peak, was the greatest force in the literature of his day. His mission was to reconstruct, and *Sartor*, his most original and in some respects his greatest work, grappled with the perplexities of the times, and offered a grim solution. Walt Whitman aptly remarked that the army of British thought during this period with Carlyle left out "would be like an army with no artillery." His influence now is well-nigh spent, but his was the cry that stirred the blood of men like Ruskin. His later style was a deliberate creation by which to thrust home his gospel. The critics branded it as a chaos of capitals, compounds, and broken English; but, though Teutonic in form and in its labyrinthian periods, it was well fitted to his turn of thought. In striking contrast to Carlyle, though like him in his fundamental conception of history, is the ever-popular Macaulay. His *History of England* began to appear in 1848, and here his style is seen at its best. The accuracy of the *History* has been challenged; but Macaulay's weakness lay in too often drawing biased conclusions from statements too incomplete. His philosophic endowment was unequal to the immensity of his literary genius. The minstrelsy of Macaulay is as well known as that of Scott. The *Lays of Ancient Rome* were published in 1842. There is an unfading charm in the dash and swing of the noble lines, the clash of steel and the lust of battle. From two great prose writers we now turn to two great poets—Tennyson and Browning, both true descendants of the romantic school, both swayed in turn by Byron and Wordsworth, Shelley and Keats. Tennyson's one desire was to excel in epic narrative. The *Idylls of the King* are surpassed only by *Paradise Lost* as examples of non-dramatic blank verse in our language. Tennyson cannot equal the sublime stateliness of Milton, but to no other poet can the creator of the Idylls be compared. His *In Memoriam* (1850), a series of short poems woven together by a common sentiment, contains the most perfect representation of his genius, and is, moreover, a complete expression of the spirit of his age. His noblest work is pervaded by the true religious spirit. The Unseen is to him intensely real, and, gazing into "the abysmal deeps of personality," he is ever conscious of the greatness and immortality of the soul. In his tenderness and reverence towards woman Tennyson has never been excelled. As a dramatist, except in *Becket* (1885), he was not successful. From the death of Wordsworth to his own death, he wielded a vast power over English letters, and none challenged his supremacy as the greatest poet of his time. He lacks the inward strength of Milton, and the consummate ease of Wordsworth. It was Emerson who gave it as his opinion that the latter was *the* poet of modern England, and that "other writers have to affect what to him is natural."

We turn now to a greater mind, though not to so great an artist—Robert Browning. He is the Carlyle of poetry, and heeds not the form that bears his message. Strength to him is more than beauty. His style—rugged, condensed, involved—is the stumbling-block to the multitude; but his poetry has influenced the minds of the few, and these the leaders of the world of thought. His masterpiece, the *Ring and the Book*, is the most stupendous work of genius of our time; while his *Paracelsus* is one of the greatest poems in our literature. Elizabeth Barrett Browning, his wife, ranks as a great poet, though her writings are of uneven merit. *Sonnets from the Portuguese* and *A Child's Grave at Florence* are her best efforts. *Aurora Leigh*, an ambitious metrical romance, was extravagantly praised by Ruskin as the greatest poem of the century. The marriage of these two poets is one of the most beautiful unions in the history of any literature.

Among the dwellers on the slopes of Parnassus place must be found for Matthew Arnold and the three "pre-Raphaelite" poets, Rossetti, Morris, and Swinburne. Arnold (1822-1888) is at his best in his elegies, and his *Thyrsis* is no unworthy second to Milton's *Lycidas*. A purely intellectual poet, he speaks to the mind and never to the heart. Romanticism left him untouched and unmoved. He figured as a prose writer to a later generation, and his clear, classical style is seen to advantage in his *Essays on Criticism*, published in 1865. No poet in recent years has so greatly influenced the trend of verse as Dante Gabriel Rossetti (1828-1882). The excellence of his ballads, *The King's Tragedy* and *Rose Mary*, almost equals the beauty of his well-known sonnets. His sister, Christina Rossetti (1830-1894), "the soul whose breath among us was a heavenward song," is less great, though possessed of greater spontaneity. Most of her poems are of a devotional nature. Her sonnets, as in *Monna Innominata*, are almost perfect. The greatest work of William Morris (1834-1896) is *The Earthly Paradise*, modeled on the art of Chaucer, but lacking the master's spirit. Morris modestly describes himself as "the idle singer of an empty day." Algernon Charles Swinburne (1837-1909), a great metrical artist, enriched English literature by his *Atalanta in Calydon* (1865), a fine drama on the Greek model. His *Poems and Ballads* (1866), many of which are unworthy of him, at once "raised a storm, and founded a school." The lesser lights need not detain us long. Philip James Bailey's commonplace poem *Festus* came out in 1839. The following year Barham published his *Ingoldsby Legends*, the most popular of any humorous verse of the century. Of Hartley Coleridge, his sister, Sara Coleridge, Henry Taylor (author of *Philip Van Artevelde*), R. H. Horne (best-known by *Orion, an Epic Poem*), C. S. Calverley (the witty writer of *Verses and Translations* and *Fly Leaves*), the dramatists, T. N. Talfourd and J. W. Marston, A. H. Clough, Jean Ingelow, and the graceful writer, Adelaide Anne Procter (daughter of the poet "Barry Cornwall"), we can only make the barest mention.

The melodious paraphrase of the *Rubaiyat* of Omar Khayyâm published by Edward Fitzgerald in 1859 must be noted in passing. The school of poetry nicknamed by the Scotch poet Aytoun (1813-1865) "the Spasmodic," calls for little attention. Sydney Dobell (1824-1874) and Alexander Smith (1829-1867) were its two chief members, all of whom were better endowed with passion than intellect. The mystical lyrist, Cov-

entry Patmore (1823-1896), has more originality. His greatest work is *The Angel in the House*. His odes, *The Unknown Eros*, are well known. "Owen Meredith," the second Lord Lytton, published his *Clytemnestra and other Poems* in 1855. A better, though unrecognized poet, was J. B. Leicester Warren (Lord de Tabley), whose first volume of importance, *Praeterita*, was issued in 1863 under the pen name of "William Lancaster." His *Poems Dramatic and Lyrical* appeared in 1893.

The earlier works of fiction were characterized by naturalness, spontaneity, and absence of any underlying "purpose." The writers were content to unfold a tale. The evolution of the novel is not marked by well-defined shapes; but it may be noted that romantic fiction culminated in Scott, domestic fiction had its origin in Jane Austen, the "purpose" novel came into being with Thackeray, while with Dickens the spirit of humanitarianism and democratic sympathy first entered into fiction. Thackeray (1811-1863) created a new school; for his philosophy of life permeated his writings. Not only was he a great novelist, but one of the greatest masters of style in English literature. Thackeray wrote in all 26 volumes, but his fame must rest on his five great novels: *Vanity Fair, Pendennis, Esmond, The Newcomes*, and *The Virginians*. Closer to the nation's heart was his great contemporary, Charles Dickens (1817-1870). Dickens was a true lover of his fellow men, and his novels reveal his sympathies. The range of his creative genius was immense. *Pickwick, Oliver Twist, Nicholas Nickleby, The Old Curiosity Shop, Martin Chuzzlewit, David Copperfield*—these are household words; for truly has Dickens peopled our imagination with the creatures of his art. It is the fashion to magnify his faults and limitations; but his genius is bound up with the life of the race, and his name is among the immortals.

We now turn to the Brontë sisters, Charlotte (1816-1855), Emily (1818-1848), Anne (1820-1849), children of the wind and the Yorkshire moorland. Anne wrote *Agnes Grey* and *The Tenant of Wildfell Hall*, but these were eclipsed by the novels of her greater sisters. Charlotte owes her fame to three great stories, *Jane Eyre, Shirley*, and *Villette*. Emily's only novel is *Wuthering Heights*, a work of genius, though artistically faulty. Each wrote in a poet's prose, strong with passion. Charlotte Brontë undoubtedly ranks with the foremost novelists of the century. Another woman writer, George Eliot (Mary Ann Evans, 1819-1880), brings the race of giant novelists to a close. Her *Scenes from Clerical Life*, considered by some critics her masterpiece, appeared in 1856; and was followed by *Adam Bede* (her most popular novel), *The Mill on the Floss, Silas Marner, Romola, Felix Holt, Middlemarch, and Daniel Deronda*. Though her art is too often marred by weight of learning and philosophy, she is a great creative artist, great in mind and nature, and her place in literature is well secured. One of the most prominent writers of genius is Charles Reade (1814-1884), whose masterpiece is *The Cloister and the Hearth*. His popular book, *It is Never Too Late to Mend*, is one of the best examples of the novel of purpose. Charles Kingsley (1819-1875) shares with Reade a leading place in the secondary rank of novelists. His best novel is *Westward Ho!* In this, as in his *Alton Locke* and other novels, he preaches his "Muscular Christianity." Kingsley wrote some charming poems; *The Three Fishers, The Sands of Dee*, and *Oh, That We Two Were Maying* strike a note of rare genius. A writer of less pretension is Anthony Trollope (1815-1882), a portrayer of middle-class life in provincial England. His best work is *Barchester Towers*. Among the romancers of later days Robert Louis Stevenson (1850-1894) holds a place apart. His novels, *Treasure Island, Kidnapped*, and *Catriona*, though frankly written for boys, have won a permanent place in literature by their abiding charm and the beauty of their style. His poems, essays, and familiar letters all bear the stamp and glamour of his personality. The impulse given by Stevenson to the new romantic movement is seen in the novels of many writers of to-day, notably Stanley Weyman, "Anthony Hope," Max Pemberton, "Q" (A. T. Quiller-Couch), and Conan Doyle, the creator of *Sherlock Holmes*. The two greatest living novelists are George Meredith (1828-1909) and Thomas Hardy (1840). Meredith is the most intellectual novelist of our times, a great poet expressing himself in prose. *The Ordeal of Richard Feverel* and *The Egoist* are considered his best novels, rich in satire and humor; but owing to the style of this "Browning of novelists," his works were for many years caviare to the general. Less polished, but of striking originality, are the works of Thomas Hardy. Of his many books five are worthy of high place in English fiction: *Far From the Madding Crowd, The Return of the Native, The Woodlanders, The Mayor of Casterbridge*, and *Tess of the D'Urbervilles*. These two novelists have left their impress on almost all recent English fiction. Not far below them is R. D. Blackmore (1825-1900), author of *Lorna Doone*, a quasi-historical novel of the West of England, popular on both sides of the Atlantic.

The influence of Dickens is apparent in the novels of Wilkie Collins (1824-1886), the chief exponent of the "sensational" school, and in the works of those three *amuseurs*, James Payn (1830-1898), William Black (1841-1898), and Sir Walter Besant (1836-1901). The latter's *All Sorts and Conditions of Men* gave the idea for the People's Palace in the East End of London, opened by Queen Victoria in May, 1887. Of women novelists during this epoch, not the least distinguished is Mrs. Gaskell, whose *Cranford* and *The Life of Charlotte Brontë*, 1857, are likely to delight many generations. Two of the most remarkable religious novels are by women: *Robert Elsmere* by Mrs. Humphry Ward, whose best novel is *Marcella;* and the *Story of an African Farm* by Olive Schreiner. George Macdonald and J. H. Shorthouse, author of *John Inglesant*, also deal with religion from different standpoints. Amongst writers for children two names deserve more than passing notice: "Lewis Carroll" (Rev. C. L. Dodgson), author of *Alice's Adventures in Wonderland*, 1865, with its sequel, *Through the Looking-Glass*, 1872, and Andrew Lang, that versatile writer whose fairy-tales enchant the younger generation. There are many writers of deciduous fame, whose names are all too prominent in our lending libraries; writers who reflect the prevailing versatility and

want of thoroughness, and whose popularity is determined by their ability to amuse rather than their genius to create.

In the domain of criticism one name stands out preëminent. The enthusiasm of John Ruskin (1819-1900) has fired more minds to the quest of beauty than has been effected by any other writer in the history of the world. His sympathies, though at times violent and paradoxical, are well-nigh universal. He has written on art, literature, morals, economics, society, and almost everything; but as an art critic he will be best remembered. Ruskin is the greatest prose writer of modern times, and one of the most perfect masters of style and language that has ever lived. His three greatest works are *Modern Painters* (1843), *Seven Lamps of Architecture* (1849), and *Stones of Venice* (1851-1853). His social and economic writings are not always marked by soundness of thought or sobriety of judgment, but the nobility of their aim can never be gainsaid. Besides Ruskin and Matthew Arnold, another Oxford man calls for notice as a great critic. Walter Pater (1839-1894), whose genius was grudgingly recognized, has become a force in contemporary literature. He has been called "the most rhythmical of English prose writers," and his *Renaissance: Studies in Art and Poetry* and *Appreciations* give him high rank among modern writers. Benjamin Jowett (1817-1893), the celebrated master of Balliol, won his place in literature by his brilliant translations of Plato, Thucydides, and *The Politics* of Aristotle.

Of scientific writers. Charles Robert Darwin (1809-1882), the father of evolution, demands attention in a survey of literature. His epoch-making works, the *Origin of Species* (1859) and *The Descent of Man* (1871), have revolutionized thought, not only in regard to biology, but in philosophy, religion, literature, and literary criticism. John Tyndall (1820-1893), the physicist, was known as a popularizer of scientific truths rather than as an original investigator. Thomas Henry Huxley (1825-1895), the distinguished biologist, was a man of great literary power; and, besides winning fame for his original research, was a vigorous defender of the pioneers of evolution. He loved to "war upon the lions in the wood." Herbert Spencer (1820-1903) made a deep impression on the world's thought, and his philosophy is the most comprehensive application of the evolutionary principle that has ever been attempted. John Stuart Mill (1806-1873), the famous empirical philosopher, is no longer the stimulating force he once was. His reputation chiefly rests on his *System of Logic* and *Political Economy* (1848). Mill was assisted in his *Logic* by Alexander Bain (1818-1903), best known for his book on *Mental and Moral Science*. The leader for many years of the Hegelian school of philosophy at Oxford was Thomas Hill Green (1838-1882), whose *Prolegomena to Ethics* appeared after his death. One of the best-known scientific writers of our times is Sir John Lubbock, author of *Prehistoric Times, The Origin of Civilization and the Primitive Condition of Man* (1870), and the *Pleasures of Life*, a collection of miscellaneous essays whose popularity far exceeds their intrinsic merit. The name of Friedrich Max Müller (1823-) is known to every student of philology and ethnology. His most popular books are his *Lectures on the Science of Language*, and *Chips from a German Workshop*.

Of the many eminent historians who belong to the modern era, space will only permit of the barest mention. George Grote's *History of Greece* was published between 1846 and 1856. Dean Milman's *History of Christianity* (1840) and its continuation, the *History of Latin Christianity* (1854-1856), are still valuable books of reference. Froude's great work, the *History of England, from the Fall of Wolsey to the Defeat of the Spanish Armada*, is distinguished by the brilliance of its style, but unfortunately marred by inaccuracy and partisanship. In striking contrast to Froude is the greater historian, Freeman (1823-1892), who combined a remarkable breadth of historic view with the most scrupulous accuracy. William Stubbs, born at Knaresborough, Yorkshire, in 1825, published his monumental work, *The Constitutional History of England* in the years 1874 to 1878. He illuminated the byways of history, and as Regius Professor of Modern History at Oxford he gave a lasting stimulus to historical study and research. Sir Thomas Erskine May traced the growth of the English Constitution from where Hallam left off, and, by his *Constitutional History of England since the Accession of George III.*, made a valuable contribution to historical literature. Maine's great work on *Ancient Law* was produced in 1861, and established the author's name as an original thinker. Mandell Creighton's great work, *A History of the Papacy from the Great Schism to the Sack of Rome*, is of the highest value. The *Short History of the English People*, by John Richard Green, made a sensation on its appearance in 1874. It treated history in a new vein, and was written in a picturesque style of poetic beauty and brilliance. Green expanded the *Short History*, but the larger work as a literary effort was not so successful. Of Samuel Rawson Gardiner, Sir John Seeley, W. E. H. Lecky, and James Bryce, as historians, and Walter Bagehot, the great authority on banking and finance, we must be content with recording their names. With a reference to four lesser poets of our own times we must conclude this sketch. Edwin Arnold popularized the story of Gautama Buddha by his *Light of Asia*. This was followed by *The Light of the World*, a poem dealing with Christ and Christianity. Austin Dobson, author of *Vignettes in Rhyme* and *Proverbs in Porcelain* is one of the most noted successors of Hood and Barham. Alfred Austin, the Poet Laureate, has written *The Golden Age, a Satire, Savonarola, English Lyrics*, and many prose works. None of his writings have any special claim to distinction. Rudyard Kipling's poems of Indian soldier life struck a new vein in English poetry, while his stories of Indian life captured the imagination of his contemporaries. The Victorian age has undoubtedly held its own in pure literature; and certainly no former period has produced so vast an output. In the Drama and Theology the accomplishment has not been great from the literary side; but this has been counterbalanced by the growth of the Novel, which to-day holds the place once occupied by the Epic, the Drama, and the Sermon, and which combines their attractions and appeals.

AMERICAN LITERATURE.

There is a tendency among many writers on the history of American literature to include in the survey everything in the nature of a book. In this way they seek to show that the literature of the country is extensive and they measure the literary growth and progress in quantity only. But the day has long passed by when it was at all, if ever, necessary to bolster up the national achievements by such padded methods. It is infinitely better to measure the literary activity of our country by the same methods which are applied to the study of the literature of other though much older countries, and see in the accomplishments of its literary forces the promise of greater things yet to be done.

It is not at all strange that there is little worthy of record prior to the year 1700. From 1608, when John Smith's *True Relation* was published in London, until 1639, when Stephen Daye set up his first printing press in Cambridge, Mass., such books as were written by those who lived in America were printed in England. While Milton and Shakespeare were producing their glorious works in England, their fellow-countrymen in America were writing nothing of the slightest æsthetic value in their new homes across the seas. Their writings are of value to the historian and the antiquarian only. Captain Smith's contribution to the history of Virginia, William Strachey's story of the wreck of Sir Thomas Gates, Colonel Norwood's account of the wreck of Governor Berkeley, Governor Berkeley's share in the *Burwell's Papers*, John Hammond's *Leah and Rachel*, George Anson's *Character of the Province of Maryland*, Daniel Denton's *Brief Description of New York*, and Gabriel Thomas's *Account of Pennsylvania and New Jersey* are all that the South and Middle American colonies contributed to the literature of America before 1700.

But in New England there was no dearth of literary contributions. Governor Bradford of Plymouth and Governor Winthrop of Massachusetts in history; Thomas Hooker, Thomas Shepard, John Cotton, and Peter Bulkley in religion and theology; Roger Williams, one of the greatest of the early Americans; Daniel Gookin on the Indians; Nathaniel Ward in satire; John Josselyn in adventure; the *Bay Psalm Book* of 1640; Mrs. Anne Bradstreet, Michael Wigglesworth, Peter Folger, and Rev. Urian Oakes in poetry are the chief names in New England literature in the seventeenth century. Early in the next century are the famous and voluminous writers Increase and Cotton Mather, Judge Sewall's *Diary* (1673-1729), Mrs. Sarah Kemble Knight's *Diary* of a horseback ride from Boston to New York (1704), and the verse of Rev. Mather Byles and Joseph Green. The history by Rev. Thomas Prince and the *Summary* by William Douglass are notable works of the early eighteenth century. In metaphysics, Jonathan Edwards, who ranks as the most original theologian and metaphysician America ever produced, is famed alike for his *Freedom of the Will* (1754) and his awe-inspiring sermons, such as the famous one of Enfield, Conn. Benjamin Franklin, with all of his contributions to the study of natural science, politics, and homely moral philosophy, gave us in his *Autobiography* the only truly literary classic which America produced before the nineteenth century. John Trumbull, the author of *McFingal*, and his companion satirist, Francis Hopkinson; Thomas Godfrey, who gave us in *The Prince of Parthia* our first real poetical tragedy; Joel Barlow's *Columbiad;* Thomas Hutchinson, historian and dramatist; Mrs. Mercy Otis Warren; Phillis Wheatley, the negro poetess; the "Hartford Wits"; Mrs. Susanna Haswell Rowson, author of *Charlotte Temple;* Thomas Paine, who contributed much towards the spirit of '76; and Crèvecœur in his *Letters from an American Farmer* (1784); Royall Tyler, with the first important American comedy, *The Contrast* (1786); the philologists, Noah Webster and Lindley Murray; and our first novelist, Charles Brockden Brown, with his *Wieland, Ormond,* and *Arthur Mervyn,* published 1797-1800, are noteworthy at the close of the eighteenth century. Glancing over these names, which are only a few of the most prominent, it is hard to understand the statement that has sometimes been made by writers that practically nothing worth while had been done in literature in America until after 1800. It is well to modify that criticism and to say that, while every one recognizes that the best in American literature was done after 1800, there was much good work accomplished in those early days while a great nation was being built by practical, resolute men with little leisure to devote to æsthetic development.

The nineteenth century begun with John Marshall's *Life of Washington* (1804); Washington Irving's *History of New York;* the poetical works of Washington Allston, John Pierpont, and Mrs. Sigourney; and the dramas of John Howard Payne. The *North American Review*, founded in 1815, and the publication of *Thanatopsis* by Bryant in 1816 were important literary events; and before the first twenty years of the century had elapsed we had the works of Joseph Rodman Drake, author of *The Culprit Fay,* and the poems of Fitz-Greene Halleck.

Then followed James Fenimore Cooper, whose *Leatherstocking Tales* were the event of the third decade. They gave him a world-wide fame such as has been achieved by few American writers. Contemporary were James Gates Percival, Edward Coate Pinkney, Jared Sparks, George Ticknor, Lydia Maria Child, Edward Everett, Channing the elder, and Bronson Alcott. Webster's reply to Hayne belongs also to this time. From 1830 to 1840 is a period of beginnings. The *Liberator* was founded by William Lloyd Garrison in 1831 and the anti-slavery movement began with this and his association with Whittier, who published his first book in this decade. Nathaniel Parker Willis was the most representative man of letters in New York. Simms, Kennedy, and Bird were writing their romances in the South, and George Bancroft was beginning his career. In the early forties the Transcendental movement began in New England. This is the most important literary event in America before the Civil War. Apart from the literary excellence of the work of that school, it marks the transfer of the center of the most brilliant activity from New York to New England. The very names of Thoreau, Emerson, Hawthorne, and Poe mark this era as the most important in American literature. It is strange

that in America Hawthorne, through his *Scarlet Letter* (1850), and Emerson, as philosopher and poet, vie in the public minds as the foremost man of letters; yet, in Europe, that place is unhesitatingly given to Edgar Allan Poe, whose haunting poems and tales have gained a higher place abroad than has the work of any other American writer. At home, however, he is refused a niche in the Hall of Fame by his countrymen.

Of Longfellow's work it is almost sufficient to speak of its great cultural influence upon the American people. The question of literary merit or demerit or of relative rank pales before the recognition of his great value as the man who above all others taught the people of the country to love poetry. It has been for years more or less the fashion in literary circles to depreciate the genius of this best loved of American writers. That this criticism has been carried too far there is no doubt, and it is equally certain that in the inevitable reaction he will measure up at least nearly the equal of his greatest contemporary. Oliver Wendell Holmes has broken through the panoply of local fame and is attaining to national fame commensurate with his great gifts. James Russell Lowell's *Biglow Papers* (1848) gave him first place as poetical humorist and satirist among the antebellum writers. He afterwards became one of our foremost literary critics and letter writers. Between 1850 and 1860 those estimable historians, William H. Prescott and John Lothrop Motley, were building their fame, which is, perhaps, only excelled by that of their brilliant rival, Francis Parkman. Among these greatest names one must not lose sight of Richard Henry Dana, Jr., with his *Two Years before the Mast* (1840), and Herman Melville, writers of our best books of adventure; nor of Bayard Taylor, Donald G. Mitchell, Richard Grant White, James T. Fields, Thomas Wentworth Higginson, Charles Eliot Norton, George William Curtis, E. P. Whipple, Paul H. Hayne, Henry Timrod, Harriet Beecher Stowe, and Walt Whitman. Between 1860 and 1870, that period of tremendous national disturbance, we find, strangely enough, that prince of humorists, "Mark Twain," who at this day is probably the one American writer who enjoys a world-wide fame. Edward Everett Hale's *Man without a Country* appeared in 1863 at a time most fitted to develop a loyalty to the Union. To this time also belonged those two writers cut off in their early success, Theodore Winthrop and Sidney Lanier. From 1870 dates the rise of Francis Bret Harte, whose *Luck of Roaring Camp* (1868) ushered in that peculiar form of short story which deals with local phases of national life in all parts of the country. Previous to this time literature was centralized: New York and New England dominated the literary realm. The change is now perceptible and a score of names present themselves in other sections—names which have since become inseparably connected with the nation's literature. There are Joel Chandler Harris from the South with his *Uncle Remus* creation; Edward Eggleston with the *Hoosier Schoolmaster;* George W. Cable with his tales of Creole life around New Orleans; Mary Noailles Murfree ("Charles Egbert Craddock") with stories of the mountain whites of Tennessee, Kentucky, and Georgia; Harold Frederic from western New York state; Hamlin Garland from the Northwest; James Lane Allen from Kentucky; Mary E. Wilkins Freeman with her delightful delineations of New England life; and Frank Stockton's *Rudder Grange* pictures of a composite American country life. This was the beginning of the widespread literary activity and of the end of that literary supremacy which New England had so long enjoyed.

The work of such naturalists as John Burroughs gave way in popularity before the newer animal story writers, of which Ernest Thompson Seton was the pioneer. The immense popularity of General Lew Wallace's *Ben Hur* (1880) is a peculiar phase of literary appreciation. Francis Marion Crawford gave us the dramatic novel; William Dean Howells created the novel of American social life; Henry James planned novels so subtly psychological and of a style so refined as to be hard reading; the romantic novel was introduced by Anthony Hope Hawkins, an English writer, and rapidly taken up by such writers as Winston Churchill, Mary Johnston, Charles Major, Maurice Thompson, S. Weir Mitchell, Paul Leicester Ford, and others; and novels dealing with an individual struggle against social obligations, as Robert Grant's *Unleavened Bread*, Elizabeth Stuart Phelps's *A Singular Life*, and Booth Tarkington's *A Gentleman from Indiana*, were extremely popular. Such works have sold in hundreds of thousands and have caused it to be said that the reading of light fiction predominates at the present time in America.

Few names are really important in American poetry since the Civil War. Edmund Clarence Stedman, Richard Henry Stoddard, Thomas Bailey Aldrich, Richard Watson Gilder, H. C. Bunner, Richard Hovey, Bliss Carman, and Madison Cawein are among the few whose poetical work may be considered unusually excellent.

In history such writers as John Fiske, John Bach McMaster, Woodrow Wilson, James Ford Rhodes, and William M. Sloane have followed the modern method of writing history from the standpoint of the development of the people.

While good work has been done in literary criticism no one has yet been found worthy to take Lowell's place in that attractive field. How far the fact that the essay has declined as a means of purely literary expression may have caused this it is impossible to estimate; but there is no doubt that it has been harder to gain the favor of the public by that medium than it was formerly. William Dean Howells, Hamilton Wright Mabie, Henry James, George E. Woodberry, and William C. Brownell have done excellent work in this department.

The dialect poems by James Whitcomb Riley, a genuine poet of childhood, in their "Hoosier" humor and pathos, and the simplicity, sincerity, and beauty of his pure English compositions are dear to the hearts of the people. Eugene Field, the widely known poet of childhood, shares with Riley this empire of love, and Field also ranks as a scholarly humorist. The *Little Lord Fauntleroy* of Frances Hodgson Burnett (1886) was in its way one of the most important additions to American literature of children.

Of the maze of books and magazines with which the twentieth century period confronts a student of American literature it is yet impossible to speak critically.

CANADIAN LITERATURE.

For a young nation whose early life was a constant battle for existence, Canada holds a prouder place in the republic of letters than any other British colony. The germs of a national literature are steadily unfolding, and, although no towering genius has yet arisen, there are a legion of writers who have interpreted their native land with distinction. But first we must notice the writings of the old French explorers and missionaries. Seventeen years before the *Mayflower* sighted these shores, Samuel de Champlain produced his work on the Indian tribes, and ten years later his well-known *Voyages.* The first poems written in the New World were *Les Muses de la Nouvelle France* by Lescarbot, who records the founding of Port Royal on the Bay of Fundy in 1605. The romantic history of New France has attracted such able writers as Charlevoix, Abbé Ferland, Garneau, and others. In the domain of poetry many French-Canadian writers have won considerable distinction. We may mention Casgrain, author of *Les Légendes;* Tassé, who wrote *Les Pionniers de l'Ouest;* Crémazie, author of the fine elegy *Les Morts;* Le May, Sulte, and Fréchette. The latter, who is a brother-in-law of W. D. Howells, the American novelist, was honored in 1880 by the French Academy.

Of the earlier Canadian writers who made English their vehicle none is more famous than Judge Haliburton, whose immortal *Sam Slick, the Clockmaker* (first published in Joseph Howe's newspaper, the *Nova Scotian*), is treasured wherever true wit and humor are appreciated. John Galt, by his *Lawrie Todd, Bogle Corbet,* and other books dealing with Canadian life, is, though only a three years' sojourner in the country, a worthy contributor to Canadian letters. Charles Heavysege (1816-1876) wrote a number of poems, novels, and tragedies; but it is as the author of *Saul*—a noble theme nobly treated—that he is best remembered.

The poets of Canada have drawn their inspiration largely from the motherland; but many writers have arisen who have voiced the patriotism of their native country. *Dominion Day,* by John Reade, is one of the best of these patriotic poems. More popular, though of less poetic value, is *The Maple Leaf Forever,* which has been set to music by the author, Alexander Muir. The versatile writer, Charles G. D. Roberts, has given us some polished verse of a similar character. Like most Canadian poets he has found his greatest inspiration in the lavish wealth which nature has provided. We see this in such of his poems as *Resurrection* and *Kinship.* William Alfred Campbell drew from the same source, but perhaps the foremost nature-poet is Archibald Lampman. His work is uneven, but some of his poems, such as *April in the Hills* and the sonnet *Midsummer Night,* are marked by strength and originality. His biographer, Duncan Campbell Scott, is fired by the same muse, and his *Labor and the Angel* have a calm and freshness of their own. The poems of Alexander McLachlan, who has been called "The Burns of Canada," and William Edward Hunt, are in true accord with nature. Wilfred Campbell, the "Lake Poet of Canada," is best known by his *Lake Lyrics,* although *The Dread Voyage* and *Mordred and Hildebrand* have been widely commented upon in America and England. The first native poet whose verses met with recognition by the leading English critics was George Frederick Cameron (1854-1885). His defiant *What Reck We of the Creeds of Men?* will not be forgotten. Though every true Canadian is a lover of nature, with a due appreciation of what is noble and sublime, yet other themes have been sung by many of the most successful poets. The romance of Canadian history has not unnaturally fired the native bards, and the heroic deeds of Champlain, Cartier, Montcalm, Daulac, Wolfe, Brock, Tecumseh, and Laura Secord, have been enshrined in noble verse. George Murray's *How Canada Was Saved,* M. J. Ratzmann Lawson's *The Battle of Grand Pré,* Sarah Ann Curzon's *The Loyalists,* and Frederick George Scott's *In Memoriam,* are amongst the best poems of this description. Perhaps Canada's greatest lyrist and most original verse writer is Bliss Carman. His *Low Tide on Grand Pré* and *Behind the Arras* reveal a true poetic genius wedded to a fine technique. Space will not allow of more than the briefest mention of other poets, whose healthy verse is helping to mold a truly national literature. Francis Sherman, whose work recalls that of William Morris, aspires to the first rank with his idyllic *Matins;* Arthur Weir's *The Snowflake, and Other Poems,* contains much that is meritorious; Theodore H. Rand is associated with all that is best in Canadian poetry; John Stuart Thomson shows exceptional talent in his *Estabelle* and *A Day's Song;* Arthur J. Stringer has given us some lyrics of rare promise and originality; Charles Mair, author of the drama *Tecumseh,* has written some fugitive poems of undoubted talent; John Henry Brown's *Poems Lyrical and Dramatic* are deserving of wider attention; Bernard McEvoy's *Away from Newspaperdom* are pregnant with human interest; William T. James is the author of *Rhymes Afloat and Afield;* William Douw Lighthall has written some vigorous verse; E. B. Brownlaw has produced some scholarly lines; Dr. Thomas O'Hagan has contributed his two books of poems, *In Dreamland* and *Songs of the Settlement;* while the ever-popular Dr. W. H. Drummond, who stands in a class alone, has given us a number of French-Canadian poems combining humor, pathos, and picturesqueness in no stinted measure. In embodying the speech and thought of the *habitant* he has struck a rich and original vein. Of the women writers who have courted the muse, the most distinguished are Isabella Valancy Crawford, best remembered by her lyrics, *The Master Builder* and *The Axe of the Pioneer;* S. Frances Harrison ("Seranus"), the author of many poems descriptive of French-Canadian life; Ethelwyn Wetherald, Jean Blewett, Agnes Maule Machar ("Fidelis"), Elizabeth Roberts MacDonald, Mrs. McLeod, and Pauline Johnson—a lady with Mohawk blood in her veins—these have contributed freely to the great wealth of Canadian verse.

Of the prose writers Gilbert Parker has won an international reputation by the brilliancy of his works. His best known volumes are *Pierre and His People, Tales of the Far North, An Adventurer of the North, A Romany of the Snows, A Lover's Diary, The Trail of the Sword,*

The Seats of the Mighty, The Trespasser, and *The Battle of the Strong.* William Kirby is the author of the remarkable historical novel, *The Chien d'Or.* Another novel of Quebec is *The Bastonnais,* by John Lesperance. Among other story writers may be mentioned Major John Richardson, G. M. Adam, Susanna Moodie (sister of the accomplished Agnes Strickland), Lily Dougall, Miss M. M. Saunders, William McLennan, W. A. Fraser, Sara Jeannette Duncan (Mrs. Cotes), Jean McIlwraith, E. W. Thomson, Ralph Connor, Ernest Thompson Seton, and Grant Allen (a Canadian by birth though usually counted amongst English authors).

In the more serious departments of letters, such as science, history, and philosophy, Canada can boast of many able writers. Sir William Logan, the eminent geologist, is the first Canadian scientist to take European rank. Sir J. W. Dawson and his son, Dr. G. M. Dawson, have worthily maintained the tradition, and are numbered amongst the greatest scientists of modern times. Among historians, besides the world-famed Goldwin Smith, must be noted Sir John Bourinot, Sir James Lemoine, Dr. Kingsford, C. G. D. Roberts, Robert Christie, James Hannay, George Bryce, J. C. Dent, Doughty, whose six volumes on Wolfe's campaign is an important contribution to Canadian history, Dr. Todd, author of the authoritative *Parliamentary Government in England,* and Dr. Theal, famous for his monumental *History of South Africa.* Sir John Murray, who was born at Coburg, Ontario, is the great authority on oceanography; while Dr. Crozier, who has settled in England, is one of the most original thinkers to whom Canada has given birth.

LATIN-AMERICAN LITERATURE.

The literature of South America has not received the attention from the North that it certainly has merited; yet there is no country south of the Rio Grande but what can boast of an extensive literature and men of letters whose work commands a wider recognition. Long before Harvard opened its doors to students, colleges and universities flourished in the Spanish settlements. The University of the City of Mexico was founded in 1553, and the University of San Marcos at Lima in Peru in 1555. The best of Spanish culture was carried to the New World, and a community of intellectual interests was maintained between Spain and her colonies so long as the political ties existed. But this continental influence was not without its drawback on the native-born product, for the deterioration of letters in Spain followed by the corruption of taste known as Gongorism, was reflected in the Spanish-American literature of the seventeenth and eighteenth centuries.

In due course the influence of the Encyclopedists and of Rousseau began to be felt; while the scientific expeditions of José Celestino Mutis (1760), also of Humboldt and Bonpland (1799-1804), revived an interest in the physical sciences, and exercised a salutary influence on South American culture. Independence of thought was stimulated and a race of native writers arose whose continuity has never been broken.

The most noted poet of the revolutionary period was José Joaquin Olmedo of Ecuador (1781-1847), whose chasteness of style and magnificence of rhetoric earned for him the title of "the American Pindar." The impress of romanticism is apparent in the verse of the Guatemalan José de Batres and of the Cuban J. M. Heredia, whose *Ode to Niagara* is justly celebrated.

The foremost name in the history of Spanish-American literature is unquestionably that of the illustrious Andrés Bello (1781-1865), one of the greatest masters of Castilian verse. Much admired are his *Agricultura en la Zona Torrida* and *Oración por Todos,* the latter of which was inspired by Hugo's *Prière pour Tous.* Another revolutionary hero and writer was Carlos Maria de Bustamante (1774-1848), whose greatest literary achievement was the history of the Mexican revolution. Meanwhile in Brazil Domingo Borges de Barros, Viscount of Pedra Branca (1783-1855), established himself as the favorite poet with his pleasure-breathing *Poesias offerecidas ás Senoras Brazileiras.*

In Latin-America politics and letters have gone hand in hand, and it is the rule rather than the exception for public men to be also writers. No branch of literature has been more assiduously cultivated than criticism. Among the leading critics may be mentioned Calixto Oyuela, Torres Caicedo, Miguel Luis Amunátegui, Rafael M. Merchán, Martin Garcia Mérou, and Garcia Velloso.

The novel was not seriously attempted till the latter half of the nineteenth century. The Colombian poet, Jorge Isaaks, is well-known by his *Maria,* and his compatriot, Julio Arboleda, has written a bright romance, *Casimiro el Montañés.* Mexico has produced four novelists of distinct merit: José T. del Cuellar, I. M. Altamirano, Orozco y Berra, author of *Escenas de Treinta Años,* and Dr. J. J. Fernández Lizardi, better known by his nom de plume "El Pensador Mexicano." The Argentine historian, Vicente Fidel Lopez, has written a stirring historical novel entitled *La Novia del Hereje;* his compatriot José Mármol is the author of a really fine romance *Amalia.* Among the more noted Chilean novelists are Vicente Grez, Ramón Pacheco, Alberto del Solar, and the poetess Rosario Orrego de Uribe. Brazil has produced three eminent writers of fiction, Martiniao Alencar, Joaquin Manoel de Macedo, and Bernardo Guimaraes.

The output of poetry has always been enormous, due chiefly to the ease with which the Spanish and Portuguese languages lend themselves to versification. The names of the poets are therefore legion. In Mexico four names will serve to represent the different styles of poetry cultivated: Fernando Calderón, Manuel Carpio, J. J. Pesado, and Manuel Acuña. One of the finest examples of South American verse is *Gonzalo de Oyón* by the Colombian Julio Arboleda (1817-1862). Among modern poets and dramatists may be mentioned Silveria Espinosa de Rendón and A. J. Restrepo, of Colombia; Estebán Echeverria (1809-1851), M. Coronado Adán Quiroga, Rafael Obligado, of Argentina; Arnaldo Márquez, M. N. Corpancho, Cleménte Althaus, and Numa Pompilio Llona, of Peru; C. W. Martinez, and G. B. Gana, of Chile; F. Javier de Acha, of Uruguay; J. Batrés y Montufar, M. Cordoba and Garcia Goyena, of Guatemala; Antonio G. Dias and D. J. G. Magalhaes, of Brazil.

OUTLINES OF THE WORLD'S LITERATURE.

A CONTEMPORANEOUS AND CONSECUTIVE ARRANGEMENT OF BOOKS AND AUTHORS FOR REFERENCE AND STUDY.

Alphabet.—The earliest form of written description, or thought transference, was by means of pictures. This has been used by nearly all primitive people from the early Egyptians to the North American Indians. The latter, however, never developed a written language. The picture language, or hieroglyphic form, succeeded the ideogram, or picture, and gave rise to the alphabetic or sign form. The hieroglyphic form was used by the Egyptians (until 700 B.C.), Chinese, Babylonians, and Mexicans. In 700 B.C. the hieroglyphic form in Egypt was superseded to some extent by the demotic or popular form of writing. Hieroglyphics are so called because the form was largely confined to the priestly class. The Babylonian took the form of wedge-shaped or cuneiform signs.

Cuneiform or wedge-shaped writing is one of the earliest forms of the alphabet. It originated in Mesopotamia and spread even to Armenia and Egypt. The earliest texts are at least 6,000 years old. The characters were impressed on soft clay with a tool, but a chisel was used for the rock-cut inscriptions. The most remarkable inscription is cut on the almost perpendicular side of Mount Behistun over 300 feet from the ground. It records the reign of Darius I. (521 B.C.) and is in three languages: the Old Persian, Babylonian, and the New Susian.

The Assyro-Babylonian alphabet is the most important and complicated of all. In 1887, at Tel-el-Amarna on the Nile, about 180 miles south of Memphis, were discovered 320 bricks with inscriptions, some so minute that there were six lines to the inch and had, evidently, been cut with the aid of a magnifying glass. The tablets vary in size from nine inches by six inches to one inch square.

Other cuneiform alphabets are in the New Susian, the Armenian, and the Old Persian languages.

The oldest inscription in the Phœnician language is on the Moabite Stone, detailing the wars of Mesha and Ahab about 853 B.C., found at Dibon in Moab in 1868. This and the inscription at the pool of Siloam, telling how the tunnel was cut through, are in the North-Semitic languages.

The Phœnicians, who were the early world-traders, first developed the alphabet and gave it to the world about 1000 B.C. From the Greeks all Europe derived their alphabets, either directly as the Russian, or through the Latin.

A peculiar form of writing known as Runes, or Runic writing, was used by the early Germanic tribes and communicated by them to Denmark, Norway, Sweden, Ireland, Germany, Great Britain, France, Spain, and Roumania. Its origin is obscure, but is believed to date from about the second century A.D., though some place it as far back as 600 B.C. It is an adaptation of the Greek alphabet and was much used in carving inscriptions on stone, metal, and wood.

Materials.—The earliest literature was engraved on stone or on baked brick or on metal. In the temple of Nippur tablets were discovered which are believed to have been written 6000 B.C. They are in the Chaldean language, and measure nine inches by six and one-half inches. They are hymns and invocations used in worship in the temple.

The earliest Egyptian literature other than the inscriptions on certain tombs is the "Book of the Dead," which was placed in tombs and in mummy-cases. This is a collection of prayers, hymns, psalms, and magical incantations. These date back to about 2500 B.C.

The earliest Chinese is about 1150 B.C. The book is called the Y-King, the Book of Metamorphoses or of Developments.

The Ten Commandments were written on tablets of stone.

The Laws of Solon (about 594 B.C.) were inscribed on wooden planks.

The skin of goats dressed on one side only came into early use and was the first step toward parchment.

Papyrus was used as far back as 3600 B.C. It was made into rolls from the pressed pith of a species of reeds. The plant is from 3 to 10 feet high. The sheets of papyrus seldom exceeded 15 inches wide, though from 8 to 12 inches is very commonly met with. One roll measured 144 feet in length. It was soft, easily mutilated, and the wonder is that any have survived.

The earliest extant Greek papyrus belongs to the fourth century B.C.

Parchment was known as early as 500 B.C. In Rome the manufacture of parchment rose to great importance in the first century B C. This was the medium for writing until the invention of paper by the Chinese at an early unknown date. The first paper mill in Europe was erected in Fabriano, Italy, in 1150.

Parchment that has been used a second time by erasing the original writing is called a palimpsest.

B.C.	EGYPT, BABYLONIA, INDIA, CHINA
4000	"Book of the Dead." Some portions profess to date back so far, though the greater part was written 10 centuries later. "Proverbs" as contained in the Prisse Manuscript, attributed to a writer of the III. Dynasty about 4000 B.C. **King Athothis,** also a physician, wrote anatomical works.
3700	**Seneferu,** first of the pyramid kings, the earliest Egyptian monarch to leave behind an inscription, which is at Wady Magharah.
3300	A papyrus on "Ethics," written during the reign of Tat-ka-ra by **Ptah-hotep,** probably the oldest manuscript in the world.
3000	Biographical inscription of Una, found on a slab in the cemetery of Abydos, about 3000 B.C. Hymn to Usertesen III., about 3000 B.C.
2800	"Story of the Shipwrecked Sailor," author unknown, written about 2800 B.C. Manuscript in St. Petersburg.
2500	"Story of Sanehat," author unknown, written about 2500 B.C. Manuscript in Berlin. "Teaching of Amenemat," author unknown, written about 2500 B.C.
2200	Code of **Hammurabbi,** king of Babylonia, engraved on stone about 2200 B.C., contains 280 edicts in four columns.
2000	"Songs to the Harp," a collection dating back to 2000 B.C. Egyptian.
1700	Hymns to Amen Ra, written about 1700 B.C. Egyptian.
1700	Rhind papyrus in the British Museum, a mathematical work. "Directions for Obtaining Knowledge from all Dark Things," copied before 1700 B.C. by Ahmes, an Egyptian scribe, from a treatise written in 2500 B.C.
1650	**Pentaour,** "epic poet," celebrates the deeds of Rameses II. Public library founded at Thebes and copies of manuscripts made.
1600	Chronology of Kings of Egypt, made by direction of **Thothmes III.**
1500	Papyrus Ebers, a hieratic or sacred treatise on medicine, written about 1500 B.C., discovered by Ebers in 1872. One of the best preserved Egyptian papyri in existence. Vedas of India, more than 100 books, extending over centuries of time, but begun about 1500 B.C., shortly after the Aryan migration into India. The four divisions are the Rig-Veda, Yajur-Veda, Sama-Veda, Atharva-Veda consisting of Hymns, Psalms, Prayers, Melodies, Blessings, and Curses.
1500	"Maxims of Any," written about 1500 B.C. Egyptian.
1450	"Story of the Doomed Prince," written about 1450 B.C. Manuscript in the British Museum. Egyptian. "Hymn to the Aten," **King Akhenaten,** written about 1450 B.C. Egyptian.
1400	The Tel-el Amarna letters; 320 bricks or tablets found south of Memphis in Egypt in 1887. Written about 1400 B.C. **Abdi-chiba** (1403-1385 B.C.), Governor of Jerusalem, wrote at least six of them. They are state documents.
1300	"Story of the Two Brothers," written about 1300 B.C. "Story of Setna," written about 1300 B.C. Egyptian.
1200	**Wen Wang,** the founder of the Chow dynasty in China, wrote the "Book of Changes."
1100	The Abbott papyrus containing a full account of the tomb robberies in Egypt in the reign of Rameses IX.; written about 1100 B.C.

B.C.	GREECE	INDIA, EGYPT, PERSIA, CHINA
1000	"Iliad" and "Odyssey" written by **Homer**, the first name in the literature of Europe. Herodotus places him at 850 B.C. Moderns locate him between the eleventh and ninth centuries B.C. He wrote also 34 Homeric hymns which have come down to us.	"Laws of Manu," a code attributed to a more or less mythical personage named Manu, a Hindu.
800		Inscription in honor of King Pianky, one of the longest in existence. Found in the temple of Gebel Barkal, written about 800 B.C. Egyptian. "Brahmanas," the second of three great divisions of Vedic literature, are commentaries on the Veda with much legend and philosophy and are attached to the Vedas. They are supposed to date not later than 800 B.C. Persian.
700	"Works and Days," the earliest known didactic poem, "Theogony," and "The Shield of Heracles," written by **Hesiod** of Ascra about 700 B.C. Poetry set regularly to music first by Terpander about 675 B.C. Fragments by Callinus of Ephesus, about 675 B.C. Fragments of satirical verse by **Archilochus** of Paros, about 650 B.C. One of the foremost Grecian lyric poets, whose fame ranked with that of Homer. "Ninno," a collection of elegies, models of form and style, by Mimnermus, about 625 B.C. Fragments of erotic and bucolic verse by **Alcman**, about 670 B.C. Fragments of political elegies and marching songs by Tyrtæus, about 650 B.C.	Hindus could write in the seventh century B.C., but used the writing in rock-cut inscriptions. It was criminal to write any portion of the Sacred Vedic writings until the third century B.C. The literature lived in the memories of especially trained priests. Scholars from Greece welcomed to Egypt, 650.
600	"Destruction of Troy" and fragments of lyric verse by Stesichorus, about 640-555 B.C. Laws and fragments of Ionic verse by Solon of Athens, about 639-559 B.C. Fragments of political songs, hymns, drinking and love songs by **Alcæus**, about 600 B.C. Fragments of philosophical works, "On Nature," "Satires," and others by **Xenophanes** of Colophon, born about 570 B.C. Poems and fragments of lyric poems by **Anacreon**, 561-476 B.C., one of the most esteemed of the Greeks. Poems are paraphrased in English by Thomas Moore. Fragments of eighteen didactic poems by Phocylides of Miletus, about 560 B.C. Fragments of pathetic dirges, epigrams, hymns, and poems; "Lament of Danæ," by Simonides of Ceos, 556-468 B.C. The first tragedy, written in 554 B.C. by Thespis, "the inventor of the tragedy." "Capture of Miletus," a tragedy written by Phrynicus, about 540-476 B.C. Fragments of erotic poems written by Sibycus of Rhegium about 540 B.C. Fragments of iambic poems and parody by **Hipponax**, "the inventor of parody," about 550 B.C. Songs and elegies by Theognis about 540 B.C., consisting of 1389 verses in two books.	The Avesta, or Zend-Avesta, the sacred writings of the Persians, a prayer book rather than a bible, is the remnant of the teachings and writings of **Zoroaster** (660-583 B.C.), whose followers were the Magi, to which sect the "three wise men of the East" belonged. Pliny tells of 2,000,000 verses composed by Zoroaster; Tabari, the Arab historian, describes the writings of Zoroaster committed to 12,000 cowhides. Two complete copies were made, one deposited in the palace at Persepolis and burned when Alexander the Great destroyed the city, the other falling into the hands of the Greeks and translated by them. Fragments were collected and pieced out 500 years later. Cuneiform inscription on a cylinder, recently found, giving the lineage of Cyrus the Great (about 600-529 B.C.). Persian. **Confucius** in the sixth century edited the famous sacred canon, the Ching King, or the "Five Classics" and the "Four Books." Chinese. "Institutes of Gautama," a Hindu teacher and law giver. The "Upanishads," a commentary on the Vedas, begun not later than 600 B.C., are religious and philosophical in character. Over 275 Upanishads are known. They are a part of the Vedic writings of India. The "Sutras," or manuals of rules, a sort of resume of scientific knowledge. They are the last of the Vedic writings—some of which date from the sixth century B.C. Behistun inscription by Darius I (568-489 B.C.), begun by him 514 B.C. It is cut on the almost perpendicular face of a limestone hill (1,700 feet high) at a distance of 300 feet from the ground. It gives the genealogy and narrates the triumphs of Darius I. It is trilingual, written in Old Persian, Babylonian, and the New Susian. There are five tablets of 410 lines.

B.C.	GREECE	INDIA, EGYPT, PERSIA, CHINA
600	Seven tragedies, the "Suppliants," the "Persians," the "Seven against Thebes," "Prometheus Bound," and the trilogy, "Agamemnon," "Choephori," and "Eumenides" by **Æschylus**, 525-456 B.C.	
500	Four books of exquisite hymns in honor of victors at national games and many fragments by **Pindar**, about 522-443 B.C.	"Book of Mencius" written by **Mencius**, a mirror of the life and teachings of Confucius. Chinese.
	"On Nature," a philosophical work by **Anaxagoras**, 500-428 B.C.	
	Seven out of 120 plays with fragments of eighty or ninety others by **Sophocles**, about 495-406 B.C., include "Ajax," "Antigone," "Electra," "Œdipus Tyrannus," "Trachiniæ," "Œdipus at Colonus."	
	"History" and "Travels" of **Herodotus**, about 484-424 B.C. "The father of history."	
	Eighteen complete plays and 1100 fragments of plays by **Euripides**, about 480-406 B.C., including "Alcestis," "Andromache," "Bacchæ," "Hecuba," "Helena," "Electra," "Hippolytus," "Iphigenia Aulidensis," "Iphigenia Taurica," "Ion," "Cyclops," "Medea," "Orestes," "Troades," "Phenissæ."	
	Fifteen of sixty orations by **Antiphon**, earliest of the Ten Attic Orators, 480-411 B.C.	
	Socrates (469-399 B.C.) left no writings.	
	"History of the Peloponnesian War," covering twenty-one years of the conflict, by **Thucydides**, about 460-399 B.C., the greatest historian of antiquity.	
	Forty-four titles of plays, comedies by **Aristophanes** (about 450-385 B.C.), including eleven which have come down to us: "The Acharnians," "The Knights," "The Clouds," "The Wasps," "Peace," "The Birds," and "The Frogs."	
	"Anabasis," the march of Cyrus; "Memorabilia of Socrates," "The Hellenica," a continuation of Thucydides' history of the Peloponnesian war; "Cyropædia," the education of Cyrus, by Xenophon, about 430-355 B.C.	
	Three speeches: "On His Return," "On the Mysteries," "On the Peace," by **Andocides** (about 440 B.C.), the least of the Ten Attic Orators.	
	"The Republic," "The Laws," "The Dialogues," "Phædrus," "Gorgias," "Symposium," "Crito," by **Plato**, about 427-347 B.C., set forth the teachings of Socrates.	
	Fragments of comedies by Cratinus, died about 421 B.C., including "Archilochoi" and "Wineflask."	
	Fragments of comedies by Eupolis, about 446-411 B.C. Seven of his plays won the first prize.	
400	Twenty-one orations and ten letters with the "Panegyricus" by **Isocrates** (436-338 B.C.), one of the Ten Attic Orators.	"Sanskrit Grammar" in eight books of 3,996 stanzas by **Panini**, the greatest of all grammarians of India, written in the fourth century B.C.
	Speech "Against Leocrates," one of fifteen delivered by Lycurgus (about 395-323 B.C.), one of the Ten Attic Orators.	Cuneiform inscription of 60 lines, and two texts of 24 lines each of Darius at Naks-i-Rustam, six miles from Persepolis, and others relating to Xerxes and the three Artaxerxeses, 350 B.C. Persian.
	The "Philippics," "On the Crown," three "Olynthiacs," and other speeches by **Demosthenes** (about 385-322 B.C.), the greatest orator of the ancient world.	Ptolemy I. Soter founded the famous library and museum at Alexandria, 320.
	Three speeches, "Against Timarchus," "On the False Embassy," and "Against Ctesiphon" by **Æschines** (389-314 B.C.), second only to his great rival Demosthenes.	Ptolemy I. founded an Academy at Alexandria, 315. Egyptian.

B. C.	GREECE.	INDIA, EGYPT, PERSIA, CHINA.
400	Works on logic, metaphysics, natural science, ethics, politics, rhetoric, and poetics, published now in over 30 volumes, by **Aristotle** (384-322 B.C.), the founder of the Peripatetic school of philosophy.	
	The "History of Plants," "Theoretical Botany," fragments of "On Mineralogy," "On Fire," "On the Senses," "On Metaphysics," a book of sketches called "characters," by **Theophrastus** (about 372-287 B.C.), the successor of Aristotle.	
	Two complete comedies and numerous fragments, by **Philemon** (about 361-263 B.C.), a popular Greek comic poet.	
	Over a thousand fragments of comic plays by **Menander** (342-291 B.C.), the most famous of the poets of the Attic New Comedy, and rival of Philemon.	
	Philosophic writings, by **Epicurus** (342?-270 B.C.), who left in all about 300 volumes. We have three letters and a large number of fragments contained in badly mutilated manuscripts.	
	Six hymns, 64 fragments, and some translations of the works of **Callimachus** (about 310-240 B.C.), an Alexandrine poet and grammarian.	
	Thirty-one poems and numerous epigrams by **Theocritus** (about 310 to about 245 B.C.), the first and greatest of the Greek bucolic poets.	
	Seventeen short poems and the "Lament for Adonis" (the model for Shelley's Adonais), by **Bion** (310-245 B.C.), a Greek bucolic poet.	
	"Elements," "Data," "Phenomena," "Optics," "Reflection," "Division of the Scale," by **Euclid** (who flourished at Alexandria and was most active about 300 B.C.), the most famous of the Greek writers on geometry.	
300	Fragments of works of geography, geometry, and astronomy, by **Eratosthenes** (about 275-195 B.C.), who flourished in Alexandria under Ptolemy Euergetes.	Emperor Che-wang-te of China (213 B.C.) decreed the destruction of all books excepting those on science, agriculture, and divination.
	"Egyptian History," the only work in Greek based on a knowledge of Egyptian sources, by **Manetho**, who wrote about 273 B.C.	"Commentary on Panini's Sanskrit Grammar," by **Katyayana**, third century B.C.
	An astronomical epic, "Diosemeia," by **Aratus** (born about 270 B.C.).	Ptolemy Philadelphus founded a library at Alexandria, 280 B.C.
	"Alexandra," an obscure poem, by **Lycophron** (about 270 B.C.).	Septuagint version of Hebrew scriptures written.
	Dramatic pictures of common life, by **Herondas** (about 250 B.C.).	Demetrius Phalerius (345-283 B.C.), librarian at Alexandria.
	An epic, "Argonautica," one of the best of the period, by **Apollonius Rhodius** (about 295-215 B.C.).	**Manetho** wrote history of Ancient Egyptian kings.
		Euclid, head of Mathematical school at Alexandria.

B. C.	GREECE.	INDIA, EGYPT, PERSIA, CHINA.
200	Forty books of "History," of which we have five complete and considerable portions of 18 others, by **Polybius** (about 205-120 B. C.), the chief Greek historian of his period. Medicinal and didactic epics, by **Nicander** (about 150 B.C.).	"Commentary on Panini's Sanskrit Grammar," by **Patanjali** (probably second century B.C.), founder of the Yoga system of philosophy. "Mahabharata," the great epic of India, an account of the great war of the Bharatas, written by several authors about 200 B.C. Han dynasty (200 B.C.-200 A.D.) gave increased attention to literature and caused the revival of learning in China. **Sz-ma Ch'ien** (b. 145 B.C.). The "Historical Record" is the history of China from the beginning to 150 B.C. It contains 526,500 words, which were all originally scratched on bamboo tablets. It was translated into 219 volumes in 1747.
100	"Geography" in 17 books; "History" in 43 books; and other fragments, by **Strabo** (about 63 B. C.-24 A. D.). The "Library," originally of 40 books, of which we have several, a book of universal history and travels of **Diodorus Siculus**, who died about 20 B. C.	Cæsar burns library at Alexandria with 400,000 MSS. Antony replaces the burned library of Alexandria by one brought from Pergamos in Asia Minor.
A. D.	"History of the Jewish War" in seven books; "Jewish Antiquities" in 20 books; "Autobiography," by **Flavius Josephus** (37-later than 100). "Lives," "Morals," "Table Talk" in nine books, by **Plutarch** (about 46-about 125). About 80 extant orations by **Dion Chrysostomos** (about 50-about 117), rhetorician and philosopher.	
100	"Discourses of Epictetus" in eight books; "Manual of Ethics"; "Conversations of Epictetus" in 12 books; "Anabasis of Alexander the Great" in seven books; "The Indica," a geographical work; and several fragments, by **Arrian** (about 95-175). "History of Rome" in 24 books; 11 of which have come down, by **Appian** (flourished about 150). "History of Rome" in 80 books, by **Dion Cassius Cocceianus** (about 150-235). "Periegesis or Guide-book to Greece" in 10 books, by **Pausanias**, the Periegite (about 160). Of great value in Greek art and topography. Works on medicine and logic (said to have numbered over 500, of which we have 83 known to be genuine), by **Claudius Galenus**, known as **Galen**, born about 130 and lived at Rome after 170. "Syntaxis," an astronomical and mathematical work, by **Claudius Ptolemaeus**, known as **Ptolemy**, in which the Ptolemaic theory of the universe was enunciated. Lived in the first half of the second century. The continuation of his work is the "Almagest" of the Arabians. "Halieutica," a poem on fishing; and other poetical works, by **Oppian** (latter part of second century).	

B.C.	ROME.
200	Twenty out of 130 comic plays by **Titus Maccius Plautus** (about 254-184 B.C.), the greatest comic poet of ancient Rome.
	Fragments of the "Annals," a history by **Quintus Fabius Pictor** (about 254 B.C.), the first writer of Roman history in prose.
	Fragments of tragedies, comedies, satires, and "Annals," by **Quintus Ennius** (239-169 B.C.), "the father of the Roman epos."
	Fragments of several of the 150 orations and "De Agri Cultura," and "De Re Rustica," by **Marcus Porcius Cato,** known as Cato the Censor, Cato Major (Cato the Elder), or Cato Priscus (234-149 B.C.), a Roman statesman and orator.
	Six comedies by **Publius Terentius Afer** (known as Terence) (about 185 to about 159 B.C.).
	800 fragments of satires (the longest with only 13 verses) by **Gaius Lucilius,** the originator of Latin satirical composition (149-103 B.C.).
	750 lines, fragments of 40 tragedies written by **Lucius Attius** or **Accius** (about 170-90 B.C.), perhaps the greatest of the Roman tragic writers.
100	"De Re Rustica Libri III," the most important treatise on ancient agriculture known to us; "De Lingua Latina," a grammatical work originally in 24 books—of which we have 6 by **Varro** (Marcus Terentius), "the most learned of the Romans" (116-27 B.C.)
	Fifty-seven orations, the most famous being the four against Catiline, the fourteen philippics against Antony, the orations on behalf of L. Murena and Marcus Cælius; his treatises including "De Senectute" (concerning Old Age), "De Amicitia" (concerning Friendship), and others by **Cicero** (Marcus Tullius), Rome's greatest orator and an illustrious man of letters and statesman (106-43 B.C.).
	"Commentaries on the Gallic and Civil Wars" by **Cæsar** (Gaius Julius), one of the most remarkable men of all time (100-44 B.C.).
	"De Rerum Natura," a poem in six books, 7,500 lines, by **Lucretius** (Titus Lucretius Carus) (about 99 to about 55 B.C.), a Roman poet of the first rank.
	Twenty-five biographies of warriors and statesmen, mostly Greeks, by **Nepos** (Cornelius), a Roman historian (about 99 to about 24 B.C.).
	116 poems by **Catullus** (Gaius Valerius), the greatest of the Roman lyric poets (about 87 to about 54 B.C.).
	"Catilinia," or "Bellum Catilinarium," descriptive of Catiline's Conspiracy in 63 B.C.; "Jugurtha," describing the Jugurthine War, by **Sallust** (Gaius Sallustius Crispus), a Roman historian (86-34 B.C.).
	The "Æneid," or wanderings of Æneas after the siege of Troy; ten "Eclogues" or "Bucolics," the "Georgics," by **Vergil** (Publius Vergilius Maro), one of the most celebrated of Roman poets (70-19 B.C.).
	"Odes," "Epistles," "Satires," "Liber de Arte Poetica" ("Art of Poetry"), by **Horace** (Quintus Horatius Flaccus), the greatest Latin poet of his time after Vergil (65-8 B.C.).
A.D.	"History of Rome" in 142 books of which 35 have come down to us, by **Livy** (Titus Livius Patavinus), the great Roman historian (59 B.C.-17 A.D.).
	"Epistles" on moral subjects and philosophical treatises; ten tragedies and "Satires," by **Seneca** (Lucius Annæus), or Seneca the Elder (about 4 B.C. to about 65 A.D.).
	"Metamorphoses," a treatise on all the transformations recorded in legend from the Creation to the time of Julius Cæsar; the "Heroides" and several other poems, by **Ovid** (Publius Ovidius Naso) (43 B.C.-18 A.D.).
	"Historia Naturalis," comprising all the natural sciences, divided into 37 books on 20,000 subjects by **Pliny the Elder** (Gaius Plinius Secundus) (23-79).
	"Epigrammata" in 14 books, by **Martial** (Marcus Valerius Martialis), the first of the Roman epigrammatists (about 40 to about 104).
	"Annals" and histories by **Tacitus** (Publius Cornelius Tacitus), an important historian of Rome (about 55-117).
100	Sixteen "Satires" by **Juvenal** (Decius Junius Juvenalis), a satirist of indignation, well translated by Dryden and others (38-120).
	"Epistulæ," or ten books of letters; "Panegyricus," an adulation of the Emperor Trajan, by **Pliny the Younger** (Gaius Plinius Cæcilius Secundus), a nephew of Pliny the Elder (62-110).
	"Lives of the Cæsars," "Lives of Eminent Grammarians," "Lives of Eminent Rhetoricians," by **Suetonius Tranquillus** (75 to about 160), an eminent historian of Rome.
	Two "Apologies for the Christians," "Dialogue with Tryphon the Jew," by **Justin Martyr** (about 100 to about 165), a Christian writer and philosopher.
	"Institutes," and other legal works of **Gaius the Jurist** (about 110 to about 180). From these 535 extracts were taken for the "Institutes" of Justinian. Gaius is the chief source of our knowledge of Roman law.
	"Apologia," "Metamorphoses," or the "Golden Ass," a novel or romance, by **Lucius Apuleius,** a satirist of Rome (born about 125).
	"Proscription of Heretics," "Apology to the Nations," "Against the Jews," "Against Marcion," "Against the Valentinians," "Against Praxeas," and many tracts on morals and church discipline, by **Tertullian** (Quintus Septimius Florens Tertullianus), one of the earliest of the Latin Church Fathers (about 150 to about 230).

A. D.	LATER LATIN AND GREEK WRITERS.
100	"Dialogues of the Gods," "Dialogues of the Dead," "Auction of Philosophers," "Timon," and the "Veracious History," by **Lucian of Samosata** (about 120–about 200), a famous satirist and humorist.
	"Against Heresies," a valuable history of doctrine and fragments of other theological works, by **Saint Irenæus** (about 130-202), one of the leading Church fathers of the West.
	"Exhortation to the Greeks," the "Instructor," "Stromata" or miscellanies, by **Clement of Alexandria** (Titus Flavius Clemens, about 150–about 215), a celebrated Greek father of the Church.
	Rhetorical treatises by **Hermogenes** (second half of the second century), the greatest technologist of his times.
	A Roman history (180-238) by **Herodianus**, a Greek resident in Italy; born about 170; died about 240.
to	"Hexapla," "Tomoi," "De Principiis," "Against Celsus," by **Origen** (about 185-254), called also **Adamantius**, the most famous Christian writer of the third century.
	Lives of the Greek philosophers in 10 books, very valuable, by **Diogenes Laertius**, who lived about 200.
	Eighty-two letters, and treatises on "Unity of the Church," "Dress of Virgins," "Lapsed," "Lord's Prayer," "Vanity of Idols," "Against the Jews," and other very instructive works, by **Saint Cyprian** (Thascius Cæcilius Cyprianus, about 200-258), the great leader, as Bishop of Carthage, of the African Church.
	"Enneads," philosophical works, by **Plotinus** (204-270).
200	Works of criticism and philosophy (and, perhaps, the essay "On Sublimity") by **Longinus** (210-273), tutor at the court of Zenobia.

GERMANY.	FRANCE.
Translation of the Bible into Gothic by **Ulfilas**, Bishop of the Goths (about 311 to about 381). This is preserved in part in the Codex Argenteus, written with silver letters on purple parchment, now in the library of the University of Upsala. Ulfilas invented the Gothic alphabet, taking his letters from the Greek, adding some letters from the Latin and from the Runes.	
600 Fragments of the songs of warrior gods and heroes are among the earliest German literature extant.	
"Hildebrandslied," a fragmentary Old High German poem, descriptive of the duel between Hildebrand and his son Hadubrand, who, unrecognized by each other, fight after years of separation. It is the oldest specimen of German heroic poetry.	
700 The Saga-cycles, describing the deeds of Ermenrich, Theodoric the Goth, Attila the Hun, Gunther of Burgundy, and Siegfried.	
"Heliand," an alliterative poem, based on the Gospels, written evidently at the request of Louis the Pious (778-840), the youngest son of Charlemagne, author unknown.	

A. D.

LATER LATIN AND GREEK WRITERS.

200

"Against the Christians" (15 books), "Life of Plotinus," "Life of Pythagoras," "On Aristotle," by **Porphyry** (about 233-about 305), a teacher of philosophy at Rome.

Autobiography, letters, and numerous philosophical works, orations, and declamations, by **Libanius** (born about 314), the best known sophist of the fourth century.

"Life of Pythagoras," "Exhortation to Philosophy," and many mathematical and philosophical works, by **Iamblichus** (died about 330).

Six volumes of theological works by **Saint Ambrose** (about 340-397), Bishop of Milan, and one of the most celebrated of the ancient fathers of the Church, one of the four doctors of the Western Church.

"Translation of the Bible," the best up to its time, "Illustrious Men," more than one hundred "Letters" and "Epistles," by **Saint Jerome** (Hieronymus, about 340-420), the most learned of the early fathers of the Roman Church.

to

Ten books of "Letters" and the fragments of nine orations by **Symmachus** (Quintus Aurelius, about 345-about 405), a distinguished Roman orator, scholar, and statesman.

"Daily Rounds, or Cathamerinon," a collection of twelve lengthy hymns: "The Soul's Conflict, or Psychomachia," or religious allegories; "The Crowns, or Peri Stephanion," fourteen hymns in praise of martyrs; two books "Against Symmachus"; and more poems, by **Prudentius** (Aurelius Clemens Prudentius, 348-about 405), the greatest Christian poet of the early Latin Church.

"Confessions," an autobiography; "City of God," in 22 books; "Retractions"; 270 "Epistles" and numerous treatises by **Saint Augustine** (354-430), Bishop of Hippo in northern Africa, the greatest of the Latin fathers, and most celebrated of the four doctors of the Western Church.

400

Nine books of "Letters" of great value; twenty-four poems by **Apollinaris Sidonius** (430-487), Roman author, political leader, and Bishop of Clermont.

ENGLAND.

The Anglo-Saxon Period (449-1100).

Anglo-Saxon invasion of Britain drove the bards to the hills. They gave us their songs and the Arthurian legend (449).

500

"De Excidio Britanniæ" (about 556-560) and "Epistola," by **Gildas** (493?-570?), the first national historian of the Britons.

From the songs of the scop, or maker of poetry, and the gleoman, or minstrel, was evolved the great Anglo-Saxon epic, "Beowulf," which dates back to the sixth century.

The first written laws of Saxon England made by **Ethelbert**, king of Kent (about 552-616).

600

"Paraphrase of Creation and Early Biblical Events" and a "Hymn," by **Cædmon** of Northumbria (about 675).

Ecclesiastical works by **Aldhelm** (about 640-709), a famous scholar, abbot of Malmesbury (676), bishop of Sherborne (705).

"Ecclesiastical History of England" in five books, "The Six Ages of the World," written in Latin, by **Bede** or **Bæda**, called the Venerable Bede, the greatest name in the literature of Saxon England (about 673-735).

700

Letters, theological, political, philosophical, mathematical, and poetical works by **Alcuin** (about 735-804), the most distinguished scholar of the eighth century.

Anglo-Saxon poems, comprising "Juliana," "Elene," "Crist," "Fates of the Apostles," "Andreas or the Legend of St. Andrew," and others, by **Cynewulf**, a writer of some of the best Anglo-Saxon verse (about 750-825).

PERSIA, ARABIA, ETC.

"Moallakat" ("the suspended ones"), a collection of seven Arabic poems, the first of which was written by **Amru-el-Kais** (Amrulcais or Amru'l-Kais), by some esteemed the greatest of Arabian poets (570?-630?).

One of the "Moallakat" written by **Tarafah**, one of the six great pre-Islamic poets (about 560).

One of the "Moallakat" written by **Labid ibn Rabia** (about 560 to about 661), a popular poet.

One of the "Moallakat" written by **Antar** or **Antara**, a black slave poet (died about 560).

Other disputed writers of the three remaining poems are: **Zuhair, Amr ibn Kulthum, Al-Harith, Nabighah**, and **Asha**.

Poetical tournaments were held at Okaz near Mecca before Mohammed's time. Fragments of the works of more than 200 poets of the pre-Islamic times were collected in the tenth century. The Arabs thus acquired considerable poetical proficiency.

"The Koran" (about 657).

"Arabic Grammar," the first written, by **Abd al-Rahman ibn Hormuzd** (about 730).

"Arabic Grammar," by **Abu al-Walid al Duali**, the inventor of diacritical points (about 750).

"Code of Laws," still in force in many parts of the Ottoman Empire, by **Abu Hanifah**, one of the Church fathers (702-772).

"Kitab al-Ain," the first Arabic lexicon, by **Al-Khalil**, the founder of Arabic metrics (about 750).

"Al Muwatta," code of laws, based on the decisions of the school of law of Medina founded in the seventh century, compiled by **Malik ibn Anas**, a distinguished jurist (about 785). Code still in force in Tunis, Algeria, Morocco, and the Hejaz.

"Biography of Mohammed," written by **Mohammed ibn Ishak** (768), the earliest historian.

"Grammar," an extensive work, by **Sibawaihi** (796).

A.D	GERMANY.	FRANCE.
800	"Krist," the first German rhymed verse, based on the Gospels, of 15,000 verses, by **Otfried** (about 800 to about 870).	The first Romanic text extant is the oaths interchanged at Strassburg in 842 between the grandsons of Charlemagne, Louis the German, and Charles the Bald, against their brother Lothair.
	"Ludwigslied," a political ballad celebrating the victory of Louis III. over northern tribes, the reconciliation of Atho I. and his brother Henry, written late in the ninth century, author unknown.	
900	Numerous religious writings, visions of judgment, lives of saints, epic gospel narratives, harmonies, and a few political compositions fill up the tenth century.	
1000	German translations of Boethius's "Consolation of Philosophy," Aristotle's "Categories and Hermeneutics," and of the Latin Psalter, by **Notker Labeo**, a monk of St. Gall (about 950-1022).	"Chansons de Gestes," long poems on the heroic deeds of Christian knights, composed and sung by troubadours and trouveres; later by jongleurs and menestrels. These are arranged in cycles. (1) "Cycle de France," songs of French heroes, the central figures being Charlemagne and twelve chief barons. The most ancient, beautiful, and famous is the "Chanson de Roland," composed at the end of the eleventh century, describing the death of Roland and his eleven peers with 20,000 followers at the battle of Roncesvalles and the later vengeance of Charlemagne.

A.D.	ENGLAND.	PERSIA, ARABIA, ETC.
800	"Historia Britonum," under the name of **Nennius,** of whom nothing is known. The book is a compilation from various sources, and consists of eight parts, the first of which appears to have been written about 822. The "Anglo-Saxon Chronicle," a record of events kept in a loose way in monasteries from some uncertain period, but not perfected until Alfred's time. Philosophical works by **John Scotus** or **Erigena** (died 875). Translation into English of Boethius's "Consolation of Philosophy," Orosius s "History of the World," Gregory the Great's "Pastoral Care," Bede's "Ecclesiastical History," a compilation of "Laws," and the consolidation of the "Anglo-Saxon Chronicle," by **Alfred the Great,** king of Wessex (871-901).	"Medicine" and "Astrology," remains of 200 works on science and philosophy, by **Al-Kindi** or **Alchindius** (about 800). "Biography of Mohammed," by **Ibn Hisham** (821). "Biography of Mohammed," by **Mohammed al-Wakidi** (823). In the ninth century the three sons of the librarian **Musa ibn Shakr** calculated accurately the diameter of the earth and the precession of the equinoxes. "Astronomica Encyclopedia," by **Al-Farghani** (ninth century), translated into Latin by Johannes Hispalensis. "History," in 105 monographs, including histories of Mecca and Medina, by **Abu Ubaidah** (824). "History and Genealogy," by **Al-Kalbi** (about 819). "Code of Laws," by **Al-Shafi** (died 820). "Pre-Islamic Songs" by **Abu Tamman** (846). "Code of Laws" by **Ahmad ibn Hanbal** (855). "Collection of traditions of Mohammed," by **Al-Bukhari** (died 870), **Muslin** (died 874). "Universal History" by **Abu Jafar al-Tabari,** a Persian (838-923), first of its kind in Arabic. "Early conquests by the Arabs," by **Ibn Kutaibah** (892) and **Al-Tabari** (died 923).
900	"Homilies," "A Treatise on the Old and New Testaments," "Latin Grammar," and the "Colloquium," by **Aelfric** the Grammarian (about 950-1021).	"Astronomy," by **Thabit ibn Kurrah** (901). "Commentary on the Koran," by **Al-Tabari** (died 923). "Arabian Lexicon" by **Ibn Duraid** (died 934). Fragments of poems and a translation of the fables of Bidpai, by **Rudagi** or **Rudaki** (died 945?), the earliest of the great Persian poets. "Book of Kings," a poetical history of Iran, by **Daqiqi,** who flourished in the tenth century. "Book of Kings," a poetical history of Iran from 3600 B. C. to 641 A. D., by **Firdausi,** one of the foremost poets in all literature (about 935-1020). "Philosophy," studied in Latin in the Middle Ages in the universities of Europe, by **Al-Tarabi** (960). **Al-Battani** (Albatagnius) introduced the use of trigonometry, and observed the obliquity of the ecliptic in the tenth century. "Geography," by **Ibn Hisham** (?), **Khurdhadbah Masudi** (912), **Ahmad ibn Fadlan** (921), **Abu Ishak al-Istakhri** (950), **Ibn Haukal** (977), **Al-Mukaddasi** (985). "Diwan" of 289 poems, by **Al-Mutanabbi** (965), one of the greatest and most widely read. "Arabian Lexicon," by **Ismail al-Sahib** (died 995).
1000	During the tenth and eleventh centuries the Anglo-Saxon or English language was undergoing such radical grammatical changes that it was not a suitable literary medium. The great authors of these two centuries in England are those who wrote in Latin as being intelligible to the learned, for whom they wrote.	Rhymed prose, by **Ahmad al-Hamadhani** (1007). "Commentary on the Koran," by **Al-Hasan al-Nisaburi** (died 1015). "History," by **Ibn Maskawai** (1030). "Philosophy," by **Ibn Sina** (Avicenna 980-1037), a text-book for European universities. "Geographical Dictionary," by **Al-Bakri** (1094).

A. D.	GERMANY.	FRANCE.
1100	"Rolandslied," descriptive of Roland at Roncesvalles and of Charlemagne. "Alexanderlied," on the deeds of Alexander. Both epic poems by unknown authors prior to 1130. "Tagelieder" (Dawn-songs), "Parzival," the basis of Wagner's "Parsifal, Story of the Holy Grail"; by **Wolfram von Eschenbach** (about 1165 to about 1220). "Kreuzlied," in celebration of the Crusade of Frederick II., by **Walther von der Vogelweide** (about 1165 to about 1230), a Middle High German minnesinger. Peasant lyrics, forerunners of the Volkslied, by **Neidhart von Reuenthal** (about 1180 to about 1240).	(2) "Cycle de Brétagne." The chief poet is **Chretien de Troyes.** The motive is love. It deals with the search for the Holy Grail, King Arthur and the Round Table, the romance of "Tristan and Iseut." In this cycle are "Lays of Bretagne," by **Marie de France,** the earliest French poet. Poem of 2,300 lines on St. Patrick's Purgatory, animal fables called "Ysopet"; the "Lais" of 14 narrative poems each from 100 to 1,200 lines; loves of "Tristan and Iseut"; "Eliduc"; "Le rossignol" (the nightingale); "Les deux amants"; "Yonec," a fairy tale of the bluebird and Lanval, by **Marie de France.** (3) "Cycle Antique" deals with the ancient heroes of Greece and Rome; the "Roman d'Alexandre" with 12,000 verses of 12 syllables, by **Alexandre de Bernay** (twelfth century), the "Roman de Thebes," and the "Roman de Troie," by **Benoist de Sainte-Maure,** "Roman de Rou, et des ducs de Normandie," by **Wace** (1100-1175). "Conquéte de Constantinople" and particulars of the Fourth Crusade, by **Geoffroi de Villehardouin** (1155-1213).
1200	"Tristan and Isolde," the subject of Wagner's opera, a poem in 19,552 verses, by **Gottfried von Strasburg** (about 1200). "Nibelungenlied" (Song of the Nibelungs). A great High German epic, by an unknown poet at the beginning of the thirteenth century. Ten complete manuscripts are known. The Iliad of Germany. "Gudrun," chief of the Low German epic sagas, preserved in a High German poem, by an unknown author, at the beginning of the thirteenth century. The Odyssey of Germany. "Eneit," by **Heinrich von Veldeke,** father of Middle High German courtly poetry. "Sermons," by **Berthold von Regensburg,** a German Franciscan preacher (about 1220-1272). "Poems," mainly mocking and sensuous, excepting one, "Penitential Ode" by **Tannhauser,** a German knight and minnesinger (died about 1270). Sermons and philosophical works by **Johannes Eckhart** or **Eckhardt,** a mystic and reformer (about 1260-1327). "Autobiography," "Book of Everlasting Wisdom," and poems, by **Heinrich Suso** or **Seuse,** a German mystic (about 1295-1366).	Lyric poems, by **Thibaut,** Count of Champagne and King of Navarre (1201-1253). "Le roman du Renart" of 32,000 verses of satires. "Le roman de la rose," by **Guillaume de Lorris** (about 1215 to about 1240), of 4,000 verses, left unfinished. An addition of 18,000 verses in an entirely different vein was made by **Jean de Meun** in 1277. There are over 300 MSS. of this extant. "Histoire de St. Louis" (Louis IX.), "Credo," by **Jean de Joinville** (1225-1317). Lyric poems, by **Colin Musset,** a wandering minstrel (about 1250). "Le miracle de Théophile," a miracle play; numerous satirical poems, by **Ruteboeuf;** real name unknown. Mass sung at the coronation of Charles V. (1364); collection of poems; by **Guillaume de Machault** or **Machaut** (about 1284-1370), a poet and musician.

	ENGLAND.	FRANCE.
1300	**John Wiclif** (about 1320-1384). Two treatises, "Concerning Human Lordship," and "Concerning the Lordship of the Church," and a translation of the Bible into English. **John Gower** (1325-1408). Poems. **William Langland** (about 1332-1400?). The greatest poet of the century excepting Chaucer. "Piers Plowman," an allegorical poem descriptive of human life. **Geoffrey Chaucer** (about 1340-1400). The first great English poet. "Legende of Good Women," "Troylus and Crysede," "The House of Fame," "Palamon and Arcite," and "Canterbury Tales." **James I.** of Scotland (1394-1437). Poems.	"Chroniques," or Chronicles in four books of history; poems: "The Little Thane of Love," "Meliador," a lengthy poem on chivalry and legend, by **Jean Froissart** (about 1338-1410). "De l'art de dicter," by **Eustache Deschamps** (about 1350). "Oeuvres poétiques," "Life of Charles V.," by **Christine de Pisan** (about 1363-1431). "Miroir de mariage," of 13,000 lines; ballad to Chaucer. "History of Charles VII.," "Bréviaire des Seigneurs," "Lay de la belle dame sans merci," and other lovers' poems, by **Alain Chartier** (about 1390-1440). Poems of Love and Spring, written during twenty-five years' imprisonment in England, by **Charles of Orleans,** father of Louis XII. of France (1391-1465). The last of the French mediæval poets.
1400	**William Caxton** (1412-1492). "The Game and Playe of the Chesse." **William Dunbar** (1460-1530?). Poems. **William Tyndale** (1484-1536). Translation of the Bible. **Miles Coverdale** (1488-1568). Translation of the Bible. **Sir David Lindsay** (1490-1557). Poems and comedy. **Hugh Latimer** (1491-1555). Sermons.	"Poems," "Le petit testament," "Le grand testament," a "Codicille" of ballads, "Le jargon," a "Dialogue," and a "Monologue," "Le franc archier de Bagnolit," by **Francois Villon** (1431-1484). "L'avocat Panthelin," first masterpiece of French comic theater, author unknown (about 1475). "Mémoires," a complete political review of the times, by **Philippe de Comines** (1445-1509). "Prognostication Pantagrueline," "Gargantua," "Pantagruel," by **Francois Rabelais** (1495-1553). "Letters," "Poems," "Marguerites de la marguerite," "Dernières poésies," and parts of the "Heptaméron" by **Marguerite of Navarre** (1492-1549). Collection of fables, epistles, epigrams, and songs, by **Clement Marot** (1495-1544).

A. D.	ENGLAND.	PERSIA, ARABIA, ETC.
1100	"Ormulum," a paraphrase of scripture, by **Orm** (1187-1237).	Astronomical tables, reforming the calendar; a treatise on algebra—extracting the square and cube roots, on cubic equations, and on expanding a binomial; three books on natural science and three on metaphysics; the Rubaiyat (rhymed quatrains, translated by Edward Fitzgerald), by **Omar Khayyam** (about 1045-1123). "Surgery," by **Abu-l-Kasim** (1107). "Philosophy," a text-book in the Middle Ages in European universities, by **Al-Ghazali** (1058-1111), and similar works by **Ibn Badjah** or Avenpace (1138), **Ibn Tufail** (died 1185), and **Ibn Roshd** or Averroes (1153-1198). "Mantig ut-Tair," or parliament of birds, an allegorical poem, the most famous of the works of **Farid-ud-Din Attar** (about 1119-1229), who in his 110 years left over 120,000 couplets of poetry. One of the most famous mystics and Sufis.
1200	The "Brut," a metrical chronicle of Britain, describing the founding of Britain by Brutus, great grandson of Æneas, the history to the death of Cadwalader, last of the Celtic kings; the deeds of King Arthur; Cymbeline, King Lear; written 1200 and 1250. The older MS. contains 32,243 lines, written in Anglo-Saxon and containing not more than one hundred French words. The author was **Layamon**, who flourished about 1200. "Opus Majus," a work on philosophy, by **Roger Bacon** (1214-1294). "Ancren Riwle" (the Rule of Nuns), by an unknown author, appeared in 1220. "Historia Major," by **Matthew Paris** (died 1259). "Havelok the Dane," "The Gest of King Horn," "Bevis of Hampton," and "Guy of Warwick," by an unknown writer, appeared in 1280. "Willie Grice," "The Owl and the Nightingale," in poetry, by an unknown writer, appeared in 1280. "Summer is y-comen in," author unknown. "The Land of Cockayne," by **Michael of Kildare.** "Martyrdom of Thomas à Becket," by **Robert of Gloucester** (1255-1307).	**Jabir ibn Aflah** in 1196 constructed the first observatory at Seville. "Divan," and five great poems: "The Book of Alexander" (Iskander-Namah), "The Storehouse of Mysteries," "Khosrau and Shiran," "Majnun and Laila," and "The Seven Fair Faces," by **Nizami** (1141-1203), one of the seven epic poets of Persia. "Euclid," by **Nasir ed-Din al-Tusi** (about 1150). History of religious and philosophical sects, still the chief authority on the subject, by **Mohammed al-Shahrastani** (1153). "Medicine" by **Abd al-Malik ibn Zuhr** (1162). Histories of Damascus, by **Ali ibn Asakir** (1175). "Bustan" (Flower Garden) or "Sadinama" (Book of Sadi), a didactic poem in 10 cantos, "Gulistan" (Rose-Garden), still highly esteemed in Persia; lyric poems, eulogies, elegies, ghazals, and a number of prose works by **Sadi** (about 1184 to about 1291), one of the greatest of Persian poets. "Mathnavi," a collection in 40,000 couplets in 6 books of tales and moral precepts; a "Divan" of lyrics by **Jalal-ud-Din Rumi** (1207-1273), the greatest of all the mystics of the East and the most important of the Persian Sufis. Ghazals or love poems, oriental odes making up the "Divan" or collection of poems, by **Hafiz** (?-about 1389), one of the world's greatest names in lyrical poesy.

	GERMANY.	ITALY, SPAIN, AND PORTUGAL.	SCANDINAVIA AND RUSSIA.
1300	"Book of Spiritual Poverty," and "Sermons," by **Johann Tauler**, a German mystic (1300-1361). "Limburg Chronicle" (1336-1398), "Alsace Chronicle" (about 1430), all of great historical value, authors unknown. University of Prague founded, 1348. University of Vienna founded, 1365. University of Heidelberg founded, 1386. University of Cologne founded, 1388.	"Divina Commedia" by **Dante Alighieri** (1265-1321). Italian. Prose writings by **Don Juan Manuel** of Spain (1282-1349). Poems by **Juan Ruiz de Hita** of Spain (1300-1350). "Canzoniere," and many works in Latin, by **Petrarch** (1304-1374), Italian. "Decameron" by **Giovanni Boccaccio** of Italy (1313-1375). Spanish poems by **Pedro Lopez de Ayala** (1332-1407). "Amadis de Gaula," written by a Portuguese, **Vasco de Lobeira** (about 1360-1403). Chronicles of Alfonso XI. in Spanish verse by **Rodrigo Yanez** (fourteenth century). Spanish sonnets by **Inigo Lopez de Mendoza**, Marquis of Santillana (1398-1458).	The Eddas were collected in the eleventh and twelfth centuries. **Henrik Harpestrings** (died 1244). Danish medical writer. Danish ballads by unknown writers between 1300-1500. **St. Bridget** (1302-1373), Revelations. "Act of Union at Calmar," by an unknown writer, published in 1397.
1400	University of Leipzig founded, 1409. University of Rostock founded, 1419. "Sermons," by **Geiler von Kaysersberg**, famous preacher (1445-1510). University of Greifswald founded, 1456. The "Ship of Fools" (a mirror of the times), a remarkable book, by **Brant** or **Brandt**, (about 1458-1521). The first printed book that dealt with contemporary events and living persons, instead of old German battles and French knights. Work on "Fortification," "Measuring with a Compass," and "Four Books of Human Proportion," by **Durer** (1471-1528). Sermons, religious poems, and "Eulenspiegel," a sort of chap book, "Translation of the Æneid," by **Murner** (1475-1537). University of Tübingen founded, 1477.	Spanish poems by **Juan de Mena** (1411-1456). Italian poems by **Luigi Pulci** (1431-1487). Spanish poems by **Juan de la Enzina** (1468-1531). Historical and political works (Italian) by **Niccolo Machiavelli** (1469-1527). "Orlando Furioso" (Italian verse) by **Ludovico Ariosto** (1474-1533).	**Johannes Budde** (d. 1484) translated the Bible into Swedish. University of Upsala founded (1477). **Christian Pedersen** (1480-1554) translated the Bible into Danish and wrote "Karl Magnus" and "Ogier the Dane." First Swedish Book printed, 1495. **Niels**, a monk, is credited with a history of Denmark and rhymed Danish verse, which was the first Danish book printed (1495). **Olaus Petri** (1497-1552) wrote a Swedish chronicle of history.

A. D.	ENGLAND.	FRANCE.
1400		"Commentaires," and "Mémoires," by **Blaise de Montluc** (1502-1577). "Poems, Epigrams, and Anagrams," written in Latin, by **Jean Daurat or Dorat** (1508-1588). "Institutes of the Christian Religion," with the famous preface to Francis I., "De Necessitate Reformandae Ecclesiae," "Commentaires sur la concordance ou harmonie des évangélistes," "In Novum Testamentum Commentarii," and others, by **John Calvin** (1509-1564). Translation of "Plutarch's Lives," and "Plutarch's Morals," and of several Greek romances, by **Jacques Amyot** (1513-1593).
1500	**Sir Thomas Wyatt** (1503-1542). Poet.	Theological writings, including a translation of the New Testament into Latin; editions of the Greek Testament; biography of John Calvin, first ever written; and "Codex Bezae," an uncial MS. of the New Testament, presented to the University of Cambridge, by **Theodore Beza,** properly **de Beze** (1519-1605). "Odes," "Amours," "Hymnes," "Franciade," by **Pierre de Ronsard** (1524-1585). "La défense et l'illustration de la langue française," "Poems," "Sonnets," "Les regrets," "Les jeux rustiques," "Lettres," by **Joachim du Bellay** (1524-1560). "Petites inventions," "Bergeries," "Amours et nouveaux échanges de pierres précieuses," "La reconnue" (Recognition), a rhymed comedy, by **Remy Belleau** (1528-1577). "Thesaurus Linguae Graecae," by **Henricus Stephanus** or **Estienne** (1528-1598). "Traité de la servitude volontaire," "Contr'un," by **Etienne de la Boetie** (1530-1563). "Discours politiques et militaires," and "Correspondance," by **Francois de la Noue** (1531-1591). Collége Royal de France (now Collége de France), established by Francis I., 1531. "Cléopâtre captive," "Didon se sacrifiant" (tragedies), "Eugène" (comedy), by **Etienne Jodelle** (1532-1573). "Poésies choisies," "Mimes, enseignments, et proverbes," by **Jean Antoine de Baif** (1532-1589). "Apologie de Raimond Sebond," his most famous essay in skepticism, "Essays," by **Michel Eyquem de Montaigne** (1533-1592). "Vies des hommes illustres et des grands capitaines français," "Vies des dames illustres," "Vies des dames galantes," "Anecdotes touchant les duels," "Rodomontades et jurements des Espagnols," by **Pierre de Bourdeilles, Abbe de Brantome** (about 1540-1614). "Traité des trois vérités," "Traité de la sagesse," and "Sermons," by **Pierre Charron** (1541-1603). "Poems," "Contr'une nuit trop claire," "Rosette pour un peu d'absence," sonnets and elegies, by **Philippe Desportes** (1546-1606). "Les tragiques," a poem in seven cantos, "Histoire universelle," "Confession catholique du Sieur de Sancy," "Aventures du Baron de Foeneste," by **Theodore Agrippa d'Aubigne** (1550-1630). Nine prose comedies by **Pierre de Larivey** (about 1550-1612). "Works" consisting of 125 poems, "Commentaire sur Desportes," translation of letters, "Ode of Consolation," by **Francois de Malherbe** (1555-1628). "Astrée," a most popular novel, by **Honore d'Urfe** (1568-1625). Sixteen satires, including "Le goût décide de tout," "L'honneur ennemi de la vie," "L'amour qu'on ne peut dompter," "Régnier apologiste de lui-même," "La folie est générale," and "Le mauvais lieu" by **Mathurin Regnier** (1573-1613). "La satire Ménippée," by **Leroy, Gillot, Passerat, Rapin, Chrestien, Pithou,** and **Durant,** published in 1594. "Discours de la méthode," "Meditationes de prima Philosophia," "Principia Philosophiae," "Géométrie," "De l'homme," and other philosophical works, by **Rene Descartes** (1596-1650).
	Roger Ascham (1515-1568). Essayist.	
	John Foxe (1516-1587). Theology.	
	Henry Howard (Earl of Surrey) (1517-1547). Poems.	
	Thomas Sackville (1536-1608). Poet and dramatist.	
	Sir Walter Raleigh (1552-1618). Historian and poet.	
	Edmund Spenser (1552-1599). Poet.	
	Richard Hooker (1553-1600). Theology.	
	Sir Philip Sidney (1554-1586). Poet.	
	John Lyly (1554-1606). Essayist.	
	George Chapman (1557-1634). Translation of Homer.	
	Robert Greene (1560-1592). Poet.	
	Francis Bacon (1561-1626). Essayist and philosopher.	
	Michael Drayton (1563-1631). Poet.	
	Christopher Marlowe (1564-1593). Poet and dramatist.	
	William Shakespeare (1564-1616). Dramatist and poet.	
	Sir Henry Wotton (1568-1639). Poems.	
	Ben Jonson (1573-1637). Poems.	
	Thomas Heywood (1575?-1650?). Poems.	
	Robert Burton (1577-1640). Essays.	
	John Fletcher (1579-1625). Poems.	
	Philip Massinger (1583-1640). Poems.	
	William Drummond (1584-1649). Poems.	
	Francis Beaumont (1584-1616). Poems.	
	John Ford (1586-1639). Poems.	
	George Withers (1588-1667). Poems.	
	Thomas Hobbes (1588-1679). Philosophy.	
	Robert Herrick (1591-1674). Poems.	
	Francis Quarles (1592-1644). Poems.	
	George Herbert (1593-1633). Poems.	
	Izaak Walton (1593-1683). Essays.	

GERMANY.

Hymns, including "A Mighty Fortress is our God," numerous theses, religious and political, and translation of the Bible, by **Luther** (1483-1546).

Sermons and contributions to Reformation literature, by **Zwingli** (1484-1531).

Latin poems, letters, and orations, dialogues and letters in Latin and German, "Epistolæ Obscurorum Virorum," by **Hutten** (1488-1523), scholar, poet, and reformer. Satirical letters published in the furtherance of the Reformation at Hagenau in 1505. The cleverest satire of the period.

Collection of German proverbs, native humor, morality, and patriotism, which endeared him to the heart of scholarly Germany, by **Johann Agricola** (1492-1566).

Hymns, fables, allegories, merry tales, dialogues, comedies, Shrovetide plays, by **Hans Sachs** (1494-1576), 6,300 pieces, best and most prolific of the meistersingers.

A universal history (first attempt), and "Sprichwörter," by **Sebastian Franck** (1499-1542), reformer and humorist.

"Schweizerchronik," valuable still, and "Gallia Comata," by **Ægidius** (or **Gilg**) **Tschudi** (1505-1572), Swiss antiquarian.

"True Christianity," "Garden of Paradise," by **Arndt** or **Arnd** (1555-1621).

Collected poems by **Georg Rudolf Weckherlin** (1584-1653).

Witty and realistic works, by **Johann Laurenberg** (1590-1658), satirist.

Three volumes of poetry, including the words of the oldest German opera, "Dafne," by **Martin Opitz** (1597-1639).

ITALY, SPAIN, AND PORTUGAL

Historical works in Spanish, by **Las Casas** (1474-1566).

Historical and political (Italian) works, by **Francesco Guicciardini** (1482-1540).

Portuguese dramas, by **Gil Vicente** (1485-1577).

Poems and burlesques (It.), by **Francesco Berni** (1490-1536).

Prose satires (It.), by **Pietro Aretino** (1492-1557).

Poems (Sp.), by **Juan Boscan Almogaver** (1493-1543).

Poems (Sp.), by **Cristobal de Castillejo** (1494-1556).

Epistles in verse, by **Francisco de Miranda** (1495-1558). Portuguese.

History (Port.), by **Joao de Barros** (1496-1571).

Poems (Sp.), by **Garcilaso de la Vega** (1503-1536).

History and poems (Sp.), by **Diego Hurtado de Mendoza** (1503-1575).

Ascetic and mystic treatises, meditations, and letters (Sp.), by **Santa Teresa** (1515-1582).

Novels (Port.), by **Jorge de Montemayor** (1520-1561).

"Lusiad," Portuguese epic, by **Luiz de Camoens** (1525-1580).

Antonio Ferreira (1528-1569). Portuguese poet.

Luis Ponce de Leon (1529-1591), Spanish poet and prose writer.

"La Araucana" (Sp.), by **Alonzo de Ercilla y Zuniga** (1533-1595).

Lyric poems (Sp.), by **Fernando Herrera** (1534-1597).

Historical works (Sp.), by **Juan de Mariana** (1536-1623).

"Jerusalem Delivered" and other poems (It.), by **Torquato Tasso** (1544-1595).

"Don Quixote," Spanish romance, by **Miguel de Cervantes Saavedra** (1547-1616).

Vicente Espinel (1551-1634). Spanish poems and novels.

Luis de Gongora y Argote (1561-1627). Spanish poems.

Lope de Vega Carpio (1562-1635), Spanish dramas.

Galileo Galilei (1564-1642). Italian scientific works.

Allesandro Tassoni (1565-1635). Italian poet.

Giambatt'sta Marini (1569-1625). Italian poet.

Guillen de Castro (1569-1631). Spanish dramas.

Diego Arduarte (1570-1637). Spanish history.

Gabriel Tellez (1571-1648). Spanish dramas.

Francisco Gomez de Quevedo y Villegas (1580-1645). Spanish satirist.

Juan Ruiz de Alarcon y Mendoza (1588?-1639). Spanish dramas.

Manuel de Faria (1590-1649). Portuguese-Spanish historian and poet.

Manuel de Villegas (1596-1669). Spanish lyrics.

SCANDINAVIA AND RUSSIA.

Mikkel, a priest at Odense, wrote, "Rose Garden of Maiden Mary," "The Creation," and "Human Life."

Laurentius Petri (1499-1573). Psalms in Swedish.

Martin Bielski (1500-1576). Polish historian.

Rey of Naglowice (1505-1569). Father of Polish poetry.

John Kochanowski (1530-1584). Polish poet.

A. G. Vedel (1542-1616). Danish philologist. He translated Saxo Grammaticus.

Hieronymus Rauch (?-1607). Danish biblical tragedies.

Peder Claussen (1545-1623). Danish geographer.

Tycho Brahe (1546-1601). Danish astronomer.

Arild Hvitfeld (1549-1609). Danish Chronicles.

Printing press set up in Moscow (1564).

Johan Messenius (1579-1637). Swedish historian and poet.

Joost van den Vondel (1587-1679). Dutch poet.

Anders Arreboe (1587-1637). Danish poet.

Gustavus Adolphus (1594-1632), king of Sweden. Speeches.

Georg Stjernhjelm (1598-1672). Swedish philologist and poet.

A. D.	ENGLAND.	FRANCE.	GERMANY.
1600	**Sir Thomas Browne** (1605-1682). Theology.	"La comédie des comédiens," "La mort de César," "Arminius," "Alaric," by **Georges de Scudery** (1601-1667).	"Book of Visions," by **Moscherosh** (1601-1669), satirist.
	Edmund Waller (1605-1687). Poet.	"Le Cid," from which modern French drama dates, "Horace," "Cinna," "Polyeucte," "Rodogune," "La mort de Pompée," "Théodore," and many other dramas, by **Pierre Corneille** (1606-1684).	Collection of epigrams by **Logau** (1604-1655).
	Thomas Fuller (1608-1661). Theology.	"Ibrahim," "Artamène, ou le Grand Cyrus," "Clélie," "Almahide," "Mathilde," by **Madeleine de Scudery** (1607-1701).	
		"Roman comique," "Nouvelles tragi-comiques," by **Paul Scarron** (1610-1660).	
	John Milton (1608-1674). Poems.	Ten plays, the best of which are: "La mort de Mithridate," "Bradamante," "Jeanne d'Angleterre," "Le comte d'Essex," "Edouard, roi d'Angleterre." Three novels: "Cassandre," "Cléopâtre," "Faramonde, histoire de France," by **Gauthier de Costes de la Calprenede** (1610-1663).	Hymns, "O Sacred Head once Wounded," "Commit Thou all Thy Griefs," and "Jesus, Thy Boundless Love for Me," and many others, by **Paulus** (or **Paul**) **Gerhardt** (1607-1676), after Luther the greatest hymn writer of Germany.
	Sir John Suckling (1609-1642). Poems.		
	Edward Hyde, Earl of Clarendon (1609-1674). Historian.	"De la fréquente communion," "Théologie morale des Jesuites," "La perpetuité de la foi de l'église catholique défendue," "L'impiéte de la morale des Calvinistes," and other works, in over 100 volumes, by **Antoine Arnauld** (1612-1694).	
		"Maximes" ("Réflexions ou sentences et maximes morales"), "Mémoires," "Lettres," by **Francois la Rochefoucauld** (1613-1680).	Collected poems by **Paul Fleming** or **Flemming** (1609-1640).
		"Works," principally memoirs, by **Cardinal de Retz** (1614-1679).	
	Samuel Butler (1612-1680). Satires.	"Le pédant joué," a comedy, "Histoire comique des états et des empires du soleil," by **Savinien Cyrano de Bergerac** (1619-1655).	
	Jeremy Taylor (1613-1667). Theology.	"L'école des femmes," "Don Juan," "L'amour médecin," "Le misanthrope," "Le médecin malgré lui," "L'avare," "Le bourgeois gentilhomme," "Psyché," "Les femmes savantes," "Le malade imaginaire," and other plays by **Moliere**, pseudonym of **Jean Baptiste Poquelin** (1622-1673).	
	Richard Baxter (1615-1691). Theology	"Lettres provinciales," 18 in controversy with the Jesuits, "Pensées sur la religion et sur quelques autres sujets," "Apologie de la religion chrétienne," "Geometry of Conics" written at 16, by **Blaise Pascal** (1623-1662).	**Andreas Greif** or **Gryphias** (1616-1664). First to introduce regular five-act tragedy into German.
	Sir Richard Lovelace (1618-1658). Poems.		
		"La logique, ou l'art de penser," "Essais de morale," by **Pierre Nicole** (1625-1695).	Love lyrics by **Hofmannswaldau** (1617-1679).
	Abraham Cowley (1618-1667). Poems.	Theological works: "Exposition de la doctrine de l'église catholique sur les matières de controverse," "Histoire des variations des églises protestantes," "Discours sur l'histoire universelle jusqu'à l'empire de Charlemagne," "Politique tirée de l'Ecriture Sainte," "Select Sermons and Funeral Orations," "Sermon on the Mount," "Méditations," by **Jacques Benigne Bossuet** (1627-1704).	
	Andrew Marvell (1620-1678). Poems.		"Rosamond of the Adriatic," novel of adventure, also grammar and verse, by **Zesen** (1619-1689), poet and romancer.
		"Le siècle de Louis le Grand," a poem; "Parallèle des anciens et des modernes," answers to the attacks of Boileau; two studies of "Les hommes illustres qui ont paru en France pendant ce siècle," and "Mother Goose" stories of Sleeping Beauty, Little Red Riding Hood, Bluebeard, Puss in Boots, Cinderella, and Tom Thumb, by **Charles Perrault** (1628-1703).	
	John Evelyn (1620-1706). Diary.		
	George Fox (1624-1690). Journal.		"Simplicissimus," the only German fiction of the seventeenth century that can be read now with pleasure, by **Grimmelshausen** (about 1625-1676), the author's adventures in the Thirty Years' War.
		"Sermons and Moral Discourses," "Married Life, Its Obligations, Trials, etc.," by **Louis Bourdaloue** (1632-1704).	
	John Bunyan (1628-1688). Allegory.		
		"Oraisons funèbres," "Carmen Eucharisticum," "Circus Regius," "Mémoires sur les grand jours de Clermont," by **Valentin Esprit Flechier** (1632-1710).	
		"La princesse de Clèves," a novel; "Mlle. de Montpensier," a short story; "Zayde," a novel; "La Comtesse de Teude," a short story; and "Mémoires," by **Marie Madeleine Pioche de la Vergne, Comtesse de la Fayette** (1634-1693).	
	John Dryden (1631-1700). Poems.		
	Samuel Pepys (1632-1703). Diary.	"Lettres," by **Madame Francoise d'Aubigne, Marquise de Maintenon** (1635-1719).	
		"L'art poétique," "Dialogue des héros de roman," "Réflexions critiques sur Longin," "Le lutrin," a mock-heroic poem, and many other poems, by **Nicholas Boileau-Despreaux** (1636-1711).	Lyrics, tragedies, and a long novel, by **Lohenstein** (1635-1683).
	John Locke (1632-1704). Metaphysics.		
		"Recherche de la vérité," "Conversations metaphysiques de chrétiennes," "Traité de la nature et de la grâce," "Réponses de Malebranche à Arnauld," by **Nicolas Malebranche** (1638-1715).	
	Sir Isaac Newton (1642-1727). Philosophy.		Theological works (180) by **Spener** (1635-1705), founder of the German Pietists.
		"Andromaque," "Phèdre," "Iphigénie," "Athalie," "Esther," "Bérénice," "Bajazet," "Mithridate," "Les plaideurs," by **Jean Racine** (1639-1699).	

ITALY AND SPAIN.

Hieronomo de Contreras (1600-1648). Spanish poet and novelist.

Pedro Calderon de la Barca (1600-1681). Spanish dramas.

Francisco de Zorrilla (1607-1660). Spanish dramas.

Antonio de Solis y Ribadeneira (1610-1686). Spanish historian and dramatist. Author of "Conquest of Mexico."

Manuel de Melo (1611-1666). Portuguese historian and poet.

Salvator Rosa (1615-1673). Italian painter. Wrote satires, odes, and letters.

Agustin Moreto y Cabana (1618-1669). Spanish dramas.

Lorenzo Magalotti (1637-1712). Italian prose writer.

Vincenzo da Filicaja (1642-1707). Italian lyric poet.

SCANDINAVIA AND RUSSIA.

Erik Pontoppidan (1616-1678). Danish grammarian.

Rosenhane (1619-1684). Swedish poet and sonneteer.

Waclaw Potocki (1622-1697). Noted Polish poet.

Clas Arrhenius (1627-1695). Swedish historian.

Olaf Rudbeck (1630-1702). Swedish physiologist and botanist.

Thomas Kingo (1634-1703). Danish divine. Wrote psalms and hymns.

AMERICA.

"A True Relation of Such Occurrences and Accidents of Note as hath Happened in Virginia," by **John Smith,** published in London (1608).

"A True Reportory of the Wrack and Redemption of Sir Thomas Gates, Knight, upon and from the Islands of the Bermudas, his coming to Virginia and the Estate of that Colony then and after under the Government of the Lord La Ware," by **William Strachey,** published in London in 1610. Possibly suggested "The Tempest" to Shakespeare.

"A Map of Virginia, with a Description of the Country, the Commodities, People, Government, and Religion," by **John Smith,** Oxford (1612).

"Good News from Virginia," by **Alexander Whitaker,** London (1613).

"A Description of New England," by **John Smith,** London (1616).

"Mayflower Compact," written by the Pilgrim Fathers in 1620.

"New England's Trials," by **John Smith,** London (1620).

"A Relation or Journal," by **Bradford** and **Winslow,** covering the period from November 9, 1620, to December 18, 1621. London (1621), and long known as "Mourt's 'Relation.'"

"Sin and Danger of Self-Love," the first published discourse delivered in New England, by **Robert Cushman,** London (1624).

"Good News from New England," by **Edward Winslow,** London (1624).

"Nova Anglia," in Latin verse and English pentameter paraphrase, by **William Morrell,** London (1625).

"Translation of the Fifteen Books of Ovid's Metamorphoses," by **George Sandys,** London (1626).

"New England's Plantation," by **Francis Higginson,** London (1629).

"History of Plymouth Plantation," by **William Bradford,** written from 1630 onward, and first published in full in 1856.

"The History of New England," by **John Winthrop,** written between March 29, 1630, and November, 1648, first published in full in 1825 and 1826.

"The Humble Request of his Majesty's Loyal Subjects, the Governor and the Company lately gone for New England, to the Rest of the Brethren in and of the Church of England," by **John Winthrop** and others, published in 1630.

"True Travels, Adventures, and Observations," by **John Smith,** published in 1630.

"Advertisements for the Inexperienced Planters of New England," by **John Smith,** published in 1631.

"The Soul's Preparation; or, a Treatise of Contrition," by **Thomas Hooker** (1586-1647), published in 1632.

"New England's Prospect," with map, by **William Wood,** published in 1634.

"The Soul's Implantation," and "The Soul's Humiliation," by **Thomas Hooker,** in 1637.

"New English Canaan," by **Thomas Morton,** published in 1638.

Several religious treatises, by **Thomas Hooker,** published in 1638.

"New England's Teares for Old England's Feares," by **William Hooke,** published in 1639.

"An Almanac for 1639; calculated for New England," by **William Pierce,** and printed by Daye at Cambridge (Mass.). **Stephen Daye** set up the first printing press in America in 1639 at Cambridge. "Freeman's Oath," the first product of the press in America, printed by Daye in 1639.

"The Whole Book of Psalms Faithfully Translated into English Metre," by **Richard Mather, John Eliot,** and other "Chief Divines in the Country," known as the "Bay Psalm Book," the first English book printed in America (1640).

"The Way of Life," in four treatises, by **John Cotton,** London (1641).

"The Sincere Convert. Discovering the Paucity of True Believers and the Great Difficulty of Saving Conversion," by **Thomas Shepard** (1641).

"The Body of Liberties," compiled by **Nathaniel Ward** (1641).

"An Abstract of the Laws of New England" (1641).

"A Catechism Agreed upon by the Elders at the Desire of the General Court" (1641).

"A Brief Exposition of the Book of Canticles," by **John Cotton** (1642).

"Plain Dealing; or, News from New England," by **Thomas Lechford** (1642).

"Theses of the First Graduates of Harvard College" (1642).

A. D.	ENGLAND.	FRANCE.	GERMANY.
1600	**Jeremy Collier** (1650-1726). Sermons.	"Caractères," "Pensées," "Discours," "Lettres," by **Jean de la Bruyere** (1645-1696).	Works of originality and power in mental science and mathematics by **Leibnitz** (1646-1716).
	Thomas Otway (1652-1685). Dramas.	"Historical and Critical Dictionary," "Pensées sur la comète," "Critique générale sur l'histoire du Calvinisme du Père Maimbourg," and many philosophical treatises, by **Pierre Bayle** (1647-1706).	
	Daniel Defoe (1661-1731). Tales and essays.	"De l'éducation des filles," "Fables," "Dialogues des morts," "Abrége des vies des anciens philosophes," "Vie de Charlemagne," "Maximes des saints," "Télémaque," by **Francois de Salignac de la Mothe Fenelon** (1651-1715).	
	Matthew Prior (1664-1721). Poems.	"La Provençale," a novel; "Le joueur," "Le distrait," "Démocrite," "Les folies amoureuses," "Les Ménechmes," and other plays, by **Jean Francois Regnard** (1655-1709).	Odes, satires, and elegies, by **Canitz**, poet and statesman (1654-1699).
	Jonathan Swift (1667-1745). Tales and essays.	"Histoire des oracles," "Entretiens sur la pluralité des mondes," "Dialogues des morts," by **Bernard le Bovier Fontenelle** (1657-1757).	First German magazine by **Thamasius** (1655-1728).
	William Congreve (1670-1729). Dramas.	"Traité des études," an educational work; "Histoire ancienne," "Histoire romaine," by **Charles Rollin** (1661-1741).	
	Sir Richard Steele (1671-1729). Essays.	"Le notaire obligeant," "Le chevalier à la mode," and other plays; a metrical version of the Psalms and a sacred tragedy, by **Florent Carton Dancourt** (1661-1725).	Theological and pedagogical works by **Franke** (1663-1727), educator and philanthropist.
	Joseph Addison (1672-1719). Essays and poems.	Funeral orations and sermons in 15 volumes, by **Jean Baptiste Massillon** (1663-1742).	
	George Farquhar (1678-1708). Dramas.	"Turcaret," a comedy; "Gil Blas," a novel; and other works, by **Alain Rene Le Sage** (1668-1747).	
		Thirteen volumes of works comprising "Lettres inédites" and political and legal utterances, by **Henri Francois d'Aguesseau** (1668-1751).	Philosophy and mathematics by **Wolf or Wolff** (1679-1754), disciple of Leibnitz.
	Bishop Berkeley (1684-1753). Philosophy.	Epigrams, satires, and lyric poems in 5 volumes, by **Jean Baptiste Rousseau** (1670-1741).	
	Edward Young (1684-1765). Poems.	"Idoménée," "Atrée et Thyeste," "Electre," "Rhadamiste et Zénobie," "Pyrrhus," and other plays, by **Prosper Jolyot de Crebillon** (1674-1762).	
	Allan Ramsay (1686-1758). Poems.	"Mémoires," by **Louis de Rouvroy, Duc de Saint-Simon** (1675-1755).	
	John Gay (1688-1732). Fables and poems.	"Le dissipateur," "Le glorieux," "Le philosophe marié," "La faussée Agnes," and other plays by **Philippe Nericault Destouches** (1680-1754).	Collection of poems (13 vols.), "Translation of Thomson's Seasons," by **Brockes** (1680-1747).
	Alexander Pope (1688-1744). Poems.	"Arlequin poli par l'amour," "Les surprises de l'amour," "Le triomphe de Plutus," "Le legs," "Les fausses confidences," and other plays; "Marianne," and other novels, by **Pierre Carlet de Chamblain de Marivaux** (1688-1763).	
	Samuel Richardson (1689-1761). Novels.	"Lettres persanes," "Considérations sur les causes de la grandeur et la décadence des Romains," "Dialogues de Sylla et d'Eucrate et de Lysimaque," "Esprit de lois," by **Charles de Secondat, Baron de la Brede et de Montesquieu** (1689-1755).	Collection of poems by **Gunther** (1695-1723), lyric poet, most gifted poet of an unpoetic age.
	Lady Mary Wortley Montagu (1690-1762). Letters.	"Arlequin Deucalion," a monologue in three acts; "La métromanie," and other plays in 7 volumes, by **Alexis Piron** (1689-1773).	Translation of Milton's "Paradise Lost" by **Bodmer** (1698-1785), poet and critic.
	Bishop Joseph Butler (1692-1752). Theology.	"Oedipe," a tragedy; "Poëme de la Ligue," "Le pour et le contre"; "La Henriade," a poem; "Brutus," "Zaïre," "Sémiramis," tragedies; "Histoire de Charles XII., roi de Suede," "Letters Concerning the English Nation," "Lettres philosophiques," "Contes philosophiques," "Candide," "Tancrède," by **Voltaire**, name assumed by **Jean Francois Marie Arouet** (1694-1778).	
		"Mémoires d'un homme de qualité," "Manon Lescaut," and other novels, by **Antoine Francois Prevost d'Exiles** (1697-1768.)	
1700	**James Thomson** (1700-1748). Poems.	"Histoire de Louis XI.," "Considérations sur les moeurs de la règne de Louis XIV.," "La régence et le règne de Louis XV.," by **Charles Pinot Duclos** (1704-1772).	Literary criticism amounting almost to a dictatorship, by **Gottsched** (1700-1766), in drama and poetry.
	Henry Fielding (1707-1754). Novels.	"Natural History" in 44 volumes, "Discours sur le style," by **Georges Louis Leclerc, Comte de Buffon** (1707-1788).	"Physiological Elements of the Human Body," by **Haller** (1708-1777), scientist and poet.
	Samuel Johnson (1709-1784). Dictionary and essays.	"Vert-vert," "Chartreuse," "Carême impromptu," "Lutrin vivant," "Edouard III.," "Sydney," "Le méchant," and other plays, by **Jean Baptiste Louis Gresset** (1709-1777).	Unparalleled progress in letters under **Frederick II.** (1712-1786).
	Thomas Reid (1710-1796). Philosopher.		**Rabener** (1714-1771), satirist.
	David Hume (1711-1776). Historian.	Contributions to the Encyclopedia of Diderot and 21 volumes, principally of political science, including "Entretiens de Phocion," "Doutes proposés aux philosophes économistes," "Observations on the laws and government of the United States of America," by **Gabriel Bonnot de Mably** (1709-1785).	"Des Frühling," "Gedichte," by **Kleist** (1715-1759), eminent nature poet.
	Laurence Sterne (1713-1768). Novelist.		Poems, didactic and religious, fables, stories, very popular in their day, 10 vols. of works by **Gellert** (1715-1769).
	Thomas Gray (1716-1771). Poet.		Songs and collected poems and modern glees by **Hagedorn** (1718-1754).
		"Confessions," "Discours sur l'inégalite," "Discours sur les sciences et les arts," "Letter on Providence," "Du contrat social," "La nouvelle Héloïse," "Emile," "Lettres écrites de la montagne," "Dialogues," by **Jean Jacques Rousseau** (1712-1778).	Collection of witty and caustic epigrams, "Sinngedichte," by **Kastner** (1719-1800).
	Gilbert White (1720-1793). Naturalist.		"Preussische Kriegslieder von einem Grenadier," vigorous and thrilling (Seven Years' War), by **Gleim** (1719-1803).
	William Collins (1721-1756). Poet.		"Allgemeine Theorie der schönen Künste," by **Sulzer** (1720-1779).

ITALY AND SPAIN.

Alessandro Guidi (1650-1712). Italian lyric poet.

Pier Jacopo Martelli (1655-1727). Italian poet and dramatist.

Giovanni Battista Vico (1668-1744). Italian historian.

Apostolo Zeno (1668-1750). Italian dramatist.

Ludovico Antonio Muratori (1672-1750). Italian annalist.

Count of Ericeyra (Francisco Xavier de Menezes) (1673-1744). Portuguese historian.

Niccolo Forteguerri (1674-1735). Italian satirist.

Francesco Scipione Maffei (1675-1755). Italian poet, archæologist, and dramatist.

Francisco Benito Feyjoo y Montenegro (1676-1764). Spanish essayist and critic.

Antonio Conti (1677-1749). Italian poet and philosopher.

Pietro Metastasio (1698-1782). Italian poet and dramatist.

Ignacio Luzan (1702-1754). Spanish poet

Don Juan de Yriarte (1702-1771). Spanish proverbs.

Carlo Goldoni (1707-1793). Italian dramatic and comic author.

Carlo Gozzi (1722-1806). Italian dramatist

Giuseppe Parini (1729-1799). Italian poet.

Giralamo Tiraboschi (1731-1794). Italian literary historian.

Ramon de la Cruz (1731-1795). Spanish dramatist.

SCANDINAVIA AND RUSSIA.

First book printed in Norway, an almanac, 1643.

Peder Dass (1647-1708). Norwegian poet.

Gustaf Adlerfeld (1671-1709). Swedish historian.

Eric Benzel (1675-1743). Swedish moralist.

Ludwig Holberg (1684-1754). Danish historian and dramatist.

Vasili Tatishcheff (1686-1750). Russian historian.

Emanuel Swedenborg (1688-1772). Philosopher, founder of Swedenborgianism.

Hans Adolphus Brorson (1694-1764). Danish hymns.

Stepkn Konarski (1700-1773). Polish essayist,

Prince Chakhofskoi (1705-1772). Russian poet.

Johan Ihre (1707-1780). Swedish dictionary.

Olof Dalin (1708-1763). Swedish historian and poet.

Mikhail Lomonosoff (1711-1765). Founder of Russian literature.

Princess Dolgoroukaia (1713-1770). Russian poet.

Jacob Henrik Mork (1714-1763). Swedish novelist.

Charlotte Nordenflycht (1718-1763). Swedish poet.

Johann Ernest Gunnerus (1718-1773). Norwegian botanist.

Alexander Sumarokoff (1718-1777). Russian prose and verse.

C. B. Tullin (1728-1765). Danish poet.

AMERICA.

"A Looking-Glass for the Times," by **William Hubbard** (1621-1704).

"Church Government and Church Covenant," by **Richard Mather** (1643).

"An Help to the Language of the Natives in New England" (verse and prose), by **Roger Williams** (1643).

"New England's First Fruits. In respect, first, of the Indians. Second, of the Progress of Learning in the College at Cambridge" (1643).

"The True Use of Synods," by **Richard Mather** (1644).

"A Short History of the Rise, Reign, and Ruin of the Antinomians, Familists, and Libertines that Infested the Churches of New England," by **Thomas Welde** (1644).

"Queries of Highest Consideration," "The Bloody Tenet of Persecution for the Cause of Conscience," by **Roger Williams** (1644).

"The Way of the Churches of Christ in New England," by **John Cotton** (1645).

"The Sound Believer," by **Thomas Shepard** (1645).

"Christening makes not Christians," by **Roger Williams** (1645).

"A Declaration of Passages and Proceedings Between the English and the Narragansetts," by **Governor Winthrop** (1645).

"The Gospel Covenant," by **Peter Bulkley** (1646).

"Concerning the Power of Magistrates and Synods," by the Cambridge Synod (1646).

"Milk for the Spiritual Nourishment of Boston Babes in Either England," by **John Cotton** (1646).

"Simplicitie's Defence against Seven-headed Policie," by **Samuel Gorton** (1646).

"Hypocrisie Unmasked," by **Edward Winslow** (1646.)

"The Grounds and Ends of the Baptism of the Children of the Faithful," and "Singing of Psalms a Gospel Ordinance," by **John Cotton** (1647).

"The Day Breaking if not the Sun Rising of the Gospel with the Indians in New England," by (probably) **Thomas Shepard** (1647).

"The Simple Cobbler of Agawam," by "Theodore de la Guard," *nom de plume* of **Nathaniel Ward.** Ran through three editions in 1647.

"New England's Salamander," by **Edward Winslow** (1647).

"Way of Congregational Churches Cleared," by **John Cotton** (1648).

"Survey of the Summe of Church Doctrine," by **Thomas Hooker** (1648).

"Responsio ad Totum Questionem Syllogen a Clariss. Viro Guilielmo Apollonio Propositam (circa Politiam Ecclesiasticam in Anglia)," by **John Norton** (1648). The first Latin book written in New England.

"A Platform of Church Discipline," by the Cambridge Synod, in 1649.

"The Controversy Concerning Liberty of Conscience in Matters of Religion," by **John Cotton,** in 1649.

"The Glorious Progress of the Gospel among the Indians," by **John Eliot** and others, in 1649.

"Theses Sabbaticæ; or, the Doctrine of the Sabbath," by **Thomas Shepard,** in 1649.

"Disturbances made in New England by Samuel Gorton and his Accomplices," by **Edward Winslow,** in 1649.

"The Tenth Muse lately Sprung up in America," a book of poems, by **Anne Bradstreet,** published in London in 1650.

"Astronomical Calculations," by **Urian Oakes,** in 1650.

"A Catechism," by **Richard Mather,** in 1650.

"The Day of Doom; or a Poetical Description of the Great and Last Judgment"; "Meat Out of the Eater," by **Michael Wigglesworth** (1631-1705).

Several religious works, by **Increase Mather** (1639-1723).

A natural history of New England and other scientific works, by **John Josselyn** (died about 1680).

"New England's Crisis" (in verse on King Philip's War), by **Benjamin Thompson** (about 1650).

Several religious and poetical works, by **Cotton Mather** (1663-1728).

"A Journal of One Thousand Miles of Travel among the Indians," and a "Description of Carolina," by **John Lawson** (?—1712).

"A Two Years' Journal in New York," by **Charles Woolley** (about 1680).

"History of Virginia," by **Robert Beverley** (1675-1746).

A. D.	ENGLAND.	FRANCE.	GERMANY.
1700	**Mark Akenside** (1721-1770). Poet. **Tobias Smollett** (1721-1771). Novelist. **William Robertson** (1721-1793). Historian. **Sir William Blackstone** (1723-1780). Jurist. **Adam Smith** (1723-1790). Economist. **Oliver Goldsmith** (1728-1774). Essays, poems, and plays. **Bishop Percy** (1728-1811). Poet. **Edmund Burke** (1729-1797) Speeches and essays. **William Cowper** (1731-1800). Poet. **James Macpherson,** "Ossian" (1736-1796). Poet. **Edward Gibbon** (1737-1794). Historian. **James Boswell** (1740-1795). Biographer. **William Paley** (1743-1805). Theologian. **Hannah More** (1745-1833). Novelist and poet. **Jeremy Bentham** (1748-1832) Philosopher and essayist. **Richard Brinsley Sheridan** (1751-1816). Speeches, plays, and poems. **Thomas Chatterton** (1752-1770). Poet. **Frances Burney** (1752-1840). Novelist. **Dugald Stewart** (1753-1828). Philosopher. **George Crabbe** (1754-1832). Poet. **William Blake** (1757-1827) Poet. **Robert Burns** (1759-1796) Poet. **William Cobbett** (1762-1835). Essayist. **Joanna Baillie** (1762 - 1851). Poet. **Samuel Rogers** (1763-1855). Poet. **Isaac D'Israeli** (1766-1848). Literary essayist. **Maria Edgeworth** (1767-1849). Novelist. **James Hogg,** "The Ettrick Shepherd" (1770-1835). Essayist and poet. **William Wordsworth** (1770-1850). Poet. **Sir Walter Scott** (1771-1832). Novelist and poet. **Sydney Smith** (1771-1845). Sermons,essays, and satires **James Montgomery** (1771-1854). Poet. **John Lingard** (1771-1851). Historian. **David Ricardo** (1772-1823). Political economist. **Samuel Taylor Coleridge** (1772-1834). Essayist, poet. **Robert Southey** (1774-1843). Poet and biographer. **Charles Lamb** (1775-1834). Essayist. **Walter Savage Landor** (1775-1864). Essayist. **Jane Austen** (1775-1817). Novelist. **Henry Hallam** (1777-1859). Historian. **Thomas Campbell** (1777-1844). Poet. **William Hazlitt** (1778-1830). Essayist. **Thomas Moore** (1779-1852). Poet.	"Encyclopédie," "Le fils naturel," and "Le père de famille," plays; and many essays, by **Denis Diderot** (1713-1784). Contributions to Diderot's "Encyclopédie," "Révolution d'Amerique," by **Guillaume Thomas Francois Raynal** (1713-1796). "Introduction à la connaissance de l'esprit humain" "Réflexions," "Maximes," by **Luc de Clapier, Marquis de Vauvenargues** (1715-1747). Contributions to Diderot's "Encyclopédie," "De l'esprit," "De l'homme, ses facultés intellectuelles, et son éducation," by **Claude Adrien Helvetius** (1715-1771). "Traité de dynamique," "Réflexions sur la cause générale des vents," Contributions to Diderot's "Encyclopédie," by **D'Alembert,** the name assumed by **Jean Le Rond** (1717-1783). "Le philosophe sans le savoir." "La gageure imprévue," and "Oeuvres choisies," in three volumes, by **Michel Jean Sedaine** (1719-1797). Contributions to Diderot's "Encyclopédie," "Système de la nature," by **Paul Henri Thyry, Baron d'Holbach** (1723-1789). "Contes moraux," "Bélisaire," "Les Incas," popular novels; "Denys le tyran," "Aristomène," tragedies; contributions to Diderot's "Encyclopedie," and "Mémoires," by **Jean Francois Marmontel** (1723-1799). Contributions to Diderot's "Encyclopédie," "Le petit prophète de Boehmischbroda," "Correspondance littéraire, philosophique, et critique," by **Friedrich Melchior, Baron Grimm** (1723-1807). "Le barbier de Séville," "Le mariage de Figaro," "Eugénie," "Les deux amis," and other plays; "Mémoires," by **Beaumarchais,** a name assumed by **Pierre Augustin Caron** (1732-1799). "Voyage à l'Ile de France," "Etudes de la nature," "Paul et Virginie," "La chaumière indienne," "Harmonies de la nature," by **Jacques Henri Bernardin de Saint-Pierre** (1737-1814). Translation of Vergil's "Georgics," "Les jardins ou l'art d'embellir les paysages," "L'homme des champs en les georgics françaises." Translation of "Paradise Lost," "La pitié," Vergil's "Enéide," "L'imagination," "La conversation," and other poems, by **Jacques Delille** (1738-1813). "La jeune indienne," "Maximes et pensées," by **Sebastien Roch Nicolas Chamfort** (1741-1794). "Considérations sur la France," "Essai sur le principe générateur des constitutions politiques," "Du pape," "De l'église gallicane," "Lettres," "Mémoires," by **Joseph de Maistre** (1754-1821). "Galatée," "Numa Pompilius," "Estelle," "Gonsalve de Cordoue," "Fables," by **Jean Pierre Claris de Florian** (1755-1794). "Les révolutions de France et de Brabant," "Jeu de paume," a Pindaric ode; "A Versailles," "A Fanny," "Jeune captive," and other lyric poems, by **Andre Marie de Chenier** (1762-1794). "Voyage autour de ma chambre," "Les prisonniers du Caucase," "Le lépreux de la cité d'Aoste," "Prascovie, ou la jeune Sibérienne," and essays, by **Xavier de Maistre** (1763-1852). "Charles IX.," "Tableau historique de progrès de la litterature française," and the poems, "Chant du départ," "Sur la mort de Mirabeau," "Sur l'oligarchie de Robespierre." Also the satires, "Lettre à Voltaire," "Epître sur la calomnie," by **Marie Joseph de Chenier** (1764-1811). "Les Natchez," "Atala," "René," "Essai sur les révolutions," "Les martyrs," "Les aventures du dernier des Abencérages," "Itinéraire de Paris à Jerusalem," "De Buonaparte et des Bourbons," "Translation of Paradise Lost," "Mémoires d'outre tombe," by **Francois Rene Auguste, Vicomte de Chateaubriand** (1768-1848). **Georges Leopold, Baron de Cuvier** (1769-1832). Naturalist. **Francois Fourier** (1772-1837). Sociologist (Fourierism). **Jean Baptiste Biot** (1774-1862). Philosopher and mathematician.	"Patriotische Phantasien," "Osnabrückische Geschichte," by **Moser** (1720-1794), historian. "Sieg des Liebesgottes," "Poetische Schriften," by **Uz** (1720-1796), poet. "Der Messias," "Art of Poetry," 12 vols. of works, by **Klopstock** (1724-1803), poet. "Critique of Pure Reason" and an immense number of metaphysical works, by **Kant** (1724-1804). "Lieder der Deutschen," "Lyrische Blumenlese," by **Ramler** (1725-1798). Lyrics and books for children—the first to appeal to them, by **Weisse** (1726-1804). "Der junge Gelehrte," "Literatur Briefe," "Minna von Barnhelm," "Laokoon," "Nathan der Weise," by **Lessing** (1729-1781), Father of German criticism. "Pope, ein Metaphysiker," "Briefe über die Empfindungen," "Ueber die Evidenz in die metaphysischen Wissenschaften," "Phädon," "Jerusalem," and "Morgenstunden," by **Mendelssohn** (1729-1786), philosopher. "Tibullus," editions of Latin and Greek authors, and reviews of books, by **Heyne** (1729-1812), classical scholar. "Der Tod Abels," "Idyllen," and "Daphnis," by **Gessner** (1730-1788). "Sebaldus Nothanker" and literary reviews, by **Nicolai** (1733-1811). "Oberon," an epic, "Translations of Horace," "Letters of Cicero," "Dialogues of Lucian," 53 volumes of complete works, by **Wieland** (1733-1813). "Vom Verdienste," "Vom Tod für's Vaterland," by **Abbt** (1738-1766), author and mathematician. "Fragmente über die neuere deutsche Litteratur," "Kritische Wälder," "Ueber den Ursprung der Sprache," "Ideen zur Philosophie der Geschichte der Menschheit," 60 volumes, by **Herder** (1744-1803), critical works. "Lenore," a ballad, "Der wilde Jäger," "Leonardo und Blandine," by **Burger** (1747-1794), poet. Poetical works by **Holty** (1748-1776). "Wilhelm Meister," "Faust," "Dichtung und Wahrheit," by **Goethe** (1749-1832), greatest German writer, one of the greatest in the world. "Der Hofmeister," and short poems, by **Lenz** (1751-1792), dramatic poet. "Julius von Tarent," drama, by **Leisewitz** (1752-1806). "Geschichte der Schweizer," "Darstellung des Fürstenbundes," "Briefe zweier Domherren," by **Muller** (1752-1809), historian. "Die Zwillinge," tragedy; "Sturm und Drang," and "Faust" by **Klinger** (1752-1831). "Die Räuber," "Don Carlos," "Der Taucher," "Der Handschuh," "Das Lied von der Glocke," "Wallenstein," "Maria Stuart," "Die Jungfrau von Orleans," "Wilhelm Tell," by **Schiller** (1759-1805). "Critique of all Revelation," "Doctrine of Science," "Science of Rights," "System of Ethics," etc., by **Fichte** (1762-1814). "Schulmeister Wuz," "Quintus Fixlein," "Hesperus," and pedagogical works by **Richter** (1763-1825), humorist. Poems, "Spanish Theater," and southern lyrics, by **Schlegel** (1767-1845), critic, poet, orientalist. "Philosophy of Mind," "Logic," "Philosophy of Right," "Philosophy of Religion," "Philosophy of History," "History of Philosophy," by **Hegel** (1770-1831). "Heinrich von Ofterdingen." "Hymnen an die Nacht," by **Novalis** (1772-1801). "History of Greek and Roman Poetry," "Lucinde," by **Friedrich von Schlegel** (1772-1829). "Volksmärchen," "Romantische Dichtungen," translations of Shakespeare and Don Quixote, by **Tieck** (1773-1853), novelist, translator, and critic. "Identitats-Philosophie," etc., by **Schelling** (1775-1854). "Die Elixire des Teufels," "Lebensansichten des Katers Murr," "Nachtstücke," "Der Goldene Topf," by **Hoffmann** (1776-1822).

ITALY AND SPAIN.

Giovanni Meli (1740-1815). Sicilian poet.

Alessandro Verri (1741-1816). Italian novelist.

Gaspar Melchor Jove-Llanos (1744-1811). Spanish prose.

Felix Maria de Samiengo (1745-1801). Spanish fables.

Alessandro Volta (1745-1827). Italian scientist.

Vittorio Alfieri (1749-1803). Italian poems and dramas.

Tomas de Yriarte (1750-1791). Spanish poet and translator.

Tomas Jose Gonzales Carvahal (1753-1834). Spanish poems.

Juan Melendez Valdez (1754-1817). Spanish poet.

Ippolito Pinde Monte (1754-1825). Italian poet.

Vincenzo Monti (1754-1828). Italian poems.

Leandro Moratin (1760-1828). Spanish dramas and poems.

Antonio Cesari (1760-1828). Italian editor.

Carlo Botta (1766-1837). Italian historian.

Juan Bautista de Arriaza (1770-1837). Spanish poems.

Manuel Jose Quintana (1772-1857). Spanish poet.

Jean Charles de Sismondi (1773-1842). Swiss historian.

Jose Maria Blanco (1775-1841). Spanish philosopher.

SCANDINAVIA AND RUSSIA.

Peter Frederik Suhm (1728-1798). Danish historian.

Gustaf Philip Creutz (1731-1785). Swedish poet.

Adam Naruszewicz (1733-1796). Polish poet and historian.

Mikhail Kheraskoff (1733-1807). Russian epic poet.

Ignacy Krasicki (1735-1801). Polish poet.

Johan Clemens Tode (1736-1806). Danish medical writer.

Karl M. Bellman (1740-1795). Swedish poet.

Johan Herman Wessel (1742-1785). Danish dramatist and poet.

Johan Ewald (1743-1781). Danish poet.

Gabriel Romanovitch Derzhavin or **Derjavine** (1743-1816). Russian lyric poet.

Hans Werner Frederic Abrahamson (1744-1812). Danish critical writer.

Ivan Ivanovitch Khemnitzer (1745-1784). Russian fabulist.

Claus Fasting (1746-1791). Danish poet.

Johan Oxenstjerna (1750-1818). Swedish poet.

Gudmund G. Adlerbeth (1751-1818). Swedish poet, dramatist, and translator.

Niels Treschow (1751-1833). Norwegian philosopher.

Anna Maria Lenngren (1754-1817). Swedish poet.

Johan Henrik Kellgren (1757-1795). Swedish lyric poet,

Thomas Thorild (1759-1808). Swedish critic.

Knud Lyne Rahbek (1760-1830). Danish novelist.

Jens I. Baggesen (1764-1826). Danish humorous poet.

O. C. Olafsen (1764-1827). Danish geographer and economist.

Nikolai Mikhailovitch Karamzin (1765-1826). Russian historian, novelist, and poet.

Ivan Andreyevitch Krylov (1768-1844). Russian fabulist.

Adolph Schack-Staffeldt (1769-1826). Danish poet.

Franz Franzen (1772-1847). Swedish poet.

Countess Gyllembourg-Ehrensvard (1773-1856). Danish novelist.

AMERICA.

"History of the Pirates on the Island of Providence," by **Charles Johnson** (about 1700).

"Freedom of the Will," "Original Sin," "Sermons," and other religious works, by **Jonathan Edwards** (1703-1758).

The Boston *News-Letter*, established on April 24, 1704, was the first and, for fifteen years, the only newspaper in what is now the United States; it continued until 1776.

"Poor Richard's Almanac," "Essays," Scientific, Moral, and Ethical papers, by **Benjamin Franklin** (1706-1790).

"History of the Province of Massachusetts Bay," by **Thomas Hutchinson** (1711-1780).

Boston *Gazette*, established on December 21, 1719; incorporated in 1741 with the New England *Weekly Journal*.

The American *Weekly Mercury* established at Philadelphia, on December 22, 1719; discontinued soon after.

"Catalogus Librorum Bibliothecæ Collegii," published by Harvard College in 1723; the first library catalogue published in this country.

The New York *Gazette*, established in 1725; the first paper of New York City.

The *Weekly Rehearsal*, established in Boston in 1731; followed by the Boston *Evening Post*, which was discontinued in 1775.

"Rights of Man," by **Thomas Paine** (1737-1809). His "Age of Reason" was published in 1794-1796.

"Battle of the Kegs" and "Rising Glory of America," in verse, by **Francis Hopkinson** (1738-1791).

"Modern Chivalry," by **H. H. Brackenridge** (1748-1816).

"McFingal," by **John Trumbull** (1750-1831), was published between 1775 and 1782.

Poems by **Phillis Wheatley** (Peters) (about 1753-1794), a negress born in Africa.

"The Vision of Columbus," "Hasty Pudding," and "The Columbiad," by **Joel Barlow** (1755-1812).

New Hampshire *Gazette* established in 1756.

"American Spelling Book," by **Noah Webster** (1758-1843), issued in 1783.

"Charlotte Temple," by **Susanna Rowson** (1762-1824).

Georgia *Gazette* established at Savannah in 1763.

"American Ornithology," begun by **Alexander Wilson** (1766-1813), and finished by **Charles Lucien Bonaparte** (1803-1857).

"Hail, Columbia," written in 1798, by **Joseph Hopkins** (1770-1842).

"Wieland," "Ormond," "Arthur Mervyn," "Edgar Huntley," "Clara Howard," and "Jane Talbot," by **Charles Brockden Brown** (1771-1810).

"The Invention of Letters," "The Ruling Passion" "Adams and Liberty," and "The Steeds of Apollo," by **Robert Treat Paine** (1773-1811).

Philadelphische Zeitung, the first German paper in America, established in 1773.

"The Declaration of Independence," by **Thomas Jefferson**, issued in 1776.

A. D.	ENGLAND.	FRANCE.	GERMANY.
1700	**James Henry Leigh Hunt** (1784-1859). Poet and essayist.	**Pierre Jean de Beranger** (1780-1857). Lyric poet.	"Ueber die Religion," "Monologe," "Glaubenslehre," by **Schleiermacher** (1768-1834).
	James Sheridan Knowles (1784-1862). Poet and playwright.	**Amable Barante** (1782-1866). Historian.	"Römische Geschichte," "Griechische Heroengeschichte," "Lectures on Ancient History," by **Barthold Georg Niebuhr** (1776-1831), historian.
	Henry Kirke White (1785-1806). Poet.	**Francois Guizot** (1787-1874). Historian.	Dramas, "Der zerbrochene Krug," "Die Familie Schroffenstein," and others; and "Michael Kohlhaas," a story, by **Kleist** (1777-1811).
	John Wilson, "Christopher North" (1785-1854). Essays and poems.	**Alphonse de Lamartine** (1790-1869). Historian.	
	Thomas De Quincey (1785-1859). Essayist.		"Sigurd der Schlangentödter," "Des Zauberring," "Jahreszeiten," "Undine," and "Sintram" by **Fouque** (1777-1843), novelist and poet.
	Sir William Napier (1785-1860). Historian.		"Des Knaben Wunderhorn," a compilation of German ballads, comedies, and fairy tales, by **Brentano** (1778-1842), novelist and poet.
	George Noel Gordon, Lord Byron (1788-1824). Poet.	**Abel Francois Villemain** (1790-1870). Historian and educator.	Numerous histories by **Friedrich von Raumer** (1781-1773), historian.
	Richard Harris Barham, "Thomas Ingoldsby" (1788-1845). Poet.	**Augustin Scribe** (1791-1861). Dramatist.	"Der Wintergarten," "Die Gräfin Dolores," "Halle und Jerusalem," "Die Kronenwächter," by **Ludwig Joachim von Arnim** (1781-1831), novelist and poet.
	Mary Russell Mitford (1787-1855). Novelist and dramatist.		
	Sir William Hamilton (1788-1856). Philosopher.	**Antoine E. Genoude** (1792-1849). Historian.	"Peter Schlemihl," "Frauenliebe und- Leben," "Lebens-Lieder und- Bilder," by **Chamisso** (1781-1838), poet and naturalist.
		Victor Cousin (1792-1867). Philosopher and metaphysician.	"Correspondence of Goethe with a child," letters, by **Bettina von Arnim** (1785-1859).
	Charles Wolfe (1791-1823). Poet.		"*Le Balance*," "Menzel der Franzosenfresser," "Denkrede auf Jean Paul," by **Borne** (1786-1837).
	Henry Hart Milman (1791-1868). Historian.	**Jean Delavigne** (1793-1843). Poet and dramatist.	
	Charles Knight (1791-1873). Historian.	**Charles Paul de Kock** (1794-1871). Novelist and dramatist.	"Deutsche Grammatik," by **Jakob Grimm** (1785-1863); "Altdanische Heldenlieder," by **Wilhelm Grimm** (1786-1859); "Deutsches Wörterbuch," "Deutsche Sagen," "Kinder- und Hausmärchen," and other works, by the Brothers **Grimm** in collaboration.
	Percy Bysshe Shelley (1792-1822). Poet.		
	Captain Frederick Marryat (1792-1848). Novelist.	**Jacques N. Augustin Thierry** (1795-1856). Historian.	Ballads and romances: "Der wirten Töchterlein," "Der gute Kamerad," "Das Schloss am Meer," etc., "Gedichte und Dramen," by **Uhland** (1787-1862).
	Sir Archibald Alison (1792-1867). Historian.	**Francois Mignet** (1796-1884). Historian.	"Aus dem Leben eines Taugenichts," and poems, translations, and criticisms, by **Eichendorff** (1788-1857).
	Felicia Hemans (1793-1835). Poet.		
	Anna Jameson (1794-1860). Essayist.	**Amedee Thierry** (1797-1873). Historian.	"Die Welt als Wille und Vorstellung," "Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde," and other philosophical works, by **Schopenhauer** (1788-1860).
	George Grote (1794-1871). Historian.	**Louis Adolphe Thiers** (1797-1877). Historian.	
	Thomas Arnold (1795-1842). Histories, essays, and sermons.	**Auguste Comte** (1798-1857). Philosopher.	Fifty-four volumes of history including history of the Reformation and the "Weltgeschichte," by **Ranke** (1795-1886).
	Thomas Carlyle (1795-1881). Historian and essayist.	**Joseph Xavier Boniface Saintine** (1798-1865). "Picciola."	"Der Jesuit," "Der Jude," "Der Invalide," "Der Vogelhändler von Imst," by **Spindler** (1796-1855).
	John Keats (1795-1821). Poet.		"Gedichte" (Poems), "Lyrisches Intermezzo," "Heimkehr" and "Nordsee"; "Harzreise," "Reisebilder," "Buch der Lieder," "Romanzero," by **Heine** (1797-1856).
	Agnes Strickland (1796-1874). Historian.	**Jules Michelet** (1798-1874). Historian.	
	Samuel Lover (1797-1868). Novelist and poet.	**Honore de Balzac** (1799-1850). "Comedies of Human Life."	"Walladmor," "Schloss Avalon," "Cabanis," "Der falsche Waldemar," "Ruhe ist die erste Bürgerpflicht," by **Wilhelm Haering** (Wilibald Alexis) (1798-1871).
	Thomas Hood (1798-1845). Poet and humorist.		
		Alfred Victor Vigny (1799-1864) Novelist and poet.	"Geschichte der Deutschen," "Die Geschichte Europas," "Rübezahl," "Narcissus," "Furore," "Deutsche Litteratur," by **Wolfgang Menzel** (1798-1873).

ITALY AND SPAIN.	SCANDINAVIA AND RUSSIA.	AMERICA.
Nicolo Ugo Foscolo (1777-1827). Italian poems, etc.	**Bishop Mynster** (1775-1854). Danish theologian.	"Sylphs of the Season," "Monaldi," "Lectures on Art and Poems," by **Washington Allston** (1779-1843).
	Peter Thun Foersen (1777-1817). Danish translator of Shakespeare.	"Salmagundi" (with Irving), "The New Pilgrim's Progress," "The Dutchman's Fireside," "Westward, Ho!" "Life of Washington," "The Old Continentals," and "The Backwoodsman," by **James Kirke Paulding** (1779-1860).
	Hans Christian Oersted (1777-1851). Danish scientist.	
Juan Gallego (1777-1853). Spanish poet.	**Johan Olaf Wallin** (1779-1839). Danish national poet and divine.	
	Johan Berzelius (1779-1848). Swedish chemist.	"The Visit of St. Nicholas," by **Clement Clarke Moore** (1779-1863).
Giovanni Niccolini (1782-1861). Italian dramas.	**Adam Gottlob Oehlenschlager** (1779-1850). Danish dramatist and poet.	Alsop, Dwight, Hopkins, Trumbull, Barlow, and others were known as the "Hartford Wits."
	Esaias Tegner (1782-1846). Swedish poet.	"The Birds of America" and "The Quadrupeds of North America," by **John James Audubon** (1780-1851).
	Steen Steensen Blicher (1782-1848). Danish novelist and poet.	
Alessandro Manzoni (1784-1873). Italian novels and dramas.	**Erik Gustav Geijer** (1783-1847). Swedish historian and poet.	The first English Bible published in America was printed at Philadelphia in 1782.
	Christian Molbech (1783-1857). Danish dictionary.	"Thirty Years' View," by **Thomas Hart Benton** (1782-1858), published in 1856.
	Nikolai F. S. Grundtvig (1783-1872). Danish theologian and poet.	"Diedrich Knickerbocker's History of New York" (1809), "Sketch Book" (1819), "Bracebridge Hall" (1822), "Tales of a Traveler" (1824), "Life of Columbus" (1828), "Conquest of Granada" (1829), "Alhambra" (1832), "Tour on the Prairies" (1835), "Astoria" (1836), "Adventures of Captain Bonneville" (1837), "Oliver Goldsmith" (1849), "Wolfert's Roost" (1855), and "Life of Washington" (1855-1859), by **Washington Irving** (Geoffrey Crayon) (1783-1859).
Gabrielle Rossetti (1785-1854). Political writer.	**Julia Kristina Nyberg** (1785-1854). Swedish poet.	
	Swedish Academy founded, 1786.	
	Rasmus E. Rask (1787-1832). Danish grammarian and philologist.	
Cesare Baldo (1789-1853). Italian historian and publicist.	**Wilhelm F. Palmblad** (1788-1852). Swedish novelist and biographer.	"Champions of Freedom" and poems, by **Samuel Woodworth** (1785-1842).
	Joachim F. Schouw (1789-1852). Danish botanical geographer.	"The Pilgrim Fathers," "Passing Away," and other poems, by **John Pierpont** (1785-1866).
	Mikhail Zagoskin (1789-1852). Russian novelist and dramatist.	The Constitution of the United States, issued in 1787.
Silvio Pellico (1789-1854). Italian dramatist, poet, novelist.	**Thaddeus Bulgarin** (1789-1859). Russian novelist.	"The Idle Man," "The Buccaneers," by **Richard Henry Dana** (1787-1879).
	Bernhard S. Ingemann (1789-1862). Danish poet and novelist.	"Percy's Masque" and other poems, by **James A. Hillhouse** (1789-1841).
	Gustav Gaemelius (1789-1877). Swedish historian and novelist.	"The Spy" (1821), "The Pioneers," "The Pilot" (1823), "Last of the Mohicans," "The Prairie" (1827), "The Pathfinder" (1840), "The Deerslayer" (1841), "Red Rover," "The Water-Witch," and other novels (1841), by **James Fenimore Cooper** (1789-1851).
Gioacchino Belli (1791-1863). Italian sonnets.	**Peter Daniel Atterbom** (1790-1855). Swedish poet and literary historian.	
	Johan Borjesson (1790-1866). Swedish poet.	"New England Tale," "Redwood," "Hope Leslie," "The Linwoods," by **Catherine Maria Sedgwick** (1789-1867).
Angel de Saavedra, Duque de Rivas (1791-1865). Spanish dramatist.	**Kasimierz Brodzinski** (1791-1835). Russian poet.	
	Karl Johan Dahlgren (1791-1844). Swedish poet and novelist.	
	Adolf Ivar Arwidsson (1791-1858). Swedish poet.	"Twilight," "Fanny," and other poems, by **Fitz-Greene Halleck** (1790-1867).
Gino Capponi (1792-1876). Italian historian.	**Johan Ludvig Heiburg** (1791-1860). Danish poet.	"Moral Pieces in Prose and Verse," and many poems, by **Lydia Huntley Sigourney** (1791-1865).
	Niels M. Petersen (1791-1862). Danish historian and philologist.	"Home, Sweet Home" (1813), written by **John Howard Payne** (1792-1852). This is a song in "Clari; or, The Maid of Milan."
	H. A. Bjerregaard (1792-1842). Norwegian poet and dramatist.	
Cecilia Bohl von Faber (Fernan Caballero) (1797-1877). Spanish novels.	**Erik Johan Stagnelius** (1793-1823). Swedish poet and dramatist.	Thirty-six stories and several schoolbooks, by **Samuel Griswold Goodrich** (Peter Parley) (1793-1863).
	Jan Kollar (1793-1852). Czech poet.	"Principles of Political Economy," "The Credit System," "Principles of Social Science," by **Henry Charles Carey** (1793-1879).
	Alexander Fredro (1793-1871). Polish playwright.	Poems by **William Cullen Bryant** (1794-1878).
Giacomo Leopardi (1798-1837). Italian poet.	**Karl Jonas Ludwig Almqvist** (1793-1866). Swedish novelist.	"The Culprit Fay," "The American Flag," and other poems, by **Joseph Rodman Drake** (1795-1820).
	Anders Fryxell (1795-1881). Swedish historian.	Poems by **James Gates Percival** (1795-1856).
	Bernhard von Beskow (1796-1868). Swedish dramatist and poet.	"Swallow Barn," "Horseshoe Robinson," "Rob of the Bowl," "Quod Libet," and other works, by **John P. Kennedy** (1795-1870).
Serafin Estebanez Calderon (1799-1867). Spanish essayist.	**Christian Winther** (1796-1876). Danish pastoral poet.	"Ferdinand and Isabella" (1838), "The Conquest of Mexico" (1843), "The Conquest of Peru" (1847), "Philip II. of Spain" (1855-1858), and other works, by **William H. Prescott** (1796-1859).
	Adam Mickiewicz (1798-1855). Polish poet.	
	Henrik Hertz (1798-1870). Danish poet and dramatist.	"History of New England," in five volumes, by **John Gorham Palfrey** (1796-1881).
Terenzio Mamiani (1799-1885). Italian poet.	**Karl August Nicander** (1799-1839). Swedish poet.	"Farewell Address," by **Washington**, in 1796.
	Alexander Pushkin or **Pouchkine** (1799-1837.) Russian poet.	"Law of Business," "Deus Homo," "Infinite and Finite," and "Religion and Philosophy of Swedenborg," by **Theophilus Parsons** (1797-1882).

A. D.	ENGLAND.	FRANCE.	GERMANY.
1800	**Thomas Babington Macaulay** (1800-1859). Historian, essayist, and poet. **George Payne Rainsford James** (1801-1860). Novelist. **Hugh Miller** (1802-1856). Geologist. **Harriet Martineau** (1802-1876). Essays, histories, and novels. **Sir Edward Bulwer Lytton** (1803-1873). Novelist. **Francis Mahony,** "Father Prout" (1804-1866). Poet. **Benjamin Disraeli,** Lord Beaconsfield (1804-1881). Novelist. **Charles Lever** (1806-1872). Novelist. **John Stuart Mill** (1806-1873). Philosopher and political economist. **Elizabeth Barrett Browning** (1806-1861). Poet. **Samuel Warren** (1807-1877). Novelist. **Charles Darwin** (1809-1882). Scientist. **Alexander William Kinglake** (1809-1891). Historian. **Alfred Tennyson,** first Lord Tennyson (1809-1892). Poet. **Mary Cowden Clarke** (1809-1898). "Concordance to Shakespeare." Poet. **Martin Farquhar Tupper** (1810-1889). Poet. **William Makepeace Thackeray** (1811-1863). Novelist. **Charles Dickens** (1812-1870). Novelist. **Robert Browning** (1812-1889). Poet. **Samuel Smiles** (1812-1904). Miscellaneous writer. **Arthur Helps** (1813-1875). Essayist and historian. **Charles Reade** (1814-1884). Novelist. **Anthony Trollope** (1815-1882). Novelist. **George Rawlinson** (1812-1902). Historian, Orientalist, and theologian. **Charlotte Bronte** (1816-1855). "Jane Eyre" and other novels. **George Henry Lewes** (1817-1878). Essayist and philosopher. **James Anthony Froude** (1818-1894). Historian and biographer. **Charles Kingsley** (1819-1875). Novelist and poet. **George Eliot** (Marian Evans Cross) (1819-1880). Novels and poems. **John Ruskin** (1819-1900). Art critic and writer. **John Tyndall** (1820-1893). Scientist. **Herbert Spencer** (1820-1903). Philosopher and essayist. **Henry Thomas Buckle** (1821-1862). History of civilization in England. **Matthew Arnold** (1822-1888). Poems, critiques, and essays. **Friedrich Max Muller** (1823-1900). Essays on philology and religion. **Edward A. Freeman** (1823-1892). Histories. **Thomas Hughes** (1823-1896) Tom Brown series of novels, etc. **William Wilkie Collins** (1824-1889). Novels. **George MacDonald** (1824-1905). Novelist and poet.	**Frederic Bastiat** (1801-1850). Political economist. **Victor Hugo** (1802-1885). "Les Misérables," "Toilers of the Sea," "Nôtre Dame," and other novels. **Alexandre Dumas pere** (1803-1870). "Monte Cristo," "Three Musketeers," and other novels. **Prosper Merimee** (1803-1870). Historian, literary critic, archaeologist, and novelist. **Edgar Quinet** (1803-1875). Historian, philosopher, and poet. **Marie Joseph Sue** (better known as Eugene) (1804-1857). "Mysteries of Paris," "Wandering Jew," etc. **Charles Augustin Sainte-Beuve** (1804-1869). Literary criticisms. **Jules Gabriel Janin** (1804-1874). Novels and critiques. **Mme. Dudevant** (George Sand) (1804-1876). Novelist and playwright. **Alexis Charles Henri de Tocqueville** (1805-1859). "Democracy in America." **Alphonse Karr** (1808-1891). Novels. **Francisque Michel** (1809-1887). Essays. **Alfred de Musset** (1810-1857). Novels, dramas, and poems. **Charles Forbes R. Montalambert** (1810-1870). Historian, orator, and publicist. **Bon Louis Henri Martin** (1810-1883). French history. **Theophile Gautier** (1811-1872). Novels, poems, and criticisms. **Leonard Sylvain Jules Sandeau** (1811-1883). Novelist and dramatist. **Jean Victor Duruy** (1811-1894). Histories of Rome and of modern times. **Louis Blanc** (1811-1882). Essays. **Elie Bertrand Berthet** (1815-). Novels. **Eugene Labiche** (1815-1888). Dramas. **Arsene Houssaye** (1815-1896). Novels. **Paul Henri Corentin Feval** (1817-1887). Novelist. **Charles Marie Leconte de Lisle** (1818-1894). Poems. **Emile Auguste Deschanel** (1819-1904). Essays. **Guillaume Victor Emile Angier** (1820-1889). Dramas. **Gustave Flaubert** (1821-1880). Novels. **Octave Feuillet** (1821-1890). Novels and dramas. **Emil Erckmann** (1822-1899). Novels. **Charles Baudelaire** (1821-1867). Romanticist. **Edmond de Goncourt** (1822-1896). Novels. **Henri Lavedan** (1822-1892). Novels and dramas. **Theodore de Banville** (1823-1891). Poems. **Joseph Ernest Renan** (1823-1892). "Life of Christ," etc. **Alexandre Dumas fils** (1824-1895). Novels. **M. Alexandre Chatrian** (1826-1890). Novels in collaboration with Erckmann. **Charles Loyson, Pere Hyacinthe** (1827-). Sermons and pulpit orations. **Hippolyte Adolphe Taine** (1828-1893). "History of English Literature," etc.	"Pfefferrösel," "Hinko," "Die Günstlinge," "Der Glöckner von Notre Dame," "Die Frau in Weiss" (Wilkie Collins, Woman in White), "Die Waise von Lowood" (Jane Eyre), by **Charlotte Birch-Pfeiffer** (1800-1868). "Märchenalmanach," "Der Mann im Monde," "Lichtenstein," by **Hauff** (1802-1827). "Nibelungenlied," "Parzival," "Reinecke Fuchs," "Edda," and modifications, etc., by **Simrock** (1802-1876). "Holland in 1831-1832," "Latest Literature," by **Wienbarg** (1803-1872). "Geschichte der deutschen Dichtung," "Shakspere," in 4 vols., "Händel und Shakspere," "Händel's Oratorientexte," by **Gervinus** (1805-1871). "Uhlrich," "Zwei Frauen," by **Ida Hahn-Hahn** (1805-1880). "Volkslieder aus Krain," "Robin Hood," "Der letzte Ritter," "Spaziergänge," by **Anton Alexander von Auersperg** (Anastasius Grün) (1806-1876). "Das junge Europa," "Das Glück," "Der Prätendent," "Gottsched und Gellert," "Graf Essex," "Montrose," by **Laube** (1806-1884). "Geschichte der hellenischen Dichtkunst," "Ueber Shakspere's dramatische Kunst," "Das Grundprincip der Philosophie," "System der Logik," "Gott und die Natur," "Gott und der Mensch," by **Ulrici** (1806-1884). "Griseldis," "Der Adept," "Camoens," "Der Sohn der Wildniss" (Ingomar the Barbarian), "Der Fechter von Ravenna," "Wildfeuer," by **Karl von Halm** (1809-1882). Translations of Longfellow, Shakespeare, and Burns, "Ca ira," "Löwenritt," "Prinz Eugen," "Der Blume Rache," by **Freiligrath** (1810-1876). "Wally, die Zweiflerin," "Richard Savage," "Zopf und Schwert," "Das Urbild des Tartüffe," "Die Ritter vom Geiste," "Der Zauberer vom Rom," by **Gutzkow** (1811-1878). "Der Stellvertreter," "Klementine," "Jenny," "Nella," "Stella," "Für und wieder die Frauen," "L'Arrabbiata," "Kinder der Welt," "Im Paradeise," "Ueber allen Gipfeln," "Thekla," by **Fanny Lewald** (1811-1889). "Das Judentum und die neueste Litteratur," "Spinoza," "Dichter und Kaufmann," "Schwarzwälder Dorfgeschichten" (Village Tales), "Auf der Höhe," by **Auerbach** (1812-1882). Librettos of his operas by **Wagner** (1813-1883). "Friedrich der Grosse und sein Hof," etc., by **Klara Mundt** (Luise Muhlbach) (1814-1873). "Gedichte," "Die Amazone," "Das Haus des Barneveldt," by **Dingelstedt** (1814-1881). "Griechische Geschichte," "Attische Studien," "Altertum und Gegenwart," by **Ernst Curtius** (1814-1896). "Gedichte," "Otto der Schütz," "Die Altchristliche Kunst," "Nimrod," "Tanagra," by **Kinkel** (1815-1882). "Gedichte," "Juniuslieder," "Gedichte und Gedenkblatter," "Brunhild," by **Geibel** (1815-1884). "Soll und Haben," "Die verlorene Handschrift," "Die Technik des Dramas," "Die Ahnen," "Bilder aus des deutschen Vergangenheit," by **Freytag** (1816-1895). "Metaphysik," "Logik," "Mikrokosmus," "Geschichte der Aesthetik in Deutschland," by **Lotze** (1817-1881). "Liederbuch dreier Freunde," "Volkbuch," "Immensee," "Auf der Universität," "Die Regentrude," by **Storm** (1817-1888). "Die Kinder Gottes," "Verirrt und Erlöst," "John Milton und seine zeit," "Götter und Götzen," "Sieg der Liebe," by **Ring** (1817-1901). "De Collegiis et Sadaliciis Romanorum," "Die unteritalischen Dialekte," "Römische Geschichte," "Corpus Inscriptionum Latinarum," by **Mommsen** (1817-1903).

ITALY, SPAIN, AND PORTUGAL.

Manuel Breton de los Herreros (1800-1873). Spanish dramatist, over 150 dramas.

Antonio Castilho (1800-1875). Portuguese poet.

Vincenzo Gioberti (1801-1852). Italian controversialist.

Tommaseo Niccolo (1802-1874). Italian author.

Giuseppe Mazzini (1805-1872). Italian political author.

Cesare Cantu (1804-1895). Italian historian and novelist.

Pier Angelo Fiorentino (1806-1864). Italian novelist.

Michele Amari (1806-1889). Italian historian.

Patricio de la Escosura (1807-1878). Spanish novelist, poet, and dramatist.

Mariano Jose de Larra (1809-1837). Spanish satirist and dramatist.

Giuseppe Giusti (1809-1850). Italian satirist.

Juan Donosa Cortes (1809-1853). Spanish essayist.

Don Jose de Espronceda (1810-1842). Spanish poet.

Jaime Balmes (1810-1848). Spanish critic.

Antonio Carlo Napoleone Gallenga (1810-1895). Italian historian.

Luigi Carlo Farini (1812-1866). Italian historian.

Aleardo Aleardi (1812-1878), Italian poet.

Paolo Emiliani Giudici (1812-1872). Italian literature and history.

Giuseppe Ferrari (1812-1876). Italian philosopher and historian.

Giovanni Prati (1815-1884). Italian verse.

Ramon de Campoamor (1817-1901). Spanish poet and philosopher.

Jose Zorrilla y Moral (1817-1893). Spanish lyric poet.

Giacomo Zanelli (1820-1889). Italian poems.

SCANDINAVIA AND RUSSIA.

Emil Aarestrup (1800-1856). Danish poet.

Per Wieselgren (1800-1877). Swedish literary historian and poet.

Fredrika Bremer (1801-1865). Swedish novelist.

Niels Henrik Abel (1802-1829). Norwegian mathematician.

Gustaf Henrik Mellin (1803-1876). Swedish novelist.

Johann Ludvig Runeberg (1804-1877). Swedish poet.

Maurycy Mochnachi (1804-1835). Polish critic.

Michal Grabowski (1805-1863). Polish critic.

Adam Gurowski (1805-1866). Polish poet.

Hans Christian Andersen (1805-1875). Danish fairy tales.

Johan Sebastian Cammermeyer Welhaven (1807-1873). Norwegian poet.

Karl Vilhelm Bottiger (1807-1878). Swedish poet.

Henrik Arnold Wergeland (1808-1845). Norwegian poet.

Nikolai Gogol (1809-1852). Russian novelist.

Juliusz Slowacki (1809-1849). Polish poet of note.

Frederik Paludan-Muller (1809-1876). Danish dramatic poet.

University of Christiania founded, 1811.

Gothic Society (Swedish) formed, 1811.

Karl Ferdinand Allen (1811-1871). Danish historian.

Alexander Hertzen (1812-1870). Russian novelist and sociologist.

Zygmunt Krasinski (1812-1859). Distinguished Polish poet.

UNITED STATES AND CANADA.

"History of the United States to 1789," by **George Bancroft** (1800-1891). This work appeared between the years 1834 and 1884.

Lyrics, including "Woodman, Spare that Tree," "When We Were Boys Together," by **George P. Morris** (1802-1864).

Catherine Parr Traill (1802-1899). Canadian naturalist author.

"Nature and the Supernatural," "Moral Use of Dark Things," by **Horace Bushnell** (1802-1876).

"Essays" (first and second series), (1841 and 1844), "Representative Men" (1850), "English Traits" (1856), "Conduct of Life," and several poems, by **Ralph Waldo Emerson** (1803-1882).

Juvenile Tales, such as the Rollo Books, etc., by **Jacob Abbott** (1803-1879).

Poems and numerous tales, by **William Gilmore Simms** (1806-1870).

"Compendious Dictionary of the English Language," by **Noah Webster** (1758-1843) published in 1806.

"Outre-Mer" (1835), "Hyperion" (1839), "Voices of the Night" (1839), "Wreck of the *Hesperus*" (1841), "Spanish Student" (1843), "Evangeline" (1847), "Golden Legend" (1851), "Hiawatha" (1855), "Miles Standish" (1858), and other poems, by **Henry Wadsworth Longfellow** (1807-1882).

"History of the United States to 1821," by **Richard Hildreth** (1807-1865).

Prose and verse, by **Nathaniel P. Willis** (1807-1867).

"Mogg Megone" (1836), "Voices of Freedom" (1841), "Songs of Labor" (1848), "Old Portraits" (1850), "Ballads," "Home Ballads," "In War Time" (1863), "Snow-Bound" (1865), and other poems, by **John Greenleaf Whittier** (1807-1892).

"Amir Khan and Other Poems," by **Lucretia Maria Davidson** (1808-1825).

"My country, 'tis of thee" and "The morning light is breaking," by **Samuel Francis Smith** (1808-1895).

"Earlier Poems" (1830-1836), "Old Ironsides," "The Chambered Nautilus" (1858), "The One-Hoss Shay" (1858), "Autocrat of the Breakfast Table" (1858), "Professor at the Breakfast Table" (1860), "Elsie Venner" (1861), "Poet at the Breakfast Table" (1872), by **Oliver Wendell Holmes** (1809-1894).

Edgar Allan Poe (1809-1849). Stories and poems.

Henry James (1811-1882). Essayist and philosopher.

John William Draper (1811-1882). Historian.

James McCosh (1811-1894). Essayist and philosopher.

Harriet Beecher Stowe (1812-1896). Novelist.

George Ticknor Curtis (1812-1894). Historian.

John Lothrop Motley (1814-1877). Historian.

"The Star-Spangled Banner," by **Francis Scott Key** (1779-1843), written in 1814.

The North American Review, founded in Boston, in May, 1815; bi-monthly until November, 1818, quarterly to 1877; bi-monthly in 1877-1878; monthly 1879-1894.

Richard Henry Dana, Jr. (1815-1882). Travels and adventure.

John G. Saxe (1816-1887). Poet.

Charles Heavysege (1816-1876). Canadian poet.

Samuel Austin Allibone (1816-1889). Bibliographer.

Bryant's "Thanatopsis," published in *The North American Review* in 1817.

"Dictionary of the English Language," by **Joseph Emerson Worcester** (1784-1865), published in 1817.

Henry D. Thoreau (1817-1862). Naturalist.

James Thomas Fields (1817-1881). Essays and poems.

A. D.	ENGLAND.	FRANCE.	GERMANY.
1800	**Thomas Henry Huxley** (1825-1895). Scientific works.	**Edmond Francois V. About** (1828-1885). Novels.	"Geschichte der Philosophie," "Römische Geschichte," "Metaphysik," by **Albert Schwegler** (1819-1857).
		Jules Verne (1828-1905). "Twenty Thousand Leagues Under the Sea," "Round the World in Eighty Days," etc.	"Gedichte," "Der grüne Heinrich," "Die Leute von Seldwyla," "Romeo und Juliet auf dem Dorfe," "Der Schmied seines Glücks," "Sieben Legenden," by **Gottfried Keller** (1819-1890).
	Dinah Maria Mulock (Mrs. Craik) (1826-1887). "John Halifax, Gentleman," etc.		"Poetische Ukranie." "Lieder de Mirza-Schaffy," translations of Shakespeare, by **Friedrich Martin von Bodenstedt** (1819-1892).
		Adolphe Belot (1829-1890). Novels and dramas.	"Gedichte," "Balladen," "Vor dem Sturm," "Der Stechlin," "Meine Kinderjahre," "Von Zwanzig bis Dreissig," by **Theodor Fontane** (1819-1898).
	Richard D. Blackmore (1826-1900). "Lorna Doone" and other novels.	**Charles Victor Cherbuliez** (1829-1899). Novels.	"Iridische Phantasien," "Schaum," "Demiurgos," "Die Nibelungen," by **Wilhelm Jordan** (1819-1903).
		Jules de Goncourt (1830-1870). Novels.	"Völkerwanderung," "Vaterlandische Balladen," "Die Walkyren," "Neue Gedichte," "Meine Lebensreise," by **Lingg** (1820-).
			"Deborah" (Leah the Forsaken), "Der Sonnenwendhof," "Die lustigen Weiber von Windsor," "Die Königin von Saba," by **Salomon Hermann Mosenthal** (1821-1877).
	Dante Gabriel Rossetti (1828-1882). Poems.	**Victorien B. Sardou** (1831-1908). Dramas.	
		Antoine Gustav Droz (1832-1895). Novels.	"Das Lied vom neuen deutschen Reich," "Amaranth," "Odilo," "Hermann Stark," "Philippine Welser," by **Oskar von Redwitz** (1823-1891).
	Samuel R. Gardiner (1829-1902). Histories.		"Gedichte," "Carlo Zeno," "Pitt und Fox," "German National Literature of the Nineteenth Century," "Im Banne des schwarzen Adlers," "Portraits und Studien," by **Rudolph von Gottschall** (1823-).
		Andre Theuriet (1833-). Poems and novels.	"Geschichte der neuern Philosophie," "Kants Leben und die Grundlagen seiner Lehre," "Schiller als Philosoph," "Goethe-Schriften," by **Ernst Kuno Berthold Fischer** (1824-1907).
	Jean Ingelow (1830-1897). Poems.	**Ferdinand Fabre** (1833-). Poems and novels.	
		Ludovic Halevy (1834-1908). Dramas.	"Die zwölf Apostel," "Goldelse," "Die zweite Frau," "Reichsgräfin Gisela," "Heideprinzesschen," by **Marlitt** (Eugenia John) (1825-1887).
	Justin McCarthy (1830-). Histories and novels.		"System der Logik," "Grundriss der Geschichte der Philosophie," by **Friedrich Ueberweg** (1826-1871).
		Paul B. du Chaillu (1835-1903). Travels and geographical explorations.	"Der Trompeter von Säckingen," "Ekkehard," "Gaudeamus," by **Joseph Victor von Scheffel** (1826-1886).
	Edward Robert, Earl of Lytton, "Owen Meredith" (1831-1891). Poems and biography.		"Problematische Naturen," "Durch Nacht zum Licht," "Die von Hohenstein," "Sturmflut," "Der neue Pharao," "Freigeboren," by **Friedrich Spielhagen** (1829-).
		Mme. Juliette Lamber Adam (1836-). Journalist.	"Francesca da Rimini," "Die Bruder," "Urica," "Das Buch der Freundschaft," by **Johann Ludwig Paul Heyse** (1830-).
		Leon Louis Lucian de Rosny (1837-). Orientalist.	
	Edmund H. Yates (1831-1894). Novels.		"Erzählungen," "Dorf- und Schlossgeschichten," "Ein kleiner Roman," "Miterlebtes," "Gesammelte Schriften," by **Baroness Marie von Ebner-Eschenbach** (1830-).
		Louis Marie Ernest Daudet (1837-). Histories and novels.	
	Edwin Arnold (1832-1904). Poems.		"Ein Frühling," "Der heilige Born," "Der hunger Pastor," "Abu Telfan," by **Wilhelm Raabe** (1831-).
		Rene Francois Sully-Prudhomme (1839-1907). Poet.	"Die Könige der Germanen," "Poems, Ballads, and Songs," "Odhins Trost," "Der Kampf um Rom," by **Felix Dahn** (1834-).
	Philip G. Hamerton (1834-1894). Essays.		"Der Aufstand in Gent unter Karl V.," "Das Vermächtnis Kains," by **Sacher-Masoch** (1835-1895).
		Theodule Armand Ribot (1839-). Psychology.	
	William Morris (1834-1896). Poems.		"Regum Egyptorum," "Aegypten in Wort und Bild," "Uarda," "Homo Sum," "Die Schwestern," "Eine ägyptische Königstochter," "Der Kaiser," "Serapis," by **Georg Moritz Ebers** (1837-1898).
		Marie Therese Blanc, "Th. Bentzon" (1840-1907). Journalist and novelist.	"Adams Söhne," "Hermann Ifinger," "Der Dornenweg," "Schleichendes Gift," "Feuerblumen," "Villa Maria," "Der Graf von Hammerstein," "Die Maler," "Jugendliebe," "Nathalie," by **Wilbrandt** (1837-).
	George du Maurier (1834-1896). "Peter Ibbetsen," "Trilby," and other novels.	**Jules Claretie** (1840-). Dramatist.	

ITALY, SPAIN, AND PORTUGAL.

Joao de Lemos (1819-1889). Portuguese poet.

Pietro Cavallotti (1824-1898). Italian dramatist.

Camillo Castello Branco (1825-1890). Portuguese novelist.

Alessandro Arnaboldi (1827-1898). Italian lyric poet.

Juan Valera (1824-1905). Spanish novelist.

Pasquale Villari (1827-). Italian historian.

Lopez de Ayala (1828-1879). Spanish dramatist.

Ruggiero Bonghi (1828-1895). Italian essayist.

Antonio Canovas del Castillo (1828-1897). Spanish historian.

Manuel Tomayo y Baus (1829-1898). Spanish dramatist.

Joao de Deus (1830-1895). Portuguese lyric poet.

Luigi Cossa (1831-1896). Italian political economist.

Thomaz Rebeiro (1831-1901). Portuguese poet

Pedro Antonio de Alarcon (1833-1891). Spanish novelist.

Adolfo Bartoli (1833-1894). Italian literary historian.

Jose Echegaray (1833-). Spanish dramatist.

Gaspar Nunez de Arce (about 1834-1903). Spanish poet and dramatist, the "Spanish Tennyson."

Jose Maria de Pereda (1834-1906). Spanish novelist.

Alessandro d'Ancona (1835-). Italian literary historian.

Domenico Comparetti (1835-). Italian philologist.

Gustavo Adolfo Becquer (1836-1870). Spanish poet.

Giosue Carducci (1836-1907). Italian poet.

Cesare Lombroso (1836-1909). Italian criminologist.

SCANDINAVIA AND RUSSIA.

Aleksey Kolstoff (1808-1842). Russian lyric poet.

Solomon Drier (1813-1842). Danish zoölogist.

Soren A. Kierkgaard (1813-1855). Danish philosopher.

Camilla Collett (1813-1895). Norwegian novelist.

Ivar Andreas Aasen (1813-1896). Norwegian philologist, botanist, and poet.

Mikhail Lermontoff (1814-1841). Russian poet.

Nicholas Ivanovitch Kostomaroff (1817-1885). Russian historian.

Ivan Sergeyevitch Turgueniev (1818-1883). Russian novelist,

Jens Christian Hostrup (1818-1892). Danish poet and dramatist.

Zachris Topelius (1818-1898). Finnish poet and novelist.

Meyer Aaron Goldschmidt (1819-1887). Danish publicist and novelist.

Magdalena Thoresen (1819-1903). Danish novelist.

Feodor Mikhailovitch Dostoyevski (1821-1881). Russian novelist.

Karl Andersen (1828-1883). Danish lyric and epic poet.

Henrik Ibsen (1828-1906). Norwegian dramatist, poet, and essayist.

Count Lyeff or Lyoff (Leo) Tolstoy (1828-). Russian novelist, social reformer, and religious mystic.

Viktor Rydberg (1829-1895). Swedish historian and novelist.

Bjornstjerne Bjornson (1832-1910). Norwegian novelist, essayist, and dramatist.

Jonas Lie (1833-1908). Danish sea stories.

UNITED STATES AND CANADA.

William Kirby (1817-1906). Canadian author.

John Bigelow (1817-). Editor.

Josiah Gilbert Holland (1819-1881). Novelist, essayist, and poet.

Julia Ward Howe (1819-). Essays and poems.

Edwin Percy Whipple (1819-1886). Essayist.

James Russell Lowell (1819-1891). Poet.

Walt Whitman (1819-1892). Poet.

William Kingsford (1819-1898). Canadian author.

John Mercier McMullen (1820-). Canadian historian.

Thomas Buchanan Read (1822-1872). Poet.

Richard Grant White (1822-1885). Essayist.

William Taylor Adams, "Oliver Optic" (1822-1897). Juvenile writer.

James Parton (1822-1891). Biographer.

Donald G. Mitchell, "Ik Marvel" (1822-1908). Essayist.

Edward Everett Hale (1822-1909). Essayist.

George H. Boker (1823-1890). Poet.

Francis Parkman (1823-1893). Historian.

Thomas Wentworth Higginson (1823-). Historian and essayist.

Goldwin Smith (1823-1910). Canadian essayist.

George William Curtis (1824-1892). Essayist, orator, and journalist.

John Foster Kirk (1824-1904). Historian.

Adeline D. T. Whitney (1824-1906). Novelist and poet.

Bayard Taylor (1825-1878). Travels, essays, and poems.

Richard Henry Stoddard (1825-1903). Poet and critic.

Stephen Collins Foster (1826-1864). Songs and poems.

The Youths' Companion, established in 1827.

Rose Terry Cooke (1827-1892). Poet.

Lew Wallace (1827-1905). Novelist.

Charles Dudley Warner (1829-1900). Essayist.

Godey's Lady's Book, established in Philadelphia, in 1830.

Daniel Webster's reply to Hayne, in 1830.

Mary Virginia Terhune, "Marion Harland" (1830-). Stories.

John Esten Cooke (1830-1886). Novels and essays.

Paul Hamilton Hayne (1831-1886). Essays.

Justin Winsor (1831-1897). Historian.

Louisa May Alcott (1832-1888). Stories.

David R. Locke, "Petroleum V. Nasby" (1833-1888). Humorist.

Edmund Clarence Stedman (1833-1908). Poet and literary essayist.

Frank R. Stockton (1834-1902). Stories and novels.

Alexander Muir (1834-). Canadian poet.

The *Congressional Globe* (the forerunner of the *Congressional Record*), established in 1834.

The New York *Herald*, established in 1835.

Harriet Prescott Spofford (1835-). Novels.

Moses Coit Tyler (1835-1900). Literary historian.

Samuel L. Clemens, "Mark Twain" (1835-1910). Humorist.

Lyman Abbott (1835-). Sermons and essays.

Thomas Bailey Aldrich (1836-1907). Novels and poems.

John Burroughs (1837-). Naturalist.

A. D.	ENGLAND.	FRANCE.	GERMANY.
1800	**George Meredith** (1828-1909). Novels and poems.	**Alphonse Daudet** (1840-1897). Poems, novels, and dramas.	"Die braune Erica," "Eddystone," "In der Fremde," "Der Schwarzwald," "Vom Morgen zum Abend," "Gesammelte Gedichte," by **Jensen** (1837-).
	John Richard Green (1837-1883). "History of the English People," "The Making of England."	**Emile Zola** (1840-1902). Novels.	
	Algernon Charles Swinburne (1837-1909). "Atalanta in Calydon," "Poems and Ballads," "Bothwell," "Mary Stuart," "Locrine," etc.	**Francois Edouard J. Coppee** (1842-1908). Poems and dramas.	"Herr und Frau Bewer," "Spitzen" (Lace), "Die Erste." "Der Abend," 60 vols. of works, by **Paul Lindau** (1839-).
		Mme. Alice Durand, "Henry Gréville" (1842-1902). Novels.	"Meineidbauer," "Kreuzelschreiber," "Gewissenswurm," "Der Schandfleck," "Der Sternsteinhof," by **Ludwig Anzengruber** (1839-1889).
	Walter Besant (1838-1901). "All Sorts and Conditions of Men," "Fifty Years Ago," etc.	**Paul Verlaine** (1844-1896). Poems.	"Buchholzens in Italien," "Die Familie Buchholz," and others of the Buchholz series, by **Stinde** (1841-1905).
		Anatole France, Jacques Anatole Thibault (1844-). Poems and essays.	"Shakespeare's Romeo and Juliet," "Philosophy of the Unconscious," by **Karl Robert Eduard Hartmann** (1842-1906).
	John Morley (1838-). "English Men of Letters," "Life of Gladstone."	**Emile Faguet** (1847-). Critic and essayist.	"Zither und Hackbrett," "Volksleben in Steiermark," "Die Schriften des Waldschulmeisters" (The Writings of the Forest Schoolmaster), "Jakob der Letzte," "Peter Mayr," by **Peter Kettenfeier Rosegger** (1843-).
	James Bryce (1838-). "The Holy Roman Empire," "The American Commonwealth."	**Joris Karl Huysmans** (1848-). Novels.	
		Georges Ohnet (1848-). Novels.	
	William E. H. Lecky (1838-1903). Histories of Europe and England.	**Ferdinand Brunetiere** (1849-1906). Critic.	
		Countess de Martel de Janville, "Gyp" (1850-). Novels in dialogue form.	"High Life," "Ein Manuskript," "Die Waffen nieder," by **Bertha von Suttner** (1843-).
	Thomas Hardy (1840-). "Far from the Madding Crowd," "Tess of the D'Urbervilles," and other novels.		"Schach der Königen," "Pariser Silhouetten," "Die Gespenster von Varzin," "Der Besuch im Carcer," "Die Claudier," "Prusias," "Pia," "Nero," by **Eckstein** (1845-1900).
	William Black (1841-1898). "In Silk Attire," "A Daughter of Heth," "A Princess of Thule," "In Far Lochaber," etc.	**Henri Rene A. G. Maupassant** (1850-1893). Novels and short stories.	"Lieder und Gesänge," "Dichtungen und Balladen" ("The Witches' Song"), "Der Meister von Tanagra," "Der Astronom," "Das edle Blut," "Franzeska von Rimini," by **Wildenbruch** (1847-).
		Louis M. J. Viaud, "Pierre Loti" (1850-1907). Novels, travels, etc.	
	Robert Williams Buchanan (1841-1901). "Alone in London," "The Heir of Linne."	**Paul Bourget** (1852-). Novelist and critic.	
		Jules Lemaitre (1853-). Playwright and critic.	"Aus Halb-Asien," "Von Don zur Donau," "Die Juden von Barnow," "Tragische Novellen," by **Karl Emil Franzos** (1848-1904).
		Joseph Henry Rosny (1856-). Novels.	
	Robert Louis Balfour Stevenson (1850-1894). "The Strange Case of Dr. Jekyll and Mr. Hyde," "Master of Ballantrae," "Child's Garden of Verses," etc.	**Edouard Rod** (1857-1910). Novels.	"Ehre," "Unter uns," "Gloria Victis," "Boris Lensky," by **Lola Kirschner** (1854-).
		Paul Margueritte (1860-). Novels.	"Die beiden Genossen," "Sonderbare Schwärmer," "Drei Weiber," "Der Sohn der Frau," "Die gute Tochter," by **Kretzer** (1854-).
	Henry Rider Haggard (1856-). "King Solomon's Mines," "She," etc.	**Maurice Barres** (1862-). Journalist.	
		Marcel Prevost (1862-). Novels.	
	Rudyard Kipling (1865-). "Plain Tales from the Hills," "Soldiers Three," "Barrack-room Ballads," and numerous poems and stories.	**Henri de Regnier** (1864-). Poems.	"Die Ehre," "Frau Sorge" (Dame Care), "Der Katzensteg" (Regina), "Sodoms Ende," "Heimat" (Magda), "Es lebe das Leben" (The Joy of Living), by **Hermann Sudermann** (1857-).
		Edmond Rostand (1868-). Dramas.	

ITALY, SPAIN, AND PORTUGAL.

Giovanni Verga (1840-). Italian novelist.

Fernando Caldeira (1841-1894). Portuguese comedy.

Anthero de Quental (1842-1891). Portuguese sonnets.

Eca de Queiroz (1843-1900). Portuguese novelist.

Benito Perez Galdos (1845-). Spanish novelist and dramatist.

Olindo Guerrini, "Lorenzo Stecchetti" (1845-). Poet and miscellaneous writer.

Edmondo de Amicis (1846-1908). Italian writer of travels.

Salvatore Farini (1846-). Italian novelist.

Gervasio Lobato (1850-1895). Portuguese dramatist.

Emilia Pardo Bazan (1851-). Spanish author.

Leopoldo Alas (1852-). Spanish critic.

Armando Valdes (1853-). Spanish novelist.

Marcelino Menendez y Pelayo (1856-). Spanish historian.

Gabriele d' Annunzio (1864-). Italian poet and novelist.

Ada Negri (1870-). Italian lyric poet.

SCANDINAVIA AND RUSSIA.

Vitezslav Halek (1835-1874). Bohemian lyric poet.

Adam Astryk (1838-1897). Polish lyric poet.

Georg Morris Cohen Brandes (1842-). Danish writer on esthetics and history of literature.

Holger Drachmann (1846-1908). Danish poet, dramatist, novelist.

Henryk Sienkiewicz (1846-). Polish novelist.

Svatopluk Cech (1846-). Czech poet.

Alexander Kjelland (1849-). Danish novelist.

August Strindberg (1849-). Swedish novelist and dramatist.

Karl Adolf Gjellerup (1857-). Danish novelist and poet.

Anton Tchekhov (1860-1904). Russian novelist.

Arne Christiansen (1861-). Danish dramatist.

UNITED STATES AND CANADA.

John Reade (1837-). Canadian author.

William Dean Howells (1837-). Novelist and essayist.

Edward Eggleston (1837-1902). Novelist.

Henry Adams (1838-). History and biography.

Edward Payson Roe (1838-1888). Novelist.

Mary Abigail Dodge, "Gail Hamilton" (1838-1896). Essays.

Mary Mapes Dodge (1838-1905). Stories.

Graeme Mercer Adam (1839-). Canadian editor, author, publisher.

Francis Bret Harte (1839-1902). Short stories and poems.

Louis Honore Frechette (1839-1908). Canadian dramatist.

James Schouler (1839-). Historian and legal writer.

Palmer Cox (1840-). Canadian author-artist.

Joaquin Miller, formerly Cincinnatus Heine Miller (1841-). Poet.

Benjamin Sulte (1841-). Canadian historian.

James Hannay (1842-). Canadian historian.

Sidney Lanier (1842-1881). Poems and essays.

John Habberton (1842-). Novelist.

John Fiske (1842-1901). Historian and essayist.

Henry James (1843-). Novelist.

George W. Cable (1844-). Novelist.

Elizabeth Stuart Phelps Ward (1844-). Novelist.

Will Carleton (1845-). Farm and city ballads.

Julian Hawthorne (1846-). Novels.

Arthur S. Hardy (1847-). Novels.

Edgar Fawcett (1847-1904). Novels and poems.

Constance Fenimore Woolson (1848-1894). Novels.

Joel Chandler Harris (1848-1908). "Uncle Remus" stories, etc.

Sarah Orne Jewett (1849-1909). "Deephaven," and other novels and short stories.

Frances Hodgson Burnett (1849-). "Little Lord Fauntleroy," and other novels and short stories.

Henry Cabot Lodge (1850-). Histories and biographies.

Edward Bellamy (1850-1898). Journalist and economist. "Looking Backward."

Mary Noailles Murfree, "Charles Egbert Craddock" (1850-). "In the Tennessee Mountains," and several other novels.

Robert Barr (1850-). Canadian author.

Grant Allen (1850-). Canadian author.

George Parsons Lathrop (1851-1898). Poet and novelist.

John Bach McMaster (1852-). History of the United States.

Thomas Nelson Page (1853-). "Mars' Chan," "Gordon Keith," and collected short stories.

Francis Marion Crawford (1854-1909). Novels and ballads.

Wm. Henry Drummond (1854-). Canadian "habitant" poet.

James MacDonald Oxley (1855-). Canadian author.

Chas. Wm. Gordon, "Ralph Connor" (1860-). Canadian author.

Ernest Thompson Seton (1860-). Canadian author.

Bliss Carman (1861-). Canadian poet.

Sarah Jeanette Cotes (1862-). Canadian author

Duncan Campbell Scott (1862-). Canadian poet.

John Castell Hopkins (1863-). Canadian author.

E. Pauline Johnson (-). Canadian poet.

Jane Newton Mellwraith (-). Canadian author.

Lillian Rood, "Louis Lloyd" (-). Canadian author.

Margaret Marshall Saunders (-). Canadian author.

Amelie Rives Chanler, Princess Troubetzkoy (1863-). Novelist.

BIOGRAPHICAL DICTIONARY OF AUTHORS.

Where an author has been more critically noted in the introductory articles of this section special reference is made to the particular literature in order to avoid repetition.

ABBEY, HENRY (1842-). An American poet; born in Rondout, N. Y. The author of *May Dream, Ralph and Other Poems, Stories in Verse, Ballads of Good Deeds, The City of Success,* and *Phaëton.*

ABBOTT, JACOB (1803-1879). American juvenile writer; born at Hallowell, Me. Among the best known of his more than two hundred volumes are *The Rollo Books, American Histories for Youth, The Franconia Stories.*

ABBOTT, JOHN S. C. (1805-1877). American pedagogical writer, and historian; born at Brunswick, Me. His *Mother at Home* has been translated into many languages.

A'BECKET, GILBERT ABBOTT (1811-1856). An English humorous writer; founded *Figaro in London,* the forerunner of *Punch;* dramatized *The Chimes* and other of Dickens's works; wrote the *Comic History of England,* etc.

ABEN-EZRA (1092-1167). A most learned Jew of his times; born in Toledo, Spain. His *Commentaries on the Old Testament* and some treatises on astrology are his most important works.

ABOUT (*a-boo'*), **EDMOND** (1828-1885). French dramatist, journalist, and novelist; born at Dieuze; elected a member of the Academy in 1885. *The Man with a Broken Ear, The Notary's Nose,* and *The King of the Mountains,* are among his most popular stories.

ABSCHATZ, HANS ASSMAN, FREIHERR VON (1646-1699). One of the best known of the German poets of the seventeenth century. He was one of the second Silesian school of poets.

ABULFAZL (*ah-bool-faz'l*) (? -1602). Vizier and historiographer of the great Mongol emperor, Akbar, of whose reign he wrote a complete history, and an account of the "constitution and administration of the empire."

ABULFEDA (*a-bool-fay'da*) (1273-1331). Moslem prince and historian, author of *An Abridgment of the History of the Human Race* from the creation to 1328, and a *Geography.*

ABUL SU'UD (1828-). Arabian poet; born in Lower Egypt. Among his works is a dithyramb on the fall of Sebastopol, containing an appeal for universal brotherhood.

ABU NUWAS (about 762-about 810). A most celebrated Arabian lyric poet; wrote 4,900 verses praising wine, the chase, and asceticism; called the "Heine of Arabic literature."

ACCOLTI, BERNARDO (1465-1536). An Italian poet, known by his contemporaries as "The Unique." Multitudes flocked to hear him recite his verses. His poems were first published in 1513.

ACHARD, LOUIS AMEDEE EUGENE (1814-1875). A French novelist; born in Marseilles. Among his many romances are *La belle rose, Les misères d'un millionaire, Histoire d'un homme.*

ADAM DE LA HALLE (1235-about 1287). One of the founders of the French drama. His *Le jeu de la feuillée,* is the earliest French comedy; his *Robin et Marion* is the earliest European comic opera.

ADDISON, JOSEPH (1672-1719). English poet and essayist; born at Milston, Wiltshire. (See Eng. Lit.)

ADAM, GRAEME MERCER (1839-). A Canadian author and editor; born in Scotland. Wrote *The Canadian Northwest* (1895); *Outline History of Canadian Literature;* with Ethelwyn Wetherald wrote a novel, *An Algonquin Maiden.*

ADAMS, CHARLES FOLLEN (1842-). An American humorous German dialect poet; born at Dorchester, Mass. Wrote *Leedle Yawcob Strauss and Other Poems* and *Dialect Ballads.*

ADAMS, HANNAH (1755-1832). One of the earliest American woman writers; lived at Brookline, Mass.; wrote *Views of Religious Opinions, History of New England, Evidences of Christianity,* and *A History of the Jews.*

ADAMS, HERBERT BAXTER (1850-1901). An American historian; born at Amherst, Mass.; edited the valuable *Johns Hopkins Studies in History and Political Science.* His most important work is *The Life and Writings of Jared Sparks.*

ADAMS, HENRY (1838-). An American historian; third son of Charles Francis Adams; editor of *North American Review* (1875-1876); wrote *Anglo-Saxon Courts of Law, History of the United States from* 1801 *to* 1817, and a life of John Randolph.

ADAMS, SARAH FULLER FLOWER (1805-1848). An English poetess, wife of William Bridges Adams. Her longest work is *Vivia Perpetua,* a dramatic poem dealing with the life of the early Christians. She wrote *Nearer, My God, to Thee,* and *He Sendeth Sun, He Sendeth Shower.*

ADAMS, WILLIAM TAYLOR, "OLIVER OPTIC" (1822-1897). An American writer of juvenile fiction; born at Medway, Mass. His first work, *Hatchie, the Guardian Slave,* was followed by over 100 volumes, including *The Boat Club* and *Young America Abroad.*

ADE, GEORGE (1866-). American journalist and author; born at Kentland, Ind. Among his books are *Artie, Fables in Slang, The Girl Proposition, In Pastures New;* his plays include *The Sultan of Sulu, Peggy from Paris, The County Chairman, The College Widow, Just Out of College.*

AELIANUS, CLAUDIUS (flourished about 200). A writer of Italy who wrote exclusively in Greek. His *On the Nature of Animals* and *Miscellanies* are entertaining accounts and anecdotes.

AESCHINES (*esk'i-nees*) (389-314 B. C.). A Grecian orator, rival of Demosthenes; overthrown by the latter's famous speech, *On the Crown,* and went into exile (330 B. C.). His chief orations are: *Against Timarchus, On the False Embassy,* and *Against Ctesiphon.*

AESCHYLUS (*es'ki-lus*) (525-456 B. C.). The earliest of the three great Athenian tragic poets. (See Gr. Lit.).

AESOP (*ees'op*) (620?-560? B. C.). Thought to have been a Greek slave, set free by his master because of his great talent. The obscurity and inconsistency concerning Aesop's life and writings lead many to believe that he never really existed. However, his name early became associated with the "beast-fables" which are the common heritage of the Indo-European peoples.

AFZELIUS, ARVID AUGUST (1785-1871). A Swedish poet; noted for his translation of the *Elder Edda,* for his *Romances,* and for studies in Norse history and literature.

AGATHIAS ASIANUS (about 530-about 580). A Greek poet and historian; wrote Roman law, love verses, and a most valuable history of the years 552 to 558.

AGOULT, MARIE CATHERINE SOPHIE DE FLAVIGNY, COMTESSE D' (1805-1876). A French author who wrote under the name of Daniel Stern. Her best work is *Esquisses morales et politiques.*

AGUILAR, GRACE (1816-1847). An English writer of Jewish birth; wrote *The Spirit of Judaism, The Jewish Faith, Home Influence, A Mother's Recompense, The Vale of Cedars,* and *The Days of Bruce.*

AGUILERA (*ah-ge-lay'ra*), **VENTURA RUIZ** (1820-1881). Spanish lyric poet, called the "Spanish Béranger." Among his most important works are the collections of poems entitled *Elegias, Armonias y Cantares, La Arcadia moderna,* and *Leyenda de nochebuena.*

AHLGREN, ERNST, the pen name of **VICTORIA MARIA BENEDICTSSON** (1850-1888). A Swedish author. She wrote many novels marked by a simplicity of style and a powerful and artistic description of life.

AHMES or **AAHMESU** (about 1700 B. C.). An Egyptian writer; wrote a compilation entitled *Directions for Obtaining the Knowledge of all Dark Things.* The material was gathered from an old manuscript written about 2500 B. C. It deals largely with the ancient Egyptian mathematics.

AIDE (*ah-e-day'*), **CHARLES HAMILTON** (1830-). An English poet and novelist; born in Paris; son of a Greek diplomat. Among his poems are *Eleanore, Songs Without Music, The Danube River,* and *Remember or Forget.* His novels include *Rita, Passages in the Life of a Lady,* and *Elizabeth's Pretenders.*

AINSWORTH, WILLIAM HARRISON (1805-1882). English historical novelist. His first novel was *Sir John Chiverton*, published 1826, soon followed by *Rookwood*, *Crichton*, and *Jack Sheppard*. Among his later works are *Lancashire Witches*, *Star Chamber*, *The Spanish Match*, and *Merrie England*.

AIRD, THOMAS (1802-1876). Scottish poet, whose works, except the *Devil's Dream*, have not received the popular approval their merit deserves.

AKENSIDE, MARK (1721-1770). English author, one of the early romantic poets. Distinguished chiefly for his didactic poem, *Pleasures of the Imagination*.

AKSAKOFF, IVAN SERGEYEVITCH (1823-1886). A Russian writer and leader of the Panslavists. He founded the *Sbornik*, or *Miscellany*, at Moscow, the *Den*, the *Moskva*, a daily paper, the *Moskvich*, and the *Rus*. He was the best known poet of the Slavophil cause.

AKSAKOFF, SERGEI TIMOFEYEVITCH (1791-1859). A Russian writer. His chief works are: *Observations on Angling*, *Memoirs of a Huntsman*, *Tales and Memories of a Huntsman*, *The Family Chronicle*, and *Bogrov's Childhood*.

ALAMANNI (*ah-la-man'ne*), **LUIGI** (1495-1556). Italian poet and refugee. His works include translations, plays, and vigorous satires.

ALARCON, PEDRO ANTONIO DE (1833-1891). A Spanish novelist and statesman. Among his novels are *Cosas que fueron*, *Amores y amorios*, *Juicios literarios y artisticos*, *El escandalo*, *El niño de la bola*, and *La prodiga*.

ALARCON Y MENDOZA (*ah-lar-kon'e men-do'tha*), **DON JUAN RUIZ DE** (1581?-1639). Noted Spanish dramatist; born in Mexico. Among his twenty surviving plays are *Verdad Sospechosa* ("Truth Suspected"), *Las paredes oyen* ("Walls Have Ears"), *El texedor de Segovia* ("The Weaver of Segovia").

ALAS, LEOPOLDO (1852-). ("Clarin.") Spanish journalist, novelist, and critic. Author of *La regenta*.

ALBERT, COUNT OF BOLLSTADT (1193?-1280). ("Albertus Magnus.") German philosopher, celebrated for his efforts to spread the doctrines of Aristotle. *Summa de Creaturis* and *Summa Theologiae* are his best known works.

ALBUQUERQUE, AFFONSO DE (1453-1515). Viceroy of the Portuguese Indies, whose *Commentaries*, issued by his son and translated by Birch, are the standard authority for this period of Indian history.

ALCAEUS (*al-see'us*) (620-580 B. C.). Greek lyric poet, contemporary with Sappho; wrote many odes, hymns, and songs, of which only fragments remain; invented the stanza called Alcaic, which was later successfully imitated by Horace.

ALCEDO Y HERRERA, ANTONIO (1735-?). A Peruvian soldier and historian whose *Geographical and Historical Dictionary of the West Indies*, published in Madrid (1786-1789), contains much exclusive information about the middle period of Spanish-American history.

ALCMAN (*alk'man*) (flourished about 620 B. C.). Greek poet; founder of Doric lyric poetry and forerunner of the bucolic poets. Fragments of his six books remain to us.

ALCOCK, SIR RUTHERFORD (1809-1897). An English diplomat and writer on Japan; wrote *Life's Problems*, *The Capital of the Tycoon*, and *Art and Industries of Japan*.

ALCOTT, LOUISA MAY (1832-1888). American juvenile writer and novelist, daughter of A. Bronson Alcott; at first a school teacher; during the Civil War, a volunteer army nurse, some experiences as such being depicted in *Hospital Sketches*. Among her many juvenile stories are *Little Women* (the best and most popular), *Little Men*, *Eight Cousins*, *An Old-Fashioned Girl*.

ALDEN, HENRY MILLS (1836-). An American editor and author; born at Mt. Tabor, Vt.; classmate of James A. Garfield and Horace E. Scudder at Williams College; managing editor of *Harper's Weekly* (1863-1869); editor of *Harper's Magazine* since 1869; a Greek classical scholar; collaborated with A. H. Guernsey on *Harper's Pictorial History of the Great Rebellion;* wrote a poem, *The Ancient Lay of Sorrow*, and two profound metaphysical essays much read, *God in His World*, and *A Study of Death*.

ALDEN, MRS. ISABELLA McDONALD (1841-). ("Pansy"). American writer of fiction, including a juvenile series of about sixty volumes.

ALDEN, WILLIAM LIVINGSTON (1837-1908). An American author; born at Williamstown, Mass.; joined the editorial staff of the New York *Times;* consul general at Rome (1885-1889) in Cleveland's administration; made chevalier of the Order of the Crown of Italy by King Humbert (1889); literary correspondent of the New York *Times* in London; wrote *Domestic Explosions*, *Shooting Stars*, *Moral Pirates*, *Life of Columbus*, *Cruise of the Canoe Club*, *A Lost Soul*, *The Mystery of Elias G. Roebuck*, and *His Daughter*.

ALDRICH, THOMAS BAILEY (1836-1907). American poet and novelist; born at Portsmouth, N. H.; edited the *Atlantic Monthly* (1881-1890). His poetry, graceful and artistic, includes *The Bells*, *Cloth of Gold*, *Wyndham Towers*, *Unguarded Gates*. *Marjorie Daw* and the *Story of a Bad Boy* are his best-known novels.

ALEARDI, ALEARDO (1812-1878). Italian patriot and poet; author of *Il monte Circello*, *Canti*, *I sette soldati*.

ALEMAN, MATEO (about 1545-about 1610). A famous Spanish novelist. His great work is *Guzman de Alfarache*, which was published in 1599. Aleman is supposed to have gone to Mexico, where he died in the reign of Philip III.

ALENCAR, JOSE MARTINIAO D' (1829-1877). Brazilian jurist and novelist; wrote *O Gaucho*, *Iracema*, *O Guarany*.

ALFIERI (*ahl'fe-ay're*), **VITTORIO, COUNT** (1749-1803). Italian dramatist, whose *Brutus*, *Timoleone*, and *Virginia* inspired a generation of Italian patriots, and were factors in the bringing about of Italian political unity. *Saul* is still considered his masterpiece. (See It. Lit.).

ALFORD, HENRY (1810-1871). An English biblical critic and poet; dean of Canterbury (1857). He wrote the *New Testament for English Readers*, *The School of the Heart and Other Poems*, and *A Plea for the Queen's English;* the latter attracted great attention.

ALGER, HORATIO (1834-1899). An American writer of juvenile fiction; born in Revere, Mass.; worked among street boys in New York; wrote the *Ragged Dick*, *Tattered Tom*, and *Luck and Pluck* series.

ALISON, SIR ARCHIBALD (1792-1867). A British lawyer, historian, and writer. His *History of Europe* in 10 volumes, begun in 1829 and finished in 1842, was a great success. He wrote also *Life of the Duke of Marlborough*, and *The Principles of Population*.

ALLEN, CHARLES GRANT BLAIRFINDIE, better known as **GRANT ALLEN** (1848-1899). An English author; born near Kingston, Canada. Besides his scientific works he wrote a *Life of Charles Darwin*, and novels including *Philistia*, *The Devil's Die*, *The Woman Who Did*, and *A Bride from the Desert*.

ALLEN, ELIZABETH AKERS (1832-). "Florence Percy." An American author; born at Strong, Me. She is best known as the writer of *Rock Me to Sleep*, *Mother*, which appeared in 1860.

ALLEN, JAMES LANE (1849-). An American novelist; born in Kentucky. He has published *With Flute and Violin*, *The Blue Grass Region of Kentucky*, *John Gray*, *The Kentucky Cardinal*, *Aftermath*, *A Summer in Arcady*, *The Choir Invisible*, *The Reign of Law*, and *The Mettle of the Pasture*.

ALLEN, KARL FERDINAND (1811-1871). A Danish historian; born at Copenhagen. His great work is *The History of the Three Northern Kingdoms* (1497-1536) in five volumes.

ALLIBONE, SAMUEL AUSTIN (1816-1889). American bibliographer; most important works are his *Critical Dictionary of English Literature*, *Poetical Quotations*, and *Prose Quotations*.

ALLSTON, WASHINGTON (1779-1843). American artist and author. His writings include *Lectures on Art*, a novel, *Monaldi*, and a poem, *Sylphs of the Seasons*.

ALMEIDA-GARRETT (*al-may'e-da-gar-ret'*), **VISCOUNT D'** (1799-1854). Portuguese poet, dramatist, and statesman. His many noteworthy productions include *Romanceiro*, a collection of Portuguese folk tales; the dramas *Auto de Gil Vicente*, and *Dona Filippa de Vilhena;* the poems *Camoens*, and *Folhas Cahidas* ("Fallen Leaves").

AMARI (*a-mah're*), **MICHELE** (1806-1889). Italian historian; noted particularly for his *La Guerra del Vespro Siciliano*.

AMICIS (*a·me'chis*), **EDMONDO DE** (1846-1908). A popular Italian writer; author of many books of travel. Of his later works his most popular is *Il Cuore* (*The Heart of a Boy*).

AMIEL, HENRI FREDERIC (1821-1881). A Swiss essayist, poet, and professor of æsthetics. His *Journal intime*, a diary of 1,700 pages of manuscript, was translated and edited by Mrs. Humphry Ward.

AMMIANUS MARCELLINUS (fourth century A. D.). The last Latin historian of the Roman Empire. His *History*, from the accession of Nerva (96) to the death of Valens (378), was in thirty-one books, of which eighteen have come down to us.

AMRU-EL-KAIS (sixth century A. D.) By some considered the greatest of Arabian poets; the author of the first of the seven Arabic poems grouped under the title *Moallakat*, translated by Sir William Jones.

AMUNATEGUI, MIGUEL LUIS (1828-1888). Chilean author. His works include *La Dictadura de O'Higgins*, *Compendio de historia politica y eclesiástica en Chile*.

ANACREON (*a·nak're·on*) (561-476 B. C.). Greek lyric poet. Few genuine fragments of his poems remain. A conception of their spirit may be gleaned from Thomas Moore's imitations.

ANAXIMENES. A Greek historian (fourth century B. C.). Said to have taught Alexander the Great and to have accompanied him in his Asiatic campaign. We have fragments of his histories of Philip, of Alexander, and of Greece.

ANDERSEN, HANS CHRISTIAN (1805-1875). A celebrated Danish writer; the "children's poet." His *Fairy Tales* gave him world-wide fame (1835), and were followed by *Tinderbox*, *Big Claus and Little Claus*. Mary Howitt's translation of his tales is the best.

ANDRADA E SILVA (1765-1838). Brazilian statesman; published writings on mineralogy and *Poesias d' Americo Elyseo*.

ANDREWS, CHARLES McLEAN (1863-). An American historian; born at Wethersfield, Conn. *The Historical Development of Modern Europe* is a valuable work.

AN'EURIN (lived about 603). A Welsh poet; a bard at the battle of Cattraeth and taken prisoner. After his release he lived at Galloway. His epic poem, *Gododin*, contains over 900 lines and describes the defeat of the Britons by the Saxons at Cattraeth.

ANICET-BOURGEOIS, AUGUSTE (1806-1871). A French dramatist. He wrote many vaudevilles, comedies, and melodramas, both alone and in collaboration with others.

ANNA COMNE'NA (1083-1148?). Byzantine princess and historian; imprisoned for conspiracy against the succession of her brother. Her history of the Empire, *The Alexiad*, is devoted chiefly to the reign of her father, Alexius I.

ANNUNZIO (*an·noon'tse·o*), **GABRIELE D'** (1864-). Well-known Italian poet, dramatist, and novelist. When only fourteen, he published a collection of lyrics, other poems soon following. Both dramas and novels display depth of character analysis.

ANTAR or **ANTARA** (seventh century A. D.). A famous Arabian hero and one of the celebrated pre-Islamic poets. He was the son of a slave but procured his freedom by his warlike exploits. He wrote one of the seven poems included in the *Moallakat*.

ANTHEUNIS, GENTIL THEODOOR (1840-). One of the best lyric poets of Belgium.

ANTIMACHUS (*an·tim'·a·kus*) (about 410 B. C.). Greek poet, placed by Quintilian first after Homer. *Thebais*, an epic, and *Lyde*, an elegy, were his chief poems, but only fragments of his writings remain.

ANZENGRUBER, LUDWIG (1839-1889). An Austrian dramatist and novelist. He became famous by his anticlerical drama, *Pfarrer von Kirchfeld*. This was followed by *Meineidbauer*, *Kreuzelschreiber* and the novels, *Der Schandfleck* and *Der Sternsteinhof*.

APION (first century A. D.). An Alexandrian grammarian. We know little about him except from Josephus's tract, *Against Apion*. He lived and taught in Rome in the reign of Claudius. He wrote a *History of Civilization in Egypt* which contained the famous story of Androcles and the lion.

APULEIUS (*ap·u·lee'yus*), **LUCIUS** (about 130- ?). Roman rhetorician and satirist, remembered particularly for his *Metamorphoses, or the Golden Ass*, a satire on the vices of the time.

ARANY (*o'ro·ny*), **JANOS** (1817-1882). After Petofi, the greatest of Hungarian poets. In 1845 he won the Kisfaludy Society prize at Pesth with his satirical epic, *The Lost Constitution*. Two years later (1847) he won another prize with his *Toldi*, an epic based on Magyar traditions.

ARATOR (sixth century A. D.). A Christian Latin poet; a jurist under Theodoric. About 540 he took orders. Best known by his *De Actis Apostolorum* and *Epistola ad Parthenium*.

ARATUS OF SOLI (about 270 B. C.). A Greek poet and physician of Cilicia; wrote *Phaenomena* and *Diosemeia*, which were translated into Latin by Cicero and others. St. Paul, a native of the same province, quotes from Aratus in his speech on Mars Hill (Acts xvii. 28).

ARBOLEDA, JULIO (1817-1862). Colombian poet and politician. His poems include *Dios y la virtud*, *Mo aussento, Estoy en la cárcel*.

AR'BUTHNOT, JOHN (1667-1735). Scottish author and physician, famous for his amusing political satire, *The History of John Bull*, and *The Memoirs of Martinus Scriblerus*.

ARCHIAS, AULUS LICINIUS (about 62 B. C.). A Greek poet known only by the famous oration, *Pro Archia Poeta*, which Cicero delivered in his behalf in 62 B. C. when charged with having gained citizenship illegally.

ARCHILOCHUS (*ar·kil'o·kus*) (seventh century B. C.). Greek lyric poet who was regarded by the ancients as the leading satirist and equal in rank with Homer. Only fragments of his poetry remain.

ARGENSOLA, BARTOLOMEO LEONARDO DE (1562-1631). Spanish poet and historian; wrote *Conquest of the Moluccas*.

ARGENSOLA, LUPERCIO LEONARDO DE (1559-1613). Spanish poet, dramatist, and historian; chronicler of Aragon; best known for his lyric poems and sonnets.

ARGYLL (*ar·gile'*), **GEORGE JOHN DOUGLAS CAMPBELL, EIGHTH DUKE OF** (1823-1900). English statesman, orator, and writer on economics, geology, and ecclesiastical matters. *The Reign of Law*, his best-known work, is a strong defense of theism.

ARGYLL, JOHN DOUGLAS SUTHERLAND CAMPBELL, NINTH DUKE OF (1845-). English statesman and author. As Marquis of Lorne he married Princess Louise, daughter of Queen Victoria; was governor general of Canada (1878-1883); wrote *A Trip to the Tropics*, *Guido and Lita*, *The Psalms in Verse*, *Imperial Federation*, and *Canadian Pictures*.

ARION OF METHYMNA (about 625 B. C.). Greek lyric poet, who developed the dithyramb or choral song in honor of Dionysus.

ARIOSTO (*ar·yos'to*), **LUDOVICO** (1474-1533). Italian poet, whose *Orlando Furioso*, one of the great poems of the world, is among the very first epics of chivalry and romance. [See It. Lit.]

ARISTOPHANES (*ar·is·tof'a·nees*) (450-385 B. C.). Greek comic poet; author of many comedies in verse, among them, *The Knights*, *The Clouds*, *The Wasps*, *The Birds*, *The Frogs*. [See Gr. Lit.]

ARISTOTLE (384-322 B. C.). Greek philosopher. [See. Gr. Lit.]

ARNABOLDI, ALESSANDRO (1827-1898). An Italian lyric poet; born at Milan. His works were collected under the titles *Versi*, *I poeti d'azione*, and *Nuovo Versi*.

ARNASON, JON (1819-1888). An Icelandic writer, called "the Grimm of Iceland." His collection of *Popular Legends and Tales of Iceland* is one of the most valuable contributions to folklore.

ARNDT, ERNST MORITZ (1769-1860). ("Father Arndt"). German patriot and author. His *Geschichte der Leibeigenschaft in Pommern* influenced the abolition of serfdom. Chiefly known for his patriotic songs and poems.

ARNOLD, MATTHEW (1822-1888). English poet, essayist, and critic; son of Dr. Thomas Arnold of Rugby. [See Eng. Lit.]

ARNOLD, SAMUEL GREENE (1821-1880). An American historian; born at Providence, R. I. He was lieutenant governor of his state in 1852, 1861, and 1862. He wrote the *History of Rhode Island* and *Providence Plantations*.

ARNOLD, SIR EDWIN (1832-1904). English author, to whom the popularizing of the philosophy of India is largely due. *The Light of Asia,* an epic on the life and work of Buddha, is his most noteworthy production. Others include *Pearls of the Faith, Light of the World, Seas and Lands, East and West.*

ASBJORNSEN (*as-byern'sen*), **PETER CHRISTEN** (1812-1885). Norwegian author and naturalist. His scientific writings are inferior in value to his *Norwegian Folk Tales* and *Norwegian Fairy Tales and Folk Legends.*

ATHENAEUS. A Greek writer who lived in Rome about 180-250. His great work was the *Deipnosophistae* ("Banquet of the Learned) in 15 books, of which about half remain. It is a storehouse of miscellaneous information, including quotations from 800 authors whose works are otherwise not extant.

ATHERTON, GERTRUDE FRANKLIN (1859-). An American author; born in San Francisco, Cal.; settled in London (1895). Her works are more popular in England than in America. They include *The Aristocrats, The Conqueror, Rulers of Kings,* and *Traveling Thirds.*

ATKINSON, EDWARD (1827-1905). American economist; prolific writer on economic subjects, including the tariff, banking, and fire prevention.

ATTERBOM, PETER DANIEL AMADEUS (1790-1855). Most distinguished Swedish poet of the romantic school. His most important works are *Swedish Seers and Poets* and the dramatic poem, *Isle of Blessedness.*

AUBIGNE (*o-been-yea'*), **THEODORE AGRIPPA D'** (about 1550-1630). French Huguenot statesman, historian, and poet. His *Universal History* and other historical writings are full of satire. The horrors of religious warfare are strongly depicted in his best work, a group of poems called *The Tragedies.*

AUERBACH, BERTHOLD (1812-1882). German author of Jewish parentage, many of whose novels are overcharged with philosophy. His most noteworthy productions are *Schwarzwälder Dorfgeschichten* and the romance, *Auf der Höhe.*

AUGIER (*o-zhe-a'*), **EMILE** (1820-1889). French dramatist; author of a large number of successful plays. He is vigorous in style and possesses great moral earnestness.

AUSTEN, JANE (1775-1817). English novelist. *Sense and Sensibility, Pride and Prejudice, Emma,* and *Mansfield Park* were published 1811-1816; *Northanger Abbey* and *Persuasion* appeared after her death. [See Eng. Lit.]

AUSTIN, ALFRED (1835-). English poet; author of many volumes of verse, among which are *The Season, Savonarola, Songs of England, A Tale of True Love;* was made poet laureate of England (1896).

AUSTIN, JANE GOODWIN (1831-1893). An American novelist who dealt with colonial New England. Her more important works are *A Nameless Nobleman, The Desmond Hundred, Standish of Standish, Betty Alden, David Alden's Daughter and Other Stories.*

AVERRHOES (*a-ver'ro-ez*) (1126-1198). Famous Arabic philosopher and jurist; born at Cordova; commentator of Aristotle.

AVICEN'NA (980-1037). Great Arabic physician and philosopher; author of a system of medicine and of a treatise on metaphysics.

AYRER, JAKOB (about 1560-1605). German dramatist. Thirty tragedies and comedies and thirty-six Shrovetide plays and vaudevilles appear in his *Opus Theatricum.*

AYTOUN (*a'toon*), **WILLIAM EDMONDSTOUNE** (1813-1865). Scottish poet; established his reputation by his *Lays of the Scottish Cavalier.* Following this were *Firmilian, Bothwell,* and *Scottish Ballads.* His longer works are in the measure and manner of Walter Scott.

BACHELLER, IRVING (1859-). An American author; born at Pierrepont, N. Y.; wrote *The Master of Silence, The Still House of O'Darrow, Eben Holden,* and *D'ri and I.*

BACHMAN, JOHN (1890-1874). An American naturalist. He was the chief assistant of Audubon and principal author of *The Quadrupeds of America;* wrote also *The Doctrine of the Unity of the Human Race.*

BACON, FRANCIS, VISCOUNT OF ST. ALBANS (1561-1626). One of the most remarkable men of whom any age can boast; a reformer of philosophy, by founding it on the observation of nature, after it had consisted, for many centuries, of scholastic subtleties and barren dialectics; born in London, his father being Sir Nicholas Bacon, lord keeper of the great seal. He contracted an advantageous marriage; was made solicitor general and then attorney general; in 1617 became lord keeper of the seals; in 1618 was made lord high chancellor and created Baron Verulam, and in 1621, Viscount St. Albans. He might have lived in splendor, without degrading his character by those acts which stained his reputation. He was accused before the House of Lords of having received money for grants of offices and privileges under the seal of state. He was unable to justify himself, and, desiring to avoid the mortification of a trial, confessed his crimes and threw himself on the mercy of the peers, beseeching them to limit his punishment to the loss of the high office which he had dishonored. The lords sentenced him to pay a fine of £40,000 and to be imprisoned in the Tower during the pleasure of the king. He was also declared forever incapable of place or employment, and forbidden to sit in Parliament or to appear at court. The king, however, remitted the fine, and the imprisonment only lasted two days. He survived his fall only a few years. [See Eng. Lit.]

BACONTHORPE, BACON, or **BACHO, JOHN** (? -1346). An English scholar and philosopher, known as "the Resolute Doctor." He wrote more than 120 works, which were much studied in the Middle Ages.

BACSANYI (*bo'chan-ye*), **JANOS** (1763-1845). Hungarian poet. He wrote chiefly for the *Magyar Museum,* which he helped to found; also *The Valor of the Magyars,* a history (1785).

BADEAU, ADAM (1831-1895). An American soldier and historian; born in New York City; military secretary to General Grant. He wrote *The Military History of General Grant,* upon which Grant was frequently consulted.

BAGBY, GEORGE WILLIAM (1828-1883). An American humorist who wrote under the name of "Mozis Addums."

BAGEHOT (*baj'ot*), **WALTER** (1826-1877). An English essayist and journalist; wrote *The English Constitution, Physics and Politics, Lombard Street, Literary Studies, Economic Studies,* and *Biographical Studies;* was editor of the *Economist* (1860-1877).

BAGGESEN, JENS (1764-1826). A Danish poet and story writer; wrote *Lyrics, Comic Tales.* His Danish works comprise twelve volumes and his German, five; Longfellow translated his poem on *Childhood.*

BAIF, JEAN ANTOINE DE (1532-1589). A French poet; born in Venice; one of the most voluminous writers of his day.

BAILEY, JAMES MONTGOMERY (1841-1894). An American journalist known as "The Danbury News Man"; born at Albany, N. Y. His works include *Life in Danbury, They All Do It, England from a Back-Window, Mr. Philip's Goneness,* and *The Danbury Boom.*

BAILEY, PHILIP JAMES (1816-1902). An English poet. His first poem, *Festus,* begun when he was twenty, was published in 1839. His other works include *The Angel World, The Mystic,* and *The Universal Hymn.*

BAILLIE, JOANNA (1762-1851). A British dramatist and poet; author of *Plays on the Passions,* and the drama *De Montfort.*

BAIRD, CHARLES WASHINGTON (1828-1887). An American historian; born at Princeton, N. J.; author of *The History of the Huguenot Emigration to America.*

BAIRD, HENRY MARTYN (1832-). An American scholar, brother of Charles Washington Baird; born at Philadelphia. His six volumes upon the history of the Huguenots are a succinct account of the history of French Protestants from 1512 to 1802.

BAKER, SIR SAMUEL WHITE (1821-1893). An English explorer and author. His works include *Rifle and Hound in Ceylon, The Nile Tributaries of Abyssinia, The Albert Nyanza, Explorations of the Nile Sources, Cast Up by the Sea,* and *Ismailia.*

BAKER, WILLIAM MUMFORD (1825-1883). American novelist; born at Washington, D. C. His chief works are *Insides: a Chronicle of Secession* (by George F. Harrington, his pseudonym); *Carter Quartermain, His Majesty Myself, The Virginians in Texas.*

BALLANTINE, JAMES (1808-1877). A Scottish poet. His best known songs and ballads in Scottish dialect are included in his volumes, *The Gaberlunzie's Wallet* and *The Miller of Deanhaugh*

BALZAC, HONORE DE (1799-1850). A celebrated French novelist. He classes his works under the title of *La Comédie Humaine*, which, while unfinished, groups in the several novels over two thousand characters. His writings are published in 24 volumes of fiction separately; the *Human Comedy*, 47 volumes; *Droll Stories*, 3 volumes; *Drama*, 2 volumes; *Correspondence*, 2 volumes; *Letters to Madame Hanska*, 1 volume; *Youthful Works*, 10 volumes.

BALZAC, JEAN GUEZ DE (1594-1654). French author. By the composition and polished style of his *Letters* he purified French prose from the pedantries of the previous century.

BANA (seventh century A. D.). Sanskrit author. The two novels, *Adventures of Harsha* and *Kadambari* are his greatest works.

BANCROFT, GEORGE (1800-1891). An American historian; born at Worcester, Mass. The first volume of his great work, *The History of the United States*, appeared in 1834. The work was thoroughly revised by him and brought down to 1789.

BANGS, JOHN KENDRICK (1862-). An American humorist; born at Yonkers, N. Y.; wrote *Coffee and Repartee, House-boat on the Styx, The Enchanted Typewriter, Olympian Nights*, and *Booming of Acre Hill*.

BANIM, JOHN (1798-1842). An Irish novelist. In 1825, with his elder brother, Michael (1796-1874), he brought out the *O'Hara Tales*. He also wrote *Croppy, The Last Baron of Crana*, and *Father Connell*.

BARATYNSKI, YEVGENI ABRAMOVICH (1800-1844). Russian poet; author of *Eda* and *The Gypsy*.

BARBAULD, ANNA LETITIA (AIKIN) (1743-1825). An English poet and essayist. Of her numerous writings she is best known by her *Evenings at Home*. Her *Ode to Life* is an admirable lyric.

BARBIER, HENRY AUGUSTE (1805-1882). French poet and novelist, remembered chiefly for his satires, *Les Iambes;* also wrote *Il Pianto* and *Lazare*.

BARBOUR, JOHN (1316-1395). A Scottish poet. He has been called "the father of Scottish poetry." His most famous poem is *The Brus*, or *The Bruce*, of about 14,000 eight-syllabled lines.

BARCLAY, ALEXANDER (about 1475-1552). A British poet and satirist. His chief work is *The Shyp of Folys* (Ship of Fools) *of the Worlde*, first printed by Pynson in 1509. His *Egloges* are the first eclogues to appear in English.

BARHAM, RICHARD HARRIS (1788-1845). An English clergyman and humorous writer. Under the pseudonym of "Thomas Ingoldsby" he sent to *Bentley's Miscellany* his series of comic papers in prose and verse, *The Ingoldsby Legends*. He published two novels, *Baldwin* and *My Cousin Nicholas*.

BARING-GOULD, SABINE (1834-). An English author; born at Exeter. His studies in the superstitions, folklore, and legends of the Middle Ages are of great value, such as *The Book of Werewolves, Curious Myths of the Middle Ages, Post-mediæval Preachers, The Silver Store*, and *Curiosities of Olden Times*. Among his novels are *Mehalah, Court Royal, Red Spider, The Gaverocks, Richard Cable, John Herring*, and *In the Roar of the Sea*.

BARLOW, JOEL (1754-1812). An American poet; born at Redding, Conn. In 1787 he wrote his *Vision of Columbus*, which brought him fame; he later expanded it into the *Columbiad*. He is more to be remembered as a patriot than as a poet, though his *Hasty Pudding* is still readable.

BARNARD, LADY ANNE (LINDSAY) (1750-1825). A Scottish poetess, the eldest daughter of James Lindsay, Earl of Balcarres. She is best known as the author of *Auld Robin Gray*, written about 1771. Her *Letters* were published in 1901.

BARNES, WILLIAM (1801-1886). An English poet. His poems are written in Dorsetshire dialect: *Poems of Rural Life* (1844), *Homely Rhymes* (1859), and *Poems of Rural Life* (1893).

BARNFIELD, RICHARD (1574-1627). English poet. His works include *The Encomium of Lady Pecunia or the Praise of Money, The Affectionate Shepherd*, and *Cynthia*. There was long a confusion of authorship concerning the poems *If music and sweet poetry agree* and *As it fell upon a day*, which were attributed to Shakespeare; also *Live with me and be my love*, with which Marlowe was credited; but there is now no doubt that they are Barnfield's.

BARR, AMELIA EDITH (1831-). An Anglo-American novelist; born at Ulverston, England. Among her thirty novels are *Jan Vedder's Wife, A Daughter of Fife, A Bow of Orange Ribbon, Friend Olivia, Trinity Bells, The Maid of Maiden Lane, The Lion's Whelp*, and *Squire of Sandal-side*.

BARR, ROBERT (1850-). An English novelist. Among his works are *Countess Tekla, The Unchanging East, The Victors*, and *Over the Border*.

BARRIE, JAMES MATTHEW (1860-). A Scottish novelist; author of *Auld Licht Idylls, When a Man's Single, A Window in Thrums, My Lady Nicotine, The Little Minister, Sentimental Tommy, Tommy and Grizel, Margaret Ogilvy*, and *The Little White Bird*.

BARROS, JOAO DE (1496-1570). Portuguese historian, author of the first three volumes of the valuable *Decadas*, a history of Portuguese India.

BARTLETT, JOHN RUSSELL (1805-1886). An American author and bibliographer; born at Providence, R. I.; wrote *Progress of Ethnology*, and *Dictionary of Americanisms*.

BARTON, BERNARD (1784-1849). Known as "the Quaker poet"; born in Carlisle, England; wrote *Metrical Effusions, Poems by an Amateur*, and *Poems*. These brought the friendship of Southey and Lamb. His later works include *Napoleon and Other Poems*, and *Household Verses*.

BASHKIRTSEFF, MARIE (1860-1884). Russian artist and diarist. Though young, her paintings showed great promise, but her fame was secured by her *Journal de Marie Bashkirtseff*, a diary begun when 13 and continued till her death.

BATES, ARLO (1850-). An American author; born in East Machias, Maine. His chief novels are *The Pagans, The Puritans*, and *Love in a Cloud*. Among his poetical works are *Berries of the Brier, Sonnets in Shadow, Told in the Gate, The Torchbearers*.

BAYLE, PIERRE (1647-1706). Born at Carla, France; known chiefly as the author of the famous *Dictionnaire Historique et Critique*.

BAYLY, ADA ELLEN. See LYALL, EDNA.

BAZAN, EMILIA PARDO (1851-). Spanish critic and novelist, a leader of the naturalistic school. Her strongest novels are *La madre naturaleza* and *Los pazos de Ulloa*.

BEAUMARCHAIS, PIERRE AUGUSTIN CARON DE (1732-1799). The most important French dramatist of the eighteenth century. His two successful plays are *Le Barbier de Séville* and *Le Mariage de Figaro*.

BEAUMONT, FRANCIS (1584-1616). An English poet and dramatist whose name and works are inseparably associated with **FLETCHER, JOHN** (1579-1626). They wrote fifty-four plays, among the best of which are *Philaster, Maid's Tragedy, The Faithful Shepherdess*.

BECKFORD, WILLIAM (1759-1844). An English author. At 17 he wrote *Biographical Memoirs of Extraordinary Painters*, a satire on biographical writing. His home in Portugal was the "paradise" of Byron's *Childe Harold*.

BECQUER, GUSTAVO ADOLFO (1836-1870). Spanish author of poems and prose legends. Of the latter, the best known is *Leyendas españolas*.

BEDDOES, THOMAS LOVELL (1803-1849). An English dramatist. Among his works are *Improvisatore, The Bride's Tragedy, Death's Jest Book*.

BEDE, BEDA, or **BÆDA,** styled **THE VENERABLE** (about 673-735). The greatest name in the literature of Saxon England; one of the most distinguished scholars of his age. [See Eng. Lit.].

BEERS, ETHELINDA (ELIOT) (1827-1879). An American poetess who wrote under the name of **ETHEL LYNN.** She was a descendant of John Eliot, the Apostle to the Indians. Best known for her war lyric, *All Quiet Along the Potomac*.

BELLMAN, KARL MIKAEL (1740-1795). Swedish lyric poet and improvisator, the most original figure in Swedish literature. His most important works are found in *Fredmans Epistlar* and *Fredmans Sänger*, collections of verse.

BELLO, ANDRES (1781-1865). Spanish-American writer; born at Caracas. Among his many important works are *Principios de derecho internacional* and *Castellana, dedicado al uso de los Americanos*.

BELOT, ADOLPHE (1829-1890). A French novelist and dramatist; born in Guadalupe. His best-known novels are *Le drame de la Rue de la Paix, Mademoiselle Giraud, La femme de feu*. His best remembered drama is *Parricide;* and his best comedy, *Sapho*, written in collaboration with Daudet.

BELZONI, GIOVANNI BATTISTA (1778-1823). An Italian Egyptologist. He made the first thorough examination of the great Pyramid (1818). He published *Narrative of the Operations and Recent Discoveries within the Pyramids, Temples, Tombs, and Excavations in Egypt and Nubia.*

BEMBO, PIETRO (1470-1547). One of the most celebrated Italian scholars of the sixteenth century. His collected works were published in four volumes in 1729.

BENJAMIN, PARK (1809-1864). An American poet; born at Demerara, British Guiana. His best-known poem is *The Old Sexton.*

BERANGER (*bay-ron-zha'*), **PIERRE JEAN DE** (1780-1857). A celebrated French song-writer. His *Roi d'Yvetot* was a gentle satire of Napoleon and made the poet popular.

BERGERAC (*berzh-rak'*), **SAVINIEN CYRANO DE** (1619-1655). A French author. His most famous book is *Histoire comique des états et empires de la Lune,* followed by a similar work on the sun.

BERNI, FRANCESCO (1498-1535). An Italian satiric poet. His chief poems are *Rime burlesche* and *Orlando Innamorato.*

BESANT, SIR WALTER (1836-1901). English man of letters; wrote a number of novels jointly with James Rice, and is the author of *All Sorts and Conditions of Men, Ready Money Mortiboy, The City of Refuge,* and *The Orange Girl.*

BETHUNE, GEORGE WASHINGTON, D.D. (1805-1862). An American writer; born in New York; author of *Lays of Love and Faith, Memoirs of Joanna Bethune,* his mother.

BEYLE, MARIE-HENRI (STENDHAL) (1783-1842). French novelist, art and literary critic. His works include notes of travel, essays, and novels which are studies of social types.

BHARTRIHARI. A Sanskrit writer of aphoristic verse, believed to have flourished in the first century.

BHAVABHUTI. (Flourished seventh century). A famous Sanskrit dramatist. Three dramas, the first, the *Malatimadhava,* called the Indian Romeo and Juliet, won him fame which he shares only with Sudraka, Kalidasa and Harsha.

BIELSKI (c. 1495-1575). Polish historian who, with his son Joachim wrote the first history ever published in the Polish language.

BIGELOW, POULTNEY (1855-). An American journalist; wrote *Some Recollections of A. P. Berryer, Molinos the Quietist, William Cullen Bryant, Life of Samuel J. Tilden.*

BIJNS, ANNA (c. 1494-1575). Dutch poet, known as the Sappho of Brabant.

BILDERDIJK, WILLEM (1756-1831). A Dutch poet and philosopher. [See Dutch Lit.].

BION OF SMYRNA (flourished about 280 B. C.). A bucolic and idyllic poet. He lived in the Greek colony at Sicily. We have seventeen of his short poems and his longer *Lament for Adonis,* which was a model for Shelley's *Adonais.*

BIRRELL, AUGUSTINE (1850-). An English essayist and critic. His *Obiter Dicta* (1884), gave him a place among English essayists. The second series appeared in 1887; wrote *The Life of Charlotte Brontë, Men, Women, and Books.*

BJORNSON (*be-yern'son*), **BJORNSTJERNE** (1832-1910). A Norwegian novelist, poet, and dramatist. *Arne* and *A Happy Boy* established his reputation as a novelist. His early dramas are mainly based on native sagas, except *Mary Stuart in Scotland* and *The Newly Wedded Pair.* His later dramas include *The Editor, A Bankruptcy, The King, Leonardo, The New System, A Glove, Beyond Our Strength,* and *Geography and Love.* [See Scand. Lit.].

BLACK, WILLIAM (1841-1898). English novelist. Among his thirty-four novels are *A Daughter of Heth, Strange Adventures of a Phaëton, A Princess of Thule, Macleod of Dare, Judith Shakespeare,* and *Yolande.*

BLACKIE, JOHN STUART (1809-1895). A Scottish author; professor of Greek in Edinburgh University (1852-1882). Among his works are *A Discourse on Beauty, Songs and Legends of Ancient Greece,* and *Self-Culture.*

BLACKMORE, RICHARD DODDRIDGE (1825-1900). An English novelist. Among his novels are *Clara Vaughn, Lorna Doone, The Maid of Sker, Alice Lorraine, Erema, Christowell, Springhaven, Perlycross,* and *Mary Anerley.*

BLAKE, WILLIAM (1757-1827). An English poet; in 1789, published *Songs of Innocence;* in 1794, *Songs of Experience,* showing two opposite states of the human soul. They contained about 60 fine engravings, his own work, remarkable in their peculiar originality. He has been called "the single Englishman of supreme and simple poetic genius of his time." His *Poetical Works* were collected and edited by W. M. Rossetti.

BLESSINGTON, MARGUERITE, COUNTESS OF (1789-1849). An English author and leader of society. Her most valuable work is *Conversations with Lord Byron,* which placed him in a more favorable light.

BLOOMFIELD, ROBERT (1766-1823). An English pastoral poet. In a comfortless garret he wrote his *Farmer's Boy,* which was translated into several languages. This was followed by *Rural Tales* and *Wild Flowers.*

BLOUET (*bloo-ay'*), **PAUL,** or **MAX O'RELL** (1848-1903). A French author. After the publication of *John Bull and His Island,* he made several lecturing tours of the United States. He wrote also *John Bull's Daughters, Friend Macdonald, Jonathan and His Continent,* and *A Frenchman in America.*

BLUNT, WILFRID SCAWEN (1840-). An English poet; wrote *Love Sonnets of Proteus,* containing a fine sonnet on Gibraltar; *Esther, Griselda, Quatrains of Youth,* and many other poems.

BOCCACCIO (*bok-kaht'cho*), **GIOVANNI** (1313-1375). Celebrated Italian novelist, author of the *Decameron.* He was the friend of Petrarch, and was among the first to establish the study of Greek literature in Italy. [See Ital. Lit.].

BODIN, JEAN (1530-1596). A French political writer. His greatest work is *Les Six Livres de la République.*

BODMER, JOHANN JAKOB (1698-1783). A German-Swiss poet and critic; translated Milton's *Paradise Lost* into German and did much to arouse an interest in English literature.

BODTCHER, LUDVIG (1793-1874). A Danish lyrist. [See Scandinavian Literature].

BOECE (*bois*) or **BOETHIUS, HECTOR** (1465-1536). A Scottish historian; born in Dundee. His fame rests on his *History of Scotland.*

BOE'THIUS, ANICUS MANLIUS TORQUATUS SEVERINUS (480-524). A Roman statesman and philosopher, called "the last of the classic writers." During imprisonment he wrote his famous *De Consolatione Philosophiae* in five books. He held high rank during the Middle Ages, until the introduction of the Aristotelian metaphysics in the thirteenth century.

BOGAERS, ADRIAAN (1795-1870). A Dutch poet. Two of his posthumous works, *Philological Papers* and a *Lexicon of Bilderdijks Poetical Works* were published in 1872 and 1878.

BOGDANOVITCH, IPPOLIT FEODOROVITCH (1744-1803). A Russian poet. The publication of the poem *Dushenka* brought him fame, and the favor of the court.

BOIARDO, MATTEO MARIA, COUNT OF SCANDIANO (about 1434-1494). An Italian poet; wrote *Orlando Innamorato,* an epic, which he left unfinished, and which suggested Ariosto's *Orlando Furioso.*

BOILEAU-DESPREAUX, NICHOLAS (1636-1711). The most famous French critic of the Age of Louis XIV.; called the "legislator of Parnassus"; wrote *Adieus of a Poet to the City of Paris* in 1660 and followed it with twelve other satires before 1666. His two masterpieces are *Art poétique,* and *Le Lutrin.*

BOLINGBROKE, VISCOUNT HENRY ST. JOHN (1678-1751). An English author, orator, and statesman; friend of Swift, Pope, and others; wrote *Dissertation on Parties. Letters on the Study of History.*

BORJESSON, JOHAN (1790-1866). Swedish lyric poet and dramatist. Wrote *Erik XIV., Blommor och Tarar vid en Dotters Graf.*

BORROW, GEORGE HENRY (1803-1881). An English author; wrote *Romantic Ballads, The Zincali,* his most important work on the gypsies in Spain; *The Bible in Spain, Lavengro, Romany Rye,* and *Wild Wales.*

BOSCAN-ALMOGAVER, JUAN (about 1493-about 1542). A Spanish poet, tutor of the duke of Alva; experimented with sonnets, blank verse, and the octave stanza, in imitation of Italian measures, and thus founded a new school of Spanish poetry.

BOSWELL, JAMES (1740-1795). A Scotch biographer; the son of Lord Auchinleck; born in Edinburgh. In 1791 appeared his *Life of Johnson.* Macaulay styled Boswell "the first of biographers." His other works include *Account of Corsica* and *Journal of a Tour to the Hebrides.*

BOUCICAULT, DION (1822-1890). A dramatic writer; born in Dublin; author of popular Irish plays, as *The Colleen Bawn* and *The Shaughraun.* Among his later works are *The Streets of London, Flying Scud,* and *After Dark.* He collaborated with Charles Reade on *Foul Play.*

BOURGET, PAUL (1852-). A notable French essayist and novelist. His father was Russian and his mother, English. His many novels include: *Le disciple, Drame de fille,* and *Nouveaux pastels.*

BOURINOT, SIR JOHN GEORGE (1837-1902). A Canadian historian; born in Sydney, Nova Scotia; wrote *Parliamentary Procedure and Practice, Manual of Constitutional History, Parliamentary Government of Canada, How Canada is Governed, Cape Breton and Its Memorials of the French Régime, Canada Under British Rule, Intellectual Development of the Canadian People,* and *Canada's Intellectual Strength and Weakness.*

BOWLES, CAROLINE ANNE (1787-1854). An English poetess, wife of Robert Southey; wrote *Chapters on Churchyards, The Young Gray Head,* and other poems. She was much praised by Christopher North, Coleridge, Professor Moir, and others.

BOWLES, SAMUEL (1826-1878). An American journalist; editor, for more than thirty years, of Springfield (Mass.) *Republican,* founded by his father. He wrote *Our New West* and *The Switzerland of America.*

BOWLES, WILLIAM LISLE (1762-1850). An English poet. His sonnets, by their "linking," as Professor Saintsbury has it, "of nature's aspect to human feeling," were much admired by Coleridge.

BOYD, ANDREW KENNEDY HUTCHINSON (1825-1899). A Scottish author and divine; gained great popularity as A. K. H. B., the writer of *Recreations of a Country Parson,* and other works.

BOYESEN, HJALMAR HJORTH (1848-1895). An Norwegian novelist; born at Frederiksvärn, Norway. His works include *Gunnar, Tales from Two Hemispheres, Falconberg, Ilka on the Hilltop,* and *A Daughter of the Philistines.* His critical essays include *Goethe and Schiller, Literary and Social Silhouettes, Essays on Scandinavian Literature.* His poems are *Idylls of Norway.*

BRADDON, MARY ELIZABETH (MRS. JOHN MAXWELL) (1837-). A popular novelist; born in London; authoress of *Lady Audley's Secret, Aurora Floyd,* and some 50 other novels.

BRADSTREET, ANNE (about 1612-1672). An American poet; born in England; a daughter of Governor Thomas Dudley; married the future Governor Bradstreet (1630), and became a voluminous writer.

BRADY, CYRUS TOWNSEND (1861-). An American author; born in Allegheny, Pa. His best work is *Recollections of a Missionary in the Great West,* and several works of fiction, including *For Love of Country* and *Woven with the Ships.*

BRANDES, GEORG MORRIS COHEN (1842-). A renowned Danish critic. His many works include *Danske Digtere, Mennesker og Værker i nyere Europæiske Literature,* and a valuable work on *William Shakespeare.*

BRANTOME, PIERRE DE BOURDEILLES, SEIGNEUR DE (?1540-1614). French chronicler, whose *Memoirs* are valuable for their portrayal of the manners and personages of the period.

BREDEROO, GERBRAND ADRIAENSS (1585-1618). Dutch comic dramatist. His works include the farce *Kluchten,* the comedies *Moortje* and *Spaansche Brabander Jerolimo,* and a volume of poems, *Groot Liedboeck.*

BREMER, FREDRIKA (1801-1865). A Swedish novelist; born near Abo, Finland. She wrote *Sketches of Every Day Life, The H. Family, Homes in the New World, The Neighbors, The Four Sisters,* etc.

BROCKES, BARTHOLD HEINRICH (1680-1747). German poet; his chief work is *Irdisches Vernügen in Gott.*

BRODZINSKI, KAZIMIERZ (1791-1835). Polish poet. The idyll *Wieslaw* is his most important work.

BRONTE, ANNE (1820-1849). Sister of Charlotte Brontë; author of *Agnes Grey* and *Tenant of Wildfell Hall.* [See Eng. Lit.].

BRONTE, CHARLOTTE (1816-1855). An English author; born at Thornton, Yorkshire; removed with her father, at the age of four, to Haworth, a moorland parish in the same county, where she lived most of her days; spent two years at Brussels as a student; on her return, in conjunction with her sisters, prepared and published a volume of poems under the pseudonyms respectively of "Currer Bell," "Ellis Bell," and "Acton Bell," which proved a failure. Nothing daunted, she set to novel writing and her success was instant; first *Jane Eyre,* then *Shirley,* and then *Villette,* appeared, and her fame was established. In 1854 she married her father's curate, Mr. Nicholls. [See Eng. Lit.].

BRONTE, EMILY (1818-1848). Sister of Charlotte; author of a novel, *Wuthering Heights.* Her poetry was highly praised by Matthew Arnold. [See Eng. Lit.].

BROOKE, STOPFORD AUGUSTUS (1832-). An English author; wrote *Life and Letters of Frederick W. Robertson, Theology in the English Poets, A Primer of English Literature, Sermons, Poems, Study of Tennyson, English Literature to the Norman Conquest.*

BROUGHAM, HENRY PETER, LORD BROUGHAM AND VAUX (1778-1868). A British statesman, orator, and author. In 1802 he helped to found the Edinburgh *Review.* The article on Byron's *Hours of Idleness* provoked the poet to write his *English Bards and Scotch Reviewers.* He left a memoir, *Life and Times.*

BROUGHTON, JOHN CAM HOBHOUSE, BARON (1786-1869). An English statesman and writer. He was a friend of Byron, and published in 1813 his *Journey Through Albania with Lord Byron.*

BROUGHTON, RHODA (1840-). A popular English novelist. Among her works are *Cometh Up as a Flower, Not Wisely but too Well, Red as a Rose is She, Nancy, Belinda, Doctor Cupid, Alas!*

BROWN, CHARLES BROCKDEN (1771-1810). An American novelist and editor; born in Philadelphia. His first novel, *Wieland, or the Transformation,* came out in 1798, followed by *Arthur Mervyn, Ormond, Edgar Huntley,* and *Clara Howard.* He was the first really professional American man of letters.

BROWN, JOHN (1810-1882). A Scotch physician and author; wrote the widely read *Rab and His Friends.*

BROWNE, CHARLES FARRAR, or **"ARTEMUS WARD"** (1834-1867). An American humorist; born at Waterford, Me. He delivered his first humorous lecture, *The Babes in the Wood,* in Brooklyn, and it was so successful that he abandoned journalism for the lecture platform. He published *Artemus Ward, His Book; Artemus Ward, His Travels* and *Artemus Ward in London.*

BROWNE, FRANCIS FISHER (1843-). An American editor, poet, and critic; born at South Halifax, Vt. He wrote *Everyday Life of Abraham Lincoln,* and *Volunteer Grain.*

BROWNE, SIR THOMAS (1605-1682). An English philosopher and writer He began life as a medical practitioner. His best works are the famous *Religio Medici* and the *Hydriotaphia or Urn-Burial.*

BROWNELL, WILLIAM CRARY (1851-). American writer; author of *French Traits, French Art, Victorian Prose Masters.*

BROWNING, ELIZABETH BARRETT (1806-1861). A distinguished English poetess, regarded by some as the greatest which England has ever produced; wrote *Sonnets from the Portuguese, Aurora Leigh, The Seraphim and Other Poems.* In 1846 she was married to Robert Browning.

BROWNING, ROBERT (1812-1889). One of the greatest of the Victorian poets; born in Camberwell, England. At the age of twenty he traveled on the continent and resided for some time in Italy. In 1846 he married Elizabeth Barrett, and settled with her in Florence, where they remained for nearly fifteen years. Recognition of his literary fame, which came slowly, was made in 1867, when he was elected an honorary fellow of Balliol, and an M.A. of Oxford. He died in Venice and was buried in Westminster Abbey between Cowley and Chaucer. [See Eng. Lit.]

BRUNETIERE, FERDINAND (1849-1906). The greatest systematic critic of contemporary French literature. His greatest work is his *Manuel de l'histoire de la littérature française.*

BRYANT, WILLIAM CULLEN (1794-1878). American poet and journalist; born in Massachusetts; entered Williams College, read law, admitted to the bar in 1815; published *Thanatopsis* in 1817; became editor of the New York *Evening Post* in 1828.

BRYCE, JAMES. (See Dictionary of Government). He wrote *The American Commonwealth*, which gives probably the best account ever written of the national institutions in relation to the history, the habits, and the character of the American people.

BUCHANAN, ROBERT WILLIAM (1841-1901). An English poet, dramatist, and novelist; wrote *Undertones, London Poems.* He wrote a number of novels, as *God and the Man* and *The Wandering Jew.*

BUCKLE, HENRY THOMAS (1821-1862). An English historian. The *History of Civilization*, the first volume of which appeared in 1857, made Buckle famous. He left his work unfinished.

BULFINCH, THOMAS (1796-1867). An American author; born at Boston, Mass. His *Age of Fable* is a perennial favorite and was revised (1881) by Edward Everett Hale. Bulfinch also published *Hebrew Lyrical History, The Age of Chivalry*, and *Oregon and the Eldorado.*

BULKELEY, PETER (1583-1659). American clergyman. His *Gospel Covenant* represents the "intellectual robustness of New England in the first age."

BULWER-LYTTON, EDWARD GEORGE EARLE, LORD LYTTON (1803-1873). An English novelist, playwright, and poet. Altogether his works exceed 60 in number, and fill 110 volumes. He wrote several plays which have long kept the stage: *The Lady of Lyons, Richelieu*, and *Money.* His first successful novel was *Pelham* (1828). It was followed by *Ernest Maltravers, Alice, Night and Morning, The Caxtons, My Novel, Kenelm Chillingly, Paul Clifford, Eugene Aram, Devereux, Last Days of Pompeii, Rienzi*, and *Leila.*

BUNNER, HENRY CUYLER (1855-1896). An American humorist and novelist; born in Oswego, N. Y. He wrote *Zadok Pine, Short Sixes, More Short Sixes, Love in Old Cloathes, Jersey Street and Jersey Lane*, and *The Midge.* His poems are collected in *Airs from Arcady.*

BUNYAN, JOHN (1628-1688). English author; the son of a tinker. He followed that vocation and led for many years a wandering life; served in the Parliamentary army; joined the Nonconformists in 1653, and in 1655 became a minister. He wrote *The Life and Death of Mr. Badman* and *Grace Abounding*, masterpieces of realistic literature; was imprisoned for more than twelve years, and during that time wrote his *Pilgrim's Progress*, his masterpiece.

BURGER, GOTTFRIED AUGUST (1747-1794). A German poet; born in Anhalt. His best ballad is *Lenore*, which was a potent influence in the revival of the ballad. Bürger also revived the sonnet in German.

BURKE, EDMUND (1729-1797). Irish orator, statesman, and writer. He wrote *Vindication of Natural Society, Essay on the Sublime and Beautiful, European Settlements in America, On the Cause of the Present Discontents, American Taxation, Conciliation with America*, and *Reflections on the Revolution in France.*

BURNETT, FRANCES ELIZA HODGSON (1849-). An Anglo-American novelist; born in Manchester, England; the wife of Stephen Townsend. Her chief work is *Little Lord Fauntleroy.* She wrote also *That Lass o' Lowrie's, Haworth's, A Fair Barbarian, Through One Administration*, and *The Making of a Marchioness.*

BURNS, ROBERT (1759-1796). Scotland's national poet; born in a clay-built cottage less than two miles south of the town of Ayr. *The Cottar's Saturday Night, To Mary in Heaven, Highland Mary, Scots Wha Hae Wi' Wallace Bled, The Jolly Beggars, Tam O' Shanter*, are among his best poems and typical of his style. [See Eng. Lit.].

BURROUGHS, JOHN (1837-). An American essayist and naturalist. His literary achievements are the outcome of his keen observation of nature and animal life. All his works bear the mark of his delightful originality.

BURTON, ROBERT (1577-1640). An English clergyman; author of the *Anatomy of Melancholy*, which he wrote to alleviate his own depression of mind, a book which is a perfect mosaic of quotations.

BUSTAMANTE, CARLOS MARIA DE (1774-1848). A Mexican historian; his works include *Cuadro historico de la revolición Mexicana*, published in eight volumes.

BUTLER, SAMUEL (1612-1680). An English satirist, author of *Hudibras*, the hero of which is Sir Samuel Luke, one of Butler's masters. It is a kind of metrical *Don Quixote* and ridicules the Puritans.

BUTLER, WILLIAM ALLEN (1825-1902). An American lawyer and satirical poet, son of Benjamin F. Butler. He is best known by his satire, *Nothing to Wear*, which was published anonymously in 1857.

BUTTERWORTH, HEZEKIAH (1839-1905). An American author, poet, and juvenile writer; born at Warren, R. I.; wrote *Zigzag Journeys* (1876-1890), *A Knight of Liberty, The Boyhood of Lincoln, The Wampum Belt*, and *In Old New England.*

BYLES, MATHER (1706-1788). An American poet, and distinguished pulpit orator. His published sermons were noteworthy, but his poems received an undue amount of praise from his contemporaries.

BYRON, GEORGE GORDON NOEL, LORD (1788-1824). English poet. In 1815 he married Anne Isabella Millbanke, but separated from her and left England in 1816. Espousing the cause of the Greeks in their struggle for liberty, he left for Greece in 1823, and died at Missolonghi from the effects of exposure while preparing for the siege of Lepanto. [See Eng. Lit.].

CABALLERO, FERNAN (1797-1877). A Spanish novelist whose real name was Cecilia Bohl von Faber. Her first success in a literary line was *La Gaviota.* She was the first to publish a collection of Spanish popular tales.

CABLE, GEORGE WASHINGTON (1844-). An American novelist; born in New Orleans, La. His sketches of creole life in *Scribner's Monthly* proved so successful that in 1879 he turned his entire attention to literature. He has written *Creole Days, Strange True Stories of Louisiana, The Cavalier, The Grandissimes, Madame Delphine, Dr. Sevier, Bonaventure*, and *John March, Southerner.* His work is original and unique, and much appreciated. Since 1886 he has lived in Northampton, Mass.

CAEDMON (*kad'mon*) (flourished 670). An English poet. The fragment of a hymn, or *Paraphrase*, written by him and preserved by Bede, is the oldest specimen of English poetry extant.

CAESAR, GAIUS JULIUS. (See Dictionary of Government). Most of Caesar's writings have been lost, though we have his invaluable *Commentaries.* This was first printed at Rome in 1449. He has never been surpassed as a historian; his style is simple and vigorous. The value of his works is enhanced by the truthfulness of the accounts of the events which he records, of many of which he was an eyewitness.

CAINE, THOMAS HENRY HALL (1853-). An English novelist and dramatist; born in Runcorn, Cheshire, England. His novels, which are striking in their pictures of human motives and passions, are read throughout the world; wrote *The Manxman, The Christian, The Shadow of a Crime, The Deemster, The Bondman, The Scapegoat*, and *The Eternal City.*

CALDERON DE LA BARCA (1600-1681). The great Spanish dramatist; born at Madrid; entered the army and served in Italy and Flanders, producing the while dramas which were received with great enthusiasm; took holy orders, and became a canon of Toledo. There survive 120 regular plays and 80 *autos* or religious plays. Of the former the best known are *El alcalde de Zalamea, El principe constante, La dama duende* (The Fairy Lady), and *El mayor monstruo los zelos* (No Monster Like Jealousy). [See Sp. Lit.].

CALDERON, SERAFIN ESTEBANEZ (1801-1867). Spanish writer, author of *Escenas andaluzas*, sketches of Andalusian life; *El solitario* (poems), and the novel, *Cristianos y Moriscos.*

CALLIMACHUS (about 310-240 B. C.). A Greek poet and grammarian of the Alexandrine school. He taught Eratosthenes, Aristophanes, and other leading Greek scholars. He left behind over 800 books. The most important are *The Tablets*, in 120 books; four books of *Causes; Berenice's Lock*, an elegy, and an idyllic poem, *Hecate.*

CALLISTHENES (about 360-328 B. C.). A Greek historian; born in Olynthus. He wrote several historical works, of which only fragments have survived.

CALLISTRATUS (flourished 375 B. C.). The greatest Athenian orator of his day; born at Aphidnae. His oration on the cause of Oropus made a great impression on Demosthenes, who heard it when a boy.

CALVERLEY, CHARLES STUART (1831-1884). An English writer of humorous verse, hymns, and *vers de société*; parodied and wrote examination papers on *Pickwick Papers*; wrote *Verses and Translations, Translations into English and Latin* (especially felicitous), *Theocritus in English Verse*, and *Fly Leaves.*

CAMDEN, WILLIAM (1551-1623). An English historian and antiquarian; born in London and known

as the "British Pausanias." His famous work is *Britannia*, an account of the British Isles from the earliest ages, written in elegant Latin and published in 1586. He wrote also *Annals of the Reign of Elizabeth, A Collection of Ancient English Historians, Monuments and Inscriptions of Westminster Abbey*, and *A Narrative of the Gunpowder Plot.*

CAMOENS, LUIZ DE (1524-1580). The greatest poet of Portugal; born at Lisbon; studied at Coimbra; fell in love with a lady of high rank in Lisbon, and she with him, but they were not allowed to marry; left Lisbon, joined the army, and fought against the Moors; volunteered service in India, arrived at Goa, and got into trouble with the Portuguese authorities; went to Macao, and consoled himself by writing his *Lusiad;* coming home he lost everything but his poem; died neglected and in poverty. It is the Portuguese national epic, called, not inaptly, the *Epos of Commerce.* [See Port. Lit.]

CAMPBELL, THOMAS (1777-1844). A Scotch poet; was interred at Poets' Corner, in Westminster Abbey, close to the tomb of Addison. Some of his poems have gained a permanent place in literature, as *The Battle of the Baltic, Hohenlinden, Ye Mariners of England, The Exile of Erin*, and *Lochiel's Warning.* His longer works are *The Pleasures of Hope* and *Gertrude of Wyoming.*

CAMPBELL, WILLIAM WILFRED (1861-). Canadian lyric and dramatic poet. Author of *Beyond the Hills of Dreams, Lake Lyrics*, and *Mordred and Hildebrand Tragedies.*

CAMPOAMOR Y CAMPOOSORIO, RAMON DE (1817-1901). Spanish politician, philosopher, and author; most popular and perhaps the greatest of modern Spanish poets. [See Span. Lit.]

CANTU, CESARE (1804-1895). An Italian historian and novelist. During imprisonment he wrote his popular romance, *Margherita Pusterla.* His greatest works are *Storia universale*, in 35 volumes; *History of the Italians, History of Italian Literature, Independence of Italy*, and *Milan, A History of the People for the People.*

CAPUANA, LUIGI (1839-). Italian novelist and critic. A "realist," his best known novel is *Giacinta.*

CARDUCCI, GIOSUE (1836-1907). An Italian poet. His chief works are *Juvenilia, Levia gravia, I Decennali, Odi barbare, Nuove odi barbare*, and *Terze odi barbare.* His prose works of remarkable critical value are *Studi letterarii* and *Bozetti critici.*

CARLETON, WILL (1845-). An American poet; born in Hudson, Mich. His *Poems* appeared in 1871 and were followed by *Farm Ballads, Farm Legends, Young Folks' Centennial Rhymes, City Ballads, City Festivals, Rhymes of Our Planet.*

CARLYLE, THOMAS (1795-1881). A Scottish author; born in Ecclefechan, Dumfriesshire, Scotland. He was the eldest son of James Carlyle, a mason, afterward a farmer, and was intended for the Church, with which object he was carefully educated. His first literary productions were short biographies and other articles for the *Edinburgh Encyclopædia.* His career as an author may be said to have begun with the issue in monthly portions of his *Life of Schiller* in the *London Magazine* in 1823, this work being enlarged and published separately in 1825. The largest and most laborious work of his life was *The History of Frederick II. of Prussia, called Frederick the Great*, the last two volumes of which appeared in 1865, and after this time little came from his pen. *Sartor Resartus, French Revolution, Past and Present*, and *Heroes and Hero-worship* are among his best known works. [See Eng. Lit.].

CARMAN (WILLIAM) BLISS (1861-). A Canadian poet and author; born at Fredericton, N. B.; wrote *Low Tide on Grand Pré, Songs from Vagabondia, Behind the Arras, A Sea Mark, Ballads of Lost Haven, By the Aurelian Wall, More Songs from Vagabondia, Last Songs from Vagabondia*, and *The Kinship of Nature.* The *Vagabondia* series were written in collaboration with Richard Hovey. [See Can. Lit.].

CARPIO, MANUEL (1791-1860). Mexican physician, politician, and poet. His collected poems have gone through several editions.

CARY, ALICE (1820-1871). An American poet; born near Cincinnati, Ohio. Her works include *The Clovernook Papers, Married not Mated, Pictures of Country Life*, and *The Bishop's Son.*

CARY, HENRY FRANCIS (1772-1844). An English clergyman and writer; noted for his famous *Translation of Dante, Pindar's Odes, Birds of Aristophanes.*

CARY, PHOEBE (1824-1871). An American poet and prose writer, sister of Alice; born in Cincinnati, Ohio. These two poets worked together and published *Poems of Alice and Phoebe Cary* in 1850. Phoebe published *Poems and Parodies* and numerous hymns.

CASGRAIN, HENRI RAYMOND (1831-). Canadian historian. His works include *Légendes canadiennes, Biographies canadiennes, L'histoire de la Marie de l'Incarnation.*

CASTELAR, EMILIO (1832-1899). A Spanish republican leader, orator, and writer; born in Cadiz; wrote *La cuestion del oriente, Historia del descubrimiento de America*, and *La politique européenne.*

CASTIGLIONE, BALDASSARE, COUNT (1478-1529). Italian statesman and author, noted for his many talents and wide knowledge. His chief work is the famous *Libro del cortegiano*, written in 1528, which Dr. Johnson pronounced "the best book that was ever written upon good breeding." It is in four parts, forming a series of imaginary dialogues between distinguished men and noble ladies, upon varied subjects. It was one of the most popular books of the period in Italy. In his *Lettere* he gives many interesting contributions to the literature and history of the period.

CASTLE, EGERTON (1858-). An English novelist. His novels include *Consequences, The Light of Scarthey, The Pride of Jennico, The Bath Comedy*, and *Young April.* He wrote plays for Irving and Mansfield.

CATHERWOOD, MARY HARTWELL (1847-1902). An American novelist; born at Luray, Ohio. Among her works are *Craque o' Doom, The Romance of Dollard, The Story of Tonty, The Lady of Fort St. John, Old Kaskaskia, Lazarre, The Days of Jeanne D'Arc*, and *The White Islander.*

CATLIN, GEORGE (1796-1872). An American traveler, artist, and author; born at Wilkesbarre, Pa. He published *The Manners, Customs, and Conditions of the North American Indians, The North American Portfolio of Hunting Scenes, Eight Years' Travel and Residence in Europe, The Breath of Life*, and *Rambles Among the Rocky Mountains and the Andes.*

CATS, JAKOB (1577-1660). A Dutch poet. He wrote *Maiden Duty, Inward Strife, Manly Respectability, Marriage, Fidelity, Betrothal Ring, Age and Country Life.* [See Dutch Lit.].

CAVALCANTI, GUIDO (about 1250-1300). Florentine lyric poet. The canzone on the *Essence of Love* is his most famous poem.

CAVALLOTTI, FELICE (1824-1898). Italian writer and politician. Bitterly attacked Germany in *Germania e Italia.* Author of lyrics and dramas.

CAVENDISH, GEORGE (1500-about 1561). An English author, the biographer of Cardinal Wolsey. He entered Wolsey's service and remained his constant friend. The *Life of Wolsey* was written in 1557 and published 1641.

CAWEIN, MADISON JULIUS (1865-). An American poet; born in Louisville, Ky. His poems include *Blooms of the Berry, The Triumph of Music, Lyrics and Idyls, Days and Dreams, Moods and Memories, Undertones*, and *One Day and Another.*

CAXTON, WILLIAM (1422-1491). An English printer and scholar. His *Recuyell* (collection) *of the Historyes of Troye*, translated by him from the French, appears to have been printed in 1474, most probably at Bruges in Belgium. It was the first book printed in the English tongue. He set up a printing office in Westminster (1477). He is known to have printed 99 books, of which 38 survive. [See Eng. Lit.].

CERVAN'TES SAAVEDRA, MIGUEL DE (1547-1616). Author of *Don Quixote* and one of the greatest writers of modern times; born in Alcalá de Henares. Two of his plays survive—*Life in Algiers* and *Numantia*, the first worthless, the second the admiration of such authors as Goethe. He wrote also *Exemplary Tales* and *Voyage to Parnassus.* [See Sp. Lit.].

CHAMBERS, ROBERT WILLIAM (1865-). An American author; became first an illustrator; since 1903 devoted time to literature; *The King in Yellow, Ashes of Empire, The Conspirators, The Fighting Chance, The Firing Line*, etc., besides two plays.

CHAMFORT, SEBASTIEN ROCH NICOLAS (1741-1794). French epigrammatist. His aphorisms, *Maximes et pensées*, are keen and incisive.

CHAMISSO, ADELBERT VON (1781-1838). A German poet and scientist; born in France. His most noteworthy prose work is *Peter Schlemil.* Among his poems are the *Lion's Bride* and *Cousin Anselmo.*

CHAPMAN, GEORGE (about 1559-1634). An English poet and dramatist. Among his plays are *The Blind Beggar of Alexandria, All Fools, Eastward Ho! The Widow's Tears,* and *Caesar and Pompey.* He was the first translator of *Homer* into English verse.

CHARTIER, ALAIN (about 1390-about 1440). French poet and diplomatist. Author of patriotic and love poems, the political work *Le Quadrilogе Invectif,* and *Bréviarie des Nobles.*

CHATEAUBRIAND (*shah-to-bre-on'*), **FRANCOIS RENE AUGUSTE, VICOMTE DE** (1768-1848). A French author; born in St. Malo, Brittany. His style did much to mold French literature; wrote also *René, Atala, Les Natchez, Les aventures du dernier des Abencérages,* and translated Milton's *Paradise Lost.* His *René* and *Atala* mark the beginning of the Romantic School of French literature. [See Fr. Lit.].

CHATTERTON, THOMAS (1752-1770). An English poet. During his short career he indulged a mania for forging old manuscripts, which deceived for a time even Walpole himself. He wrote the "Rowley poems" in the name of one Thomas Rowley, a mythical monk of the fifteenth century. The "Rowley poems" were collected after Chatterton's death by T. Tyrwhitt in 1777 and published.

CHAUCER, GEOFFREY (1340-1400). "The father of English poetry"; born in London. His most celebrated work, *The Canterbury Tales,* was written at different periods between 1373 and 1400. It consists of a series of tales in verse, supposed to be told at the Tabard Inn by a company of pilgrims to the shrine of St. Thomas à Becket at Canterbury in 1386. In its pages we get such pictures of English life and English ways of thought in the fourteenth century as are found nowhere else. He wrote several minor poems, the *Complaint to Pity, Complaint to His Purse,* translation of *The Romance of the Rose.* He invented the seven line stanza and the heroic couplet extensively used by Dryden, Pope, and many others. He was buried in Westminster Abbey. [See Eng. Lit.].

CHENEY, JOHN VANCE (1848-). An American librarian and poet; born at Groveland, N. Y. His chief poetical works are *Thistle-Drift, Queen Helen and Other Poems, Out of the Silence,* and *For Thinking Hearts.*

CHENIER (*sha-nya'*), **ANDRE MARIE DE** (1762-1794). A French poet. His mother was a Greek and Chenier displayed remarkable aptitude for adapting Greek poems to French ideals. In 1791 he wrote the *Jeu de Paume,* a superb Pindaric ode on the meeting of the Third Estate. While waiting execution in Saint-Lazare prison he wrote his most famous poems, a denunciation of the Convention and the exquisite *Jeune Captive,* dedicated to his fellow prisoner, afterwards the countess of Fleury.

CHERBULIEZ, CHARLES VICTOR (1829-1899). A French novelist. His first successful novel was *Le comte Kostia.* The best of an immense number are *Prosper Randoce, Ladislas Bolski, Miss Rovel, Meta Holdenis,* and *Samuel Brohl et Cie.*

CHESTERFIELD, PHILIP DORMER STANHOPE, EARL OF (1694-1773). Statesman, orator, and man of letters; born in London; celebrated for his *Letters to his Son.*

CHILD, LYDIA MARIA FRANCIS (1802-1880). An American author; born at Medford, Mass. Her works include the novels *Hobomok, The Rebels, Philothea,* probably her best work.

CHITTY, JOSEPH (1776-1841). An English lawyer and legal writer. His celebrity rests mainly upon his legal works, which include *Treatise on Parties to Actions and to Pleadings, Treatise on Criminal Law, Synopsis of Practice, Treatise on Bills of Exchange and Promissory Notes,* and *Treatise on the Law of Nations.*

CHURCHILL, WINSTON (1871-). An American author; born in St. Louis, Mo. He wrote *Richard Carvel, The Crisis, The Crossing,* and *Coniston.*

CHURCHILL, WINSTON LEONARD SPENCER (1874-). An English author, son of Lord Randolph Churchill; wrote *The Story of the Malakand Field Force, The River War, Savrola, London to Ladysmith via Pretoria,* and *Ian Hamilton's March.*

CIBBER, COLLEY (1671-1757). English actor, dramatist, and poet laureate. His entertaining autobiography is entitled *Apology.*

CICERO, MARCUS TULLIUS (106-43 B. C.). A Roman orator; born in Arpinum. He was one of the greatest orators the world has known. He was executed at the instance of the Triumvirate—Octavianus, Antony, and Lepidus. His works include *De Oratore, De Republica, De Legibus, De Senectute, De Amicitia, De Officiis, De Natura Deorum,* and there remain to us 57 orations, of which the most famous are the four against Catiline, 14 Philippics against Antony, those on behalf of Archias, L. Murena, and Marcus Caelius.

CLARETIE, JULES (properly **ARSENE ARNAUD**) (1840-). A French author who became famous as a dramatist and dramatic critic. He is best known for his novels and historical works. Among the former are *L'Assassin Les Muscadins,* and *Le Prince Zilah,* both of which established his reputation; in the drama *Monsieur le Minister, Puyjoli, L'Accusateur,* and others. In 1888 he was elected to the French Academy.

CLARKE, CHARLES COWDEN (1787-1877). An English author; wrote *Tales from Chaucer, Shakespeare Characters, Molière Characters, Recollections of Writers.*

CLARKE, MacDONALD (1798-1842). An American poet; born in Bath, Me. From his eccentricities he was known as the "Mad Poet." Best known by his expression, "Now Twilight lets her curtain down, and pins it with a star." Among his works are *A Review of the Eve of Eternity, The Elixir of Moonshine by the Mad Poet,* and *A Cross and a Coronet.*

CLAUDIANUS, CLAUDIUS (flourished 400). A Latin poet; born in Alexandria; went to Rome (395). We have two of his epics, *The Rape of Proserpina* and *The Battle of the Giants,* besides some fragments.

CLAUDIUS, MATTHIAS (1740-1815). German poet and author. His collected works are published under the title *Asmus Omnia Sua Secum Portans.*

CLEMENCEAU, GEORGES BENJAMIN EUGENE (1841-). A French politician and writer. Losing his seat in the Chamber of Deputies (1892) through the Panama disclosures, for the next ten years he devoted himself to literature; wrote for and edited his radical journal, *La Justice;* published *Les massacres d'Arménie;* a series of articles in favor of Dreyfus; several works of fiction and essays.

CLEMENS, SAMUEL LANGHORNE, or **"MARK TWAIN"** (1835-1910). An American humorist; born in Florida, Mo.; his first book, *The Jumping Frog;* visit to Europe described in *Innocents Abroad; Roughing It;* wrote *Huckleberry Finn, Tom Sawyer, Tramp Abroad;* with Warner produced a drama entitled *The Gilded Age;* wrote *The Stolen White Elephant, The Prince and Pauper, A Connecticut Yankee at King Arthur's Court, The American Claimant, The £1,000,000 Bank Note, The Tragedy of Pudd'nhead Wilson, Tom Sawyer Abroad, Personal Recollections of Joan of Arc, More Tramps Abroad, Following the Equator, The Man that Corrupted Hadleyburg, A Double-Barreled Detective Story, Adam's Diary,* and *Christian Science;* compiled the *Memoirs of General Grant.*

CLOUGH (*kluf*), **ARTHUR HUGH** (1819-1861). A lyric poet; born at Liverpool; educated at Rugby under Dr. Arnold. He wrote *Dypsicus,* the *Bothie of Toberna-Vuolich,* and *Amours de Voyage,* besides shorter poems. Matthew Arnold wrote his famous elegy, *Thyrsis,* to commemorate Clough.

COBBETT, WILLIAM (1762-1835). An English political writer; spent some time in the United States; taught English to French emigrants, one of whom was Talleyrand. His best known works are *Grammar of the English Language, Rural Rides, Cottage Economy, Advice to Young Men and Women, History of the Protestant Reformation,* and *Life and Adventures of Peter Porcupine,* which is an autobiography.

COFFIN, CHARLES CARLETON (1823-1896). An American war correspondent, novelist, and juvenile writer. His works include *Days and Nights on the Battlefield, Following the Flag, Boys of '76, Story of Liberty, Old Times in the Colonies, Life of Garfield,* and *Daughters of the Revolution.*

COLERIDGE, HARTLEY (179611849). English poet, biographer, and essayist; son of S. T. Coleridge; best known by his verse, particularly his sonnets, which are among the finest examples in English. Such are "Whither," "To Shakespeare," "Prayer," "May, 1840," "Regrets," and "Ideality." His longest literary work was an edition of Massinger and Ford's dramas. He wrote their biographies and a series of Lives of the *Worthies of Yorkshire and Lancashire.*

COLERIDGE, SAMUEL TAYLOR (1772-1834). English poet, philosopher, and critic; educated at Christ's Hospital; had Charles Lamb for schoolmate; at Cambridge devoted himself to classics; falling into debt, enlisted as a soldier, but after four months his friends procured his discharge; married and lived near

Wordsworth, in Somersetshire, where he produced the *Ancient Mariner, Remorse,* and the first part of *Christabel;* took to opium, about 1808; broke off the habit in 1816, and went to stay with the Gillmans at Highgate as their guest, under whose roof, after four years' confinement to a sick-room, he died. Among his other works were *The Friend,* his *Biographia Literaria, Aids to Reflection, Confessions of an Inquiring Spirit, Literary Remains, Table Talk,* and *Kubla Khan,* which Swinburne calls "for absolute melody and splendor the first poem in the language." [See Eng. Lit.].

COLLETT, JAKOBINE CAMILLA (1813-1895). Norwegian author. The "emancipation of woman" is the underlying principle of her work. Her best novel is *The Magistrate's Daughters.*

COLLINS, WILLIAM (1721-1759). An English poet. His most popular ode is *The Passions.* Among his other poems are *To Liberty, To Mercy, To Evening, How Sleep the Brave Who Sink to Rest,* and *Song from Cymbeline.*

COLLINS, WILLIAM WILKIE (1824-1889). English novelist. His many novels include *No Name, Armadale, Man and Wife, The New Magdalen, The Law and the Lady, The Legacy of Cain,* and his two masterpieces *The Woman in White* and *The Moonstone.*

COLONNA, VITTORIA (1490-1547). An Italian poet; born near Rome; noted for her friendship for Michelangelo, whom she addresses as "Magnificent master."

COMINES, PHILIPPE DE (1445-1509). French statesman and historian. His *Mémoires* deal with the political history of his time, and strongly portray the character of Louis XI.

CONDORCET (*kon-dor-say'*), **MARIE JEAN ANTOINE NICOLAS CARITAT, MARQUIS DE** (1743-1794). A French mathematician and philosopher. His best known work is his *Esquisse d'un tableau historique des progrès de l'esprit humain.*

CONGREVE, WILLIAM (1670-1729). English comic dramatist; born near Leeds. *The Old Bachelor* first brought him into repute. The production of *Love for Love* and the *Mourning Bride,* a stilted tragedy, added immensely to his popularity, but his comedy, *The Way of the World,* being coldly received, he gave up writing plays, and wrote only a few verses afterwards. The oft quoted "Music hath charms to soothe the savage breast" occurs in the *Mourning Bride.*

CONSTANT DE REBECQUE, HENRI BENJAMIN (1767-1830). A French politician and novelist. His novel *Adolphe* is based on his friendship with Madame de Staël. Among his other works are *Mémoires sur les Cent Jours* and *De la religion.*

COOK, ELIZA (1818-1889). An English poet; born in London. She wrote *Lays of a Wild Harp, Melaia and Other Poems, Jottings from My Journal, New Echoes and Other Poems, God Speed the Plough, The Old Armchair,* and *The Star of Glengarry.*

COOK, JOSEPH (1838-1901). An American lecturer and author; born in Ticonderoga, N. Y. He published *Monday Lectures, The Higher Levels of Arbitration,* and *New Defences of the Lord's Day.*

COOKE, ROSE TERRY (1827-1892). An American poet and short story writer of New England life; born at West Hartford, Conn. She wrote *Steadfast, Happy Dodd, Somebody's Neighbors, The Sphinx's Children, Huckleberries,* and *Poems.*

COOPER, JAMES FENIMORE (1789-1851). An American novelist; born in Burlington, N. J. His novels achieved wide popularity; showed him an expert in the narration of events, the description of scenes, as well as in the delineation of character. His well known "Leather Stocking Series" of Indian tales have been translated into every European language. He also wrote *Wing and Wing, Red Rover, The Spy, The Pilot, The Last of the Mohicans, History of the Navy of the United States, Pathfinder, Deerslayer, Satanstoe, The Chainbearer,* and many others.

COPPEE, FRANCOIS EDOUARD JOACHIM (1842-1908). A French poet, dramatist, and novelist. He achieved some reputation among the younger poets, known as "Parnassiens," as early as 1866 by the publication of three volumes of verses: *Le reliquaire, Les intimités,* and *Poèmes modernes. Les humbles* first gave him popularity. Then followed *Le cahier rouge, Olivier, Une idylle pendant le siège, L'exilée, Les mois, Le naufragé.* The best of his dramas are *Le luthier de Crémone* and *Pour la couronne.* The best of his prose tales are *Fille de tristesse, Henriette, Madame Nunu,* and *Le coucher du soleil.*

CORDOVA Y FIGUEROA, PEDRO DE (1692-about 1770). Chilean historian, whose authoritative history of Chile from the conquest until 1717 has been published in the *Colección de historiadores de Chile.*

COREL'LI, MARIE (1864-). An English author; born in Italy; was adopted by Dr. Charles Mackay, the author. Among her works are *The Romance of Two Worlds, The Sorrows of Satan, Ziska, Jane, Thelma, The Master Christian, The Mighty Atom, The Boy,* and *Temporal Power.*

CORNEILLE (*kor-na'y'*), **PIERRE** (1606-1684). One of the greatest of French tragic poets; born at Rouen; was bred for the bar, but gave it up for literature; threw himself at once into the drama; began by dramatizing an incident in his own life, and became the greatest dramatic author of France. His best tragedies are *The Cid,* which indeed is his masterpiece; *Horace, Cinna, Polyeucte, Rodogune,* and *Le Menteur.* [See Fr. Lit.].

COWLEY, ABRAHAM (1618-1667). An English poet and essayist. His poetical inspiration came, he says, from reading Spenser's *Faerie Queene.* His collected works were published by him in 1656 and included *Elegies* on Harvey and Cranshaw, *Pindaric Odes, The Mistress,* and the *Davideis.* Dr. Johnson calls him a "metaphysical poet."

COWPER, WILLIAM (1731-1800). An English poet. His greatest poem is *The Task,* the subject for which was suggested to him by Lady Austen, who also told him the history of *John Gilpin.* He translated Homer (1784-1791). His friendship for Mrs. Unwin—the Mary of his poetry—caused the suggestion of *The Progress of Error, Truth, Table Talk,* and *Expostulation.* [See Eng. Lit.].

CRABBE, GEORGE (1754-1832). An English poet; born in Aldborough, Suffolk. Under Burke's patronage he wrote his best-known poem, *The Village.* Other poems are *The Newspaper, The Parish Register, The Borough, Tales in Verse,* and *Tales of the Hall.*

CRAIK, DINAH MARIA MULOCK (1826-1887). An English author. In 1865 she married George Lillie Craik, a partner in the publishing house of Macmillan and Company; wrote *John Halifax, Gentleman; Olive, Alice Learmount, Agatha's Husband, Christian's Mistake,* and *Poems of Thirty Years.*

CRANE, STEPHEN (1870-1900). An American novelist; wrote *Maggie, A Girl of the Streets; The Black Riders and Other Lines, The Red Badge of Courage, George's Mother, The Little Regiment, The Open Boat, On Active Service, Whilomville Stories,* and *The Master. Wounds in the Rain* and *Great Battles of the World* were published after his death.

CRASHAW, RICHARD (about 1613-1649). English religious poet; author of *Epigrammatum Sacrorum Liber* and *Steps to the Temple.*

CRAWFORD, FRANCIS MARION (1854-1909). An American novelist; born in Italy; during 1879-1880 was engaged in press work at Allahabad, India; wrote the National Ode at the Centennial of the American Constitution (September 17, 1887). His works, which are numerous, are chiefly novels and include *Mr. Isaacs, Dr. Claudius, A Roman Singer, Zoroaster, A Tale of a Lonely Parish, Saracinesca, Paul Patoff, Greifenstein, Sant' Ilario, A Cigarette-Maker's Romance, The Witch of Prague, Don Orsino, Pietro Ghisleri, The Ralstons, Casa Braccio, Corleone, Via Crucis,* and *In the Palace of the King.*

CRAWFORD, ISABELLA VALANCY (1851-1887). Canadian poet. Most of her works are contained in *Old Spookses' Pass, Malcolm's Katie,* and *Other Poems.*

CREASY, SIR EDWARD SHEPHERD (1812-1878). Chief justice of Ceylon; author of *The Fifteen Decisive Battles of the World, Imperial and Colonial Constitutions of the British Empire, History of the Ottoman Turks,* and *Historical and Critical Account of the Several Invasions of England.*

CREBILLON, PROSPER JOLYOT DE (1674-1762). French tragic poet. Won public notice by *Idoménée,* but his best work is *Rhadamiste et Zénobie.*

CREIGHTON MANDELL (1843-1901). English prelate and historian; Bishop of London (1897-1901). Besides his excellent *History of the Papacy,* his *Cardinal Wolsey* and *Age of Elizabeth* are worthy of special note.

CREVECOEUR, JEAN HECTOR ST. JOHN DE (1731-1813). French agriculturist, traveler and author, much of whose life was spent in America. His *Letters of an American Farmer* influenced immigration to this country.

CRITIAS (? -403 B. C.). An Athenian orator and poet; pupil of Socrates and of Gorgias; wrote tragic and elegiac poetry, historical prose, and orations.

CROCKETT, SAMUEL RUTHERFORD (1860-). A Scotch novelist. His works include *The Stickit Minister, The Raiders, The Lilac Sunbonnet, Lad's Love, The Standard Bearer, The Black Douglas, Kit Kennedy, Joan of the Sword Hand, The Dark o' the Moon,* and *The Banner of Blue.*

CROLY, JANE CUNNINGHAM, or **"JENNIE JUNE"** (1831-1901). An American author and journalist; born in England. Among her works are *For Better or Worse, Jennie Juniana, Thrown on Her Own Resources, Cookery Book for Young Housekeepers,* and *History of the Woman's Club Movement in America.*

CROZIER, JEAN BEATTIE (1849-). English writer on philosophy and history; born in Canada. Noted particularly for his *History of Intellectual Development.*

CUNNINGHAM, ALLAN (1784-1842). A Scottish poet and miscellaneous writer. Among his numerous works are *Songs of Scotland, Ancient and Modern; Traditional Tales of the English and Scottish Peasantry,* etc. He was the author of the old sea song, *A Wet Sheet and a Flowing Sea.*

CURTIN, JEREMIAH (1840-1907). An American linguist and translator. He translated the works of Sienkiewicz, Zagoskin, and Tolstoy, and wrote many books on folklore and mythology. He was more or less familiar with more than sixty languages.

CURTIS, GEORGE WILLIAM (1824-1892). An American author; born in Providence, R. I.; for many years the editor of *Harper's Weekly,* and the writer of the "Editor's Easy Chair" in *Harper's Monthly,* besides *Prue and I, Trumps, Potiphar Papers,* and *Eulogy on Wendell Phillips.* Charles Eliot Norton edited his *Orations and Addresses.*

CYNEWULF or **CYNWULF** (about 750-about 825). A writer of some of the best Old English or Anglo-Saxon verse: *Juliana,* on the martyrdom of St. Juliana; *Elene,* on the discovery of the true cross by Empress Helena; *Christ, Fates of the Apostles, Andreas or the Legend of St. Andrew.*

DA COSTA, ISAAC (1798-1860). A Dutch poet and Protestant theologian; after the death of Bilderdijk was chief poet of Holland; wrote *Prometheus, Poems, Festive Songs, Hagar, The Battle of Nieuwpoort;* translated Byron's *Cain* and two theological works: *Gospel Harmony* and *Israel and the Gentiles.*

DAHLGREN, FREDRIK AUGUST (1816-1895). A Swedish poet and dramatist; born in Nordmark. He has written many dialect songs and ballads. He has translated a great many dramas from foreign languages, and has written a history of the Swedish stage.

DALIN, OLOF VON (1708-1763). A Swedish poet and historian; "father of modern Swedish poetry"; born in Vinberga, in Holland. His time is known as the "age of Dalin"; published *Thoughts about Criticism;* a comedy, *The Jealous Man;* a tragedy, *Brunhild; The Story of the Horse* and *April Work of Our Glorious Time,* satires on Swedish history and politics, and a *History of Sweden.*

DANA, CHARLES ANDERSON (1819-1897). American journalist; born in Hinsdale, N. H. Among his works are *The Art of Newspaper Making, Lincoln and His Cabinet,* and *Recollections.*

DANA, RICHARD HENRY (1787-1879). An American poet, novelist, and critic; born in Cambridge, Mass.; editor of the *North American Review;* author of the *Dying Raven, The Buccaneer,* and other poems.

DANA, RICHARD HENRY (1815-1882). An American author; born at Cambridge, Mass.; son of Richard Henry Dana, the poet; wrote *Two Years Before the Mast, The Seaman's Friend, To Cuba and Back;* contributor to legal journals and to the *North American Review;* edited *Wheaton's International Law.*

D'ANNUNZIO, GABRIELE (1864-). An Italian poet, novelist, and dramatist. Among his best efforts is an exquisite epic, *La Canzone di Garibaldi* (1901), the drama *Francesca da Rimini* (1902), and the work *La Vergine delle Rocce* (1895).

DAN'TE (a contraction of Durante), **ALIGHIERI** (1265-1321). Greatest Italian poet and one of the greatest of all time; born in Florence. He is famous as the author of the *Divina Commedia,* containing awful word pictures of hell. The *Vita Nuova* contains in mingled poetry and prose the story of his love for Beatrice. In the struggle between the Guelphs and Ghibellines, Dante allied himself with the latter and was banished in 1302 and spent the remaining years in Ravenna. [See Ital. Lit.].

D'ARBLAY, FRANCES BURNEY (1752-1840). An English novelist; wrote *Evelina* (1778), the best novel since *Clarissa Harlowe.* There followed *Cecilia, Camilla,* and *The Wanderer,* which in no way compare with *Evelina.*

DASS, PETER (1647-1708). A Norwegian poet. His most famous poem is *The Northland's Trumpet. Valley Song* and *Spiritual Pastime* are noteworthy.

DAUDET (*do-day'*), **ALPHONSE** (1840-1897). A noted French novelist. He has been likened to Dickens in his choice of subjects and style of treatment. His greatest novels are *Numa Roumestan, Le nabab,* and the immortal *Tartarin de Tarascon,* with its sequels, *Tartarin sur les Alpes* and *Port Tarascon.* Among his other works are *Les prunes, Lettres de mon moulin, Contes du lundi, Le petit chose, La dernière classe, Le siège de Berlin, Le jeu au billard, Le bac, Fromont jeune et Risler aîne* or *Sidonie, Jack, Sapho,* and *Souvenirs d'un homme de lettres.*

DAVENANT, SIR WILLIAM (1606-1668). An English poet and playwright. On the death of Ben Jonson, Davenant was appointed poet laureate (1637). He staged his own plays, introduced opera, and initiated the presentation of female parts by women (1656). The best of his dramas is *The Siege of Rhodes,* and his epic, *Gondibert,* was much praised.

DAVID, AP GWILYM (about 1300-1370). The greatest of medieval Welsh poets. Two hundred and sixty-two of his poems were published (1789) and others were recently discovered in the British Museum.

DAVIS, JEFFERSON. (See Dictionary of Government). Wrote *The Rise and Fall of the Confederate Government.*

DAVIS, REBECCA HARDING (1831-). An American novelist; born at Washington, Pa. She was married to L. Clarke Davis of Philadelphia. Her principal novels are *Dallas Galbraith* and *A Law Unto Herself.* Her best short story is *Life in the Iron Mills.*

DAVIS, RICHARD HARDING (1864-). An American novelist; born in Philadelphia; has written *Captain Macklin, Ranson's Folly, Soldiers of Fortune, King's Jackal, Cuba in War Time, Princess Aline, Our English Cousins.* Among his earlier works are *Gallegher and Other Stories, Stories for Boys,* and the *Van Bibber* series.

DAVIS, VARINA ANNE JEFFERSON (1864-1898). Known as "The Daughter of the Confederacy." An American author; born in Richmond, Va.; the daughter of Jefferson Davis. She was a musician, painter, and writer. Among her works are *Sketch of the Life of Robert Emmet, The Veiled Doctor,* and *A Romance of Summer Seas.*

DAY, THOMAS (1748-1789). An English author; born in London; a strong sympathizer with the Americans in the War of Independence. He is best known as the author of the famous *History of Sanford and Merton* and the *History of Little Jack.*

DEFOE, DANIEL (1661-1731). An English writer; born in London. In 1719 appeared the most popular of all his works, *Robinson Crusoe;* wrote also *True-Born Englishman,* a vindication of William III.; *Memoirs of a Cavalier, Journal of the Plague Year, Colonel Jack, Captain Singleton, Moll Flanders,* and *The Apparition of One Mrs. Veal.*

DEFOREST, JOHN WILLIAM (1826-). An American author and soldier; born in Seymour, Conn.; wrote a *History of the Indians in Connecticut, Oriental Acquaintances, European Acquaintances, Seacliff,* followed by nine novels, of which the best are *The Wetherell Affair, Honest John Vane,* and *Justine's Lovers.*

DE KAY, CHARLES (1848-). An American author; published *Hesperus and Other Poems, Vision of Nimrod, Bird Gods, Essays on Ancient Ireland, Love Poems of Louis Barnaval* (his pen name).

DEKKER or **DECKER, THOMAS** (about 1570-about 1641). An English dramatist; born in London; wrote more than forty plays. Among these are *The Shoemaker's Holiday, Old Fortunatus, The Honest Whore, The Virgin Martyr,* and *The Witch of Edmonton.*

DELAND, MARGARET WADE (CAMPBELL) (1857-). An American novelist; born at Allegheny, Pa. In 1880 she married L. F. Deland of Boston. Among her novels are *John Ward, Preacher; Sidney, Mr. Tommy Dove and Other Stories, Philip and His Wife,* and *The Wisdom of Fools.*

DELAVIGNE, JEAN FRANCOIS CASIMIR (1793-1843). A French lyric poet and dramatist. His poems of patriotism won him great favor, and two *Elégies sur la vie et la mort de Jeanne d'Arc* touched the French heart. Among his best plays are *L'école des vieillards, Marino Faliero, Les vêpres siciliennes, Louis XI., Les enfants d'Edouard,* and *La fille du Cid.*

DEMETRIUS PHALEREUS (about 354-284 B. C.). Grecian orator and statesman. Of his historical and philosophical works fragments only are extant.

DE MILLE, JAMES (1837-1880). A Canadian author; born at St. John, N. B.; wrote *Andy O'Hara, The Soldier and the Spy, The Dodge Club, The American Baron, The Living Link, The Cryptogram,* and *A Castle in Spain.*

DEMOSTHENES (385?-322 B. C.). Athenian orator; conquered an impediment in his speech, and by perseverance and determination became the greatest orator of the ancient world; opposed Philip of Macedon, against whom he delivered his *Philippics.* His *De Corona* or *Oration on the Crown* in defense of Ctesiphon is regarded as one of the world's masterpieces in oratory. Over 60 of his orations have come down to us.

DENHAM, SIR JOHN (1615-1669). An English poet; born in Dublin. His first publication was a successful tragedy, *Sophy.* He then wrote *Cooper's Hill,* the earliest of English descriptive poems. His address to the Thames beginning "O could I flow like thee" appeared in 1665.

DE QUINCEY, THOMAS (1785-1859). An English author; born in Manchester. While at Oxford he contracted the habit of eating opium, to which he remained a slave for many years. The consequences were fearful, as he himself relates in his principal work, *The Confessions of an English Opium-Eater.* He was a very prolific writer, and his works are mostly essays and papers on historical, literary, and miscellaneous topics, such as *Letters to a Young Man* and the very valuable *Literary Reminiscences.* [See Eng. Lit.].

DESCHAMPS, EUSTACHE (about 1328-1415). French poet. His *Miroir de Mariage,* 13,000 lines long, is his best known poem.

DES PERIERS, BONAVENTURE (1500-1544). French satirist; a courtier of Margaret of Navarre, to whom is assigned the chief authorship of her *Heptameron.* His *Cymbalum Mundi* (1537) was a satire on the Christian religion.

DEUS-RAMOS, JOAO DE (1830-1897). A Portuguese lyric poet. In 1865 published his masterpiece, *Floers do campo.*

DIAS, GONCALVES ANTONIO (1823-1866). A Brazilian poet. His works comprise a report, *Brazil e Oceania,* and valuable papers on the migrations of South American Indian tribes, and several volumes of poems.

DIBDIN, CHARLES (1745-1814). Musician, dramatist, and song writer; born in Southampton. His celebrity is wholly due to his sea-songs *Tom Bowling, The Waterman, The Quaker,* and *Poor Jack.*

DICKENS, CHARLES (1812-1870). Celebrated English novelist; born at Landport, Portsmouth; son of a navy clerk, latterly in great straits; was brought up amid hardships; was sent to a solicitor's office as "an office boy," learned shorthand, and became a reporter, a post in which he learned much of what afterwards served him as an author; wrote sketches for the *Monthly Magazine* under the name of "Boz" in 1834, and the *Pickwick Papers* in 1836-1837, which established his popularity. These were succeeded by *Oliver Twist, Nicholas Nickleby, Old Curiosity Shop, A Tale of Two Cities,* and many others. They were all written with an aim. He was a little man, with clear blue eyes, a face of extreme mobility, and a quiet shrewdness of expression. [See Eng. Lit.].

DICKINSON, EMILY (1830-1886). An American poet; born in Amherst, Mass. Nothing of her writings was published during her lifetime. In 1890 T. W. Higginson and Mrs. Mabel Loomis Todd edited a volume, *Poems by Emily Dickinson.*

DICKINSON, JOHN (1732-1808). An American statesman and publicist, called the "Penman of the Revolution"; born in Talbot County, Md.; best known as a writer of state papers. He wrote or drafted the *Resolutions in Relation to the Stamp Act* adopted by the Pennsylvania Assembly (1765); the *Declaration of Rights* and *Petition to the King* adopted by the Stamp Act Congress.

DIDEROT, DENIS (1713-1784). A French writer, leader of the "Encyclopedists" or writers for the *Encyclopédie,* which Diderot had planned as an enlargement of *Chambers's Encyclopaedia.* Diderot gave to this work twenty years of the closest attention. The work consisted (1751-1772) of 28 volumes, with six volumes of supplement (1776-1777) and two volumes of tables (1780). Diderot wrote two plays: *Le fils naturel* and *Le père de famille,* which mark the beginning of the domestic drama; besides novels and essays of criticism.

DIODORUS SICULUS (flourished 21 B. C.). A Greek historian; born in Sicily. He traveled in Europe and Asia collecting material for his great work, the *Library,* a universal history in 40 books from the beginning to 60 B. C. He was 30 years in compiling it.

DIOGENES, LAERTIUS (flourished about 200). A Greek writer. Little is known about his life. He wrote *Lives of Philosophers* in 10 books, which is really a history of philosophy from its beginning.

DISRAELI, BENJAMIN, EARL OF BEACONSFIELD (1804-1881). (See Beaconsfield in Dictionary of Government). An English novelist and writer; wrote *Vivian Grey, Coningsby, Sybil, Tancred, Lord George Bentinck, an Autobiography; Henrietta Temple,* and *Endymion.*

D'ISRAELI, ISAAC (1766-1848.) An English author; descendant of a Hebrew family which settled in England in 1748; wrote *Curiosities of Literature, A Dissertation on Anecdotes, Amenities of Literature,* and some political and historical works. He was the father of Benjamin Disraeli, Earl of Beaconsfield.

DIX, DOROTHEA LYNDE (1805-1887). An American philanthropist and writer of juvenile books; wrote *The Garland of Flora, Prisons and Prison Discipline,* and *Alice and Ruth.*

DIXIE, LADY FLORENCE CAROLINE DOUGLAS (1857-1905). An English explorer, writer, and champion of woman's rights; daughter of the Marquis of Queensberry. She described her explorations in *Across Patagonia;* wrote *Defence of Zululand, In the Land of Misfortune, Gloriana,* and *The New Woman.*

DIXON, RICHARD WATSON (1833-1901). An English poet and historian. His poetic works include *Mano, Odes and Eclogues, Lyrical Poems, Songs and Odes, On Advancing Age,* and *The Spirit Wooed.* His important work is *History of the Church of England from the Abolition of the Roman Jurisdiction.*

DIXON, WILLIAM HEPWORTH (1821-1901). An English writer; wrote *John Howard and the Prison World of Europe, Life of William Penn,* written in 1859 to refute Macaulay's damaging charges; the *French in England, The Personal History of Lord Bacon,* etc.

DOBELL, SYDNEY THOMPSON (1824-1874). An English poet of the "spasmodic" school. His poems *The Roman* (1850), and *Balder* (1853), met with great success.

DOBSON, HENRY AUSTIN (1840-). An English poet; born in Plymouth; has written *Vignettes in Rhyme, Proverbs in Porcelain, Old World Idylls;* lives of *Steele, Goldsmith, Hogarth, Fielding,* etc.

DODD, WILLIAM (1729-1777). An English clergyman and writer. He wrote *Beauties of Shakespeare, Reflections on Death,* and *Thoughts in Prison.*

DODGE, MARY ABIGAIL (1830-1896). An American journalist and author; born in Hamilton, Mass.; she has written, under the pseudonym of "Gail Hamilton," a number of well known books, such as *Gala Days, Woman's Wrongs, Red Letter Days in Applethorpe, The Battle of the Books, Sermons to the Clergy,* and *The Irrepressible Book.*

DODGE, MARY ELIZABETH MAPES (1838-1905). An American writer; born in New York City. Her best known work is *Hans Brinker, or the Silver Skates,* and two volumes of poetry, *Along the Way* and *When Life is Young.*

DODGE, THEODORE AYRAULT (1842-1909). An American soldier and military writer; born in Pittsfield, Mass.; wrote *Bird's Eye View of Our Civil War, Campaign of Chancellorsville, Patroclus and Penelope, A Chat in the Saddle,* and *Great Captains.*

DODGSON, CHARLES LUTWIDGE, or **"LEWIS CARROLL"** (1832-1898). An English author. A writer of mathematical treatises, he is, however, best known by his invention of a literary genre in *Alice's Adventures in Wonderland, Through the Looking-Glass and What Alice Found There, The Hunting of the Snark, Sylvie and Bruno,* and *Sylvie and Bruno Concluded.*

DOLE, NATHAN HASKELL (1852-). An American author, editor, and translator: born at Chel-

sea, Mass.; edited *The Rubaiyat of Omar Khayyam*, based on Fitzgerald, and the *Collected Works* of Count Tolstoy. He wrote *The Hawthorn Tree and Other Poems*, life of *Francis William Bird*, and *Omar, the Tent-Maker*.

DONNELLY, IGNATIUS (1831-1901). An American journalist, politician, and essayist; born in Philadelphia; wrote *Atlantis* and *Ragnarok*. His *Great Cryptogram* was a cipher applied to the first folio of Shakespeare's works to prove that Bacon was the author and not Shakespeare.

DORAN, JOHN (1807-1878). A British miscellaneous writer; wrote *Lives of the Queens of the House of Hanover, Knights and Their Days, In and About Drury Lane*, etc.

DORR, JULIA CAROLINE RIPLEY (1825-). An American poet; born at Charleston, S. C. Among her works are *Isabel Leslie, Farmingdale, Lanmere, Expiation, Bermuda, The Flower of England's Face, Daybreak*, and *Afternoon Songs*. She married Hon. Seneca R. Dorr of Rutland, Vt.

DOSTOYEVSKI, FYODOR MIKHAYLOVITCH (1821-1881). A Russian novelist; wrote *Poor People, The Downtrodden and Oppressed, Memoirs from a Dead House, Crime and Punishment, Author's Diary*, and *The Brothers Karamazoff*.

DOUGALL, LILY (1858-). A Canadian writer; her popular novels include: *Beggars All* (1891), *What Necessity Knows* (1893), and *The Mormon Prophet* (1899).

DOWDEN, EDWARD (1843-). An English scholar and critic; wrote *Shakespeare, His Mind and Art; Shakespeare Primer, Introduction to Shakespeare, Studies in Literature, Southey, Shelley, Transcripts and Studies, Wordsworth, New Studies in Literature, The French Revolution and English Literature*, and a *History of French Literature*.

DOYLE, SIR ARTHUR CONAN (1859-). A British novelist. After practising medicine for some years, the success of several of his books induced him to enter literature. Among his works are *Adventures of Sherlock Holmes, The Hound of the Baskervilles, Micah Clarke, The White Company, The Refugees, Rodney Stone, The Exploits of Brigadier Gerard, Round the Red Lamp, The Stark Munro Letters*, and *The Green Flag*. He also wrote a volume of poems, *Songs of Action*, and a play called *Halves*. He was knighted in 1902.

DOZY, REINHART (1820-1883). A Dutch orientalist and historian; born in Leyden. He wrote *History of the Almohades, History of Africa and of Spain*, and several histories relating to the Arabs.

DRAKE, JOSEPH RODMAN (1795-1820). An American poet; born in New York City; wrote *The Culprit Fay, The American Flag*, the eulogy on Fitz-Greene Halleck, *Green be the turf above thee*, and, in conjunction with Halleck, *The Croakers*.

DRAKE, SAMUEL ADAMS (1833-1905). An American author; born in Boston, Mass.; brigadier general in the Civil War; wrote *Old Landmarks of Boston, New England Legends and Folk-lore, The Watch Fires of '76*, and *Myths and Fables of To-day*.

DRAYTON, MICHAEL (1563-1631). An English poet. Among his works are *The Shepherd's Garland, The Barons' Wars, Poems, Lyrical and Pastoral, Muses' Elysium*, and *Poly-Olbion*.

DRUMMOND, HENRY (1851-1897). An English author and evangelist. His aim was to reconcile science and religion. He wrote *Natural Law in the Spiritual World, The Ascent of Man, Tropical Africa, Travel Sketches*, and *The Greatest Thing in the World*.

DRUMMOND, WILLIAM HENRY (1854-1907). A Canadian poet; born in Quebec. He was a physician and in his intercourse with the French-Canadians learned their life stories, which he was able to depict in dialect poems published under the title of *The Habitant*. Frechette transfers to Drummond Longfellow's flattering tribute to Frechette: "He is the pathfinder of a new land of song." [See Can. Lit.].

DRYDEN, JOHN (1631-1700). [See Eng. Lit.]

DU BELLAY, JOACHIM (about 1524-1560). A French poet, known as "The French Ovid." Translated two books of the Aeneid (1552), and published his most noteworthy collection of poems *Les regrets* (1559).

DUMAS (*du-mah*), **ALEXANDRE, or DUMAS PERE** (1802-1870). The Elder; a French romancist. He was the grandson of a French marquis and a San Domingo negress. The works which bear his name amount to some 300 volumes, including several dramas; but the only claim he could lay to a great number of the productions issued under his name was that he either sketched the plot or revised them before going to press. *Monte Cristo, Three Musketeers, Forty-five, Twenty Years After*, are among his best novels.

DUMAS, ALEXANDRE, or DUMAS FILS (1824-1895). The Younger; a French dramatist and romancist, son of the preceding. In 1848 he found himself with a pen and 50,000 francs of debts. He wrote *La dame aux camélias* (1848; dramatized 1852) and soon became a wealthy man. His other plays fill seven volumes and they inaugurate in French drama the realistic study of social problems.

DU MAURIER (*du mo-re-ay'*), **GEORGE LOUIS PALMELLA BUSSON** (1834-1896). Artist, caricaturist, and novelist; born in Paris, France; joined the *Punch* staff, and became famous through his weekly drawings for that publication. In 1891 appeared his first novel, *Peter Ibbetsen*, and in 1894 he issued *Trilby*, a story which had great popularity both in book form and on the stage. His last work, *The Martian*, appeared after his death.

DUNBAR, PAUL LAURENCE (1872-1906). An American poet of the African race; born at Dayton, Ohio; wrote *Oak and Ivy, Majors and Minors, Lyrics of Lowly Life, Poems of Cabin and Field, The Uncalled*, and *The Sport of the Gods*.

DUNBAR, WILLIAM (about 1465-about 1525). The greatest of the old Scottish poets. Among his works are *Visitation of Saint Francis, The Thistle and the Rose*, and *The Dance of the Deadly Sins*.

DUNNE, FINLEY PETER, or "MR. DOOLEY" (1867-). An American humorist; born in Chicago, Ill. In his works he passes humorous comment on current topics with the assistance of Martin Dooley, a public-house keeper on the Archey Road. He has written *Mr. Dooley in Peace and War, Mr. Dooley in the Hearts of His Countrymen, Mr. Dooley's Philosophy*, and *Mr. Dooley's Opinions*.

DUYCKINCK (*di'kink*), **EVERT AUGUSTUS** (1816-1878). An American writer; wrote with his brother, George Long, the *Cyclopaedia of American Literature*, also *Wit and Wisdom of Sydney Smith, History of the War for the Union, National Portrait Gallery of Eminent Americans*, and *Poems Relating to the American Revolution*.

EARLE, ALICE MORSE (1853-). An American author; born in Worcester, Mass. Her works deal with Colonial history and include *The Sabbath in Puritan New England, Customs and Fashions in Old New England, Home Life in Colonial Days, Child Life in Colonial Days, Stage Coach and Tavern Days*, and *In Old Narragansett*.

EASTMAN, CHARLES GAMAGE (1816-1861). An American editor and poet; born in Oxford County, Me. From his poetical delineations of rural life in Vermont he was called the "Burns of the Green Mountains."

EBERS (*ay'bers*), **GEORG MORITZ** (1837-1898). A German Egyptologist and novelist. His visit to Egypt resulted in the discovery of the celebrated hieratic medical *Papyrus Ebers*. Among his works are *Egyptian Kings* and the novels *Uarda, Serapis, The Sisters, Homo Sum, Der Kaiser*, and *Eine Frage*.

ECHEGARAY, JOSE (1833-). Spanish dramatist; born in Madrid. [See Span. Lit.].

ECHEVERRIA, ESTEBAN (1809-1851). A South American poet, born at Buenos Ayres; the poem *La cautivá* (1837), is national in spirit, whereas his earlier works showed the influence of his French education.

ECKERMANN, JOHANN PETER (1792-1854). A German author and editor of Goethe's works; born at Winsen; became Goethe's private secretary (1823); wrote *Gespräche mit Goethe*.

EDGAR, JAMES DAVID (1841-1899). A Canadian legislator and author; born in Quebec; wrote *The Insolvent Act of* 1864 and *This Canada of Ours and Other Poems*.

EDGEWORTH, MARIA (1767-1849). An English novelist; born in Black Bourton, Oxfordshire; wrote *Castle Rackrent, Leonora, Stories of Ireland, Belinda, Popular Tales, Tales of Fashionable Life, Ennui, The Absentee, Harry and Lucy*, and *Rosamond and Frank*.

EDGREN, ANNE CHARLOTTE LEFFLER (1849-1892). A Swedish novelist and dramatist. Her short stories include *By Chance, From Life, A Summer Story*, and *Woman and Love*. Among her best known dramas are *The Actress, The Curate, The Fairy, Ideal Women*, and *A Rescuing Angel*.

EDWARDS, HARRY STILLWELL (1855-). An American journalist, novelist, and poet; born at Macon, Ga. His best stories are studies of plantation life and include *Two Runaways and Other Stories, The Marbeau Cousins,* and *Sons and Fathers,* which won a $10,000 prize from the Chicago *Record.*

EGAN, MAURICE FRANCIS (1852-). An American scholar; born in Philadelphia; wrote *That Girl of Mine, Preludes, Songs and Sonnets, The Life Around Us,* and *Lectures in English Literature.*

EGGLESTON, EDWARD (1837-1902). An American author; born in Vevay, Ind. In fiction he achieved celebrity with stories of life in Southern Indiana in pioneer days. As a historian he made a specialty of American subjects; wrote *Hoosier Schoolmaster, The End of the World, The Circuit Rider, Roxey, The Graysons,* and *The Faith Doctor.* With the assistance of his daughter, Mrs. Lillie E. Seelye, he wrote many juvenile biographies of American Indians, including *Tecumseh, Pocahontas and Powhatan, Brant and Red Jacket,* and *Montezuma.*

EGGLESTON, GEORGE CARY (1839-). An American editor, author, and journalist; born at Vevay, Ind.; brother of Edward Eggleston; wrote *A Rebel's Recollections, Southern Soldier Stories, The Last of the Flatboats, A Carolina Cavalier,* and many books for the young.

EGILL SKALLAGRIMSSON (about 900-about 980). An Icelandic skald; fought under the English king Athelstan for several years after 925; returned to Norway and fought against Erik Bloodaxe (934), by whom he was taken prisoner; released for writing laudatory verses about his captor. This poem is called *Höfudhlausn* (the Redemption of the Head). Egill died in Borg, Iceland, where he settled after 950. Among his sagas are *Sonartorrek,* written on the death of his favorite son; *Arinbjanar drapa* in honor of his friend Arinbjörn, and *Skjaldar drapa.* "Egill's Saga," the famous Icelandic poem, is supposed to have been written by Snorri Sturluson, and contains many of Egill's songs.

EKKEHARD, AURA VON (? -about 1125). A German historian; abbot of Aura, near Kissengen; wrote a valuable history of the first crusade, *Hierosolymita.*

"ELIOT, GEORGE" (1819-1880). The assumed literary name of **MARY ANN,** or, as she preferred to write the name in later years, **MARIAN EVANS,** an English novelist. Her first literary undertaking was the continuation of a translation of Strauss's *Life of Jesus,* completed in 1846. In 1849 she went abroad, returning to England next year, and in 1851 she took up her abode as a boarder in the house of John Chapman, editor of the *Westminster Review.* It was not however, till 1857 that she came prominently into public notice, when the first of a series of tales entitled *Scenes from Clerical Life* appeared in *Blackwood's Magazine.* The credit of authorship of *Adam Bede,* her first novel, was openly ascribed to several persons of varying note. The secret soon began to leak out. Months before her second novel, *The Mill on the Floss,* was published, it was well known, among literary circles at least, that George Eliot was none other than Marian Evans, the Westminster reviewer. By this time was established that close association and literary fellowship with the talented philosophical writer, George H. Lewes, which terminated only with the death of the latter but a little more than two years before her own. In May, 1880, she married John Cross. Others of her novels are *Silas Marner, Romola, Daniel Deronda,* and *Middlemarch.* [See Eng. Lit.].

ELIOT, JOHN (1604-1690). The apostle of the Indians; born in Essex, England; entered the Church of England, but seceded and emigrated to New England; became celebrated for his successful evangelistic expeditions among the Indians during his lifelong occupancy of the pastorate at Roxbury. He wrote *Indian Grammar Begun* (1660), *Indian Primer* (of which only one complete copy exists and is in the library of the University of Edinburgh); one of the translations of the famous "Bay Psalm Book." His *Christian Commonwealth* was published in London in 1659.

ELIZABETH, PAULINE ELIZABETH OTTILIE LOUISE, or **"CARMEN SYLVA"** (1843-). Queen of Roumania, poet, and novelist; born at Neuwied, Germany; married Prince Charles of Roumania (1869), who became King Carol I. (1881). Her chief works are *Leidens Erdengang* or *Pilgrim Sorrow, Jehovah, Pensées d'une reine,* and *Handwerkerlieder.*

ELZEVIR, LOUIS (about 1540-1617). Dutch printer at Leyden. **BONAVENTURE** (1583-1652), son, and **ABRAHAM** (1592-1652), grandson, of Louis. Dutch printers and publishers at Leyden and Amsterdam of exquisite editions of the classics, which are highly prized for the elegance of type and high grade of paper. About 2,000 books were printed—968 in Latin, 44 in Greek, 126 in French, 32 in Flemish, 11 in German, 10 in Italian, and 22 in oriental languages.

EMERSON, RALPH WALDO (1803-1882). An American philosophic author; born in Boston. He graduated at Harvard College in 1821, and was minister of the Second Unitarian Church of Boston; but soon after formed peculiar views with regard to forms of worship, abandoned his profession and, retiring to the quiet village of Concord, devoted himself to the study of the nature of man and his relation to the universe. He was one of the most eminent American philosophers of the Transcendental school; wrote *Representative Men, The American Scholar, English Traits, Nature,* also volumes of *Essays* and *Poems.*

ENCINA (*en-the'na*), **JUAN DEL** (about 1468-1534). The father of the Spanish drama; born near Salamanca; took orders, and finally became prior of the Monastery of Leon. More than 170 of his lyrics have survived, many of them with musical settings by the author. His 14 plays, all being presentations of very primitive themes, sometimes sacred, sometimes not, are far more interesting, and mark the transition from the religious to the secular stage.

ENGLISH, THOMAS DUNN (1819-1902). An American physician and author; born in Philadelphia. His works include *Zephaniah Doolittle, Walter Wolfe, Poems, Ambrose Fecit, American Ballads, Boy's Book of Battle Lyrics.* He is best known as the author of the song *Ben Bolt.*

ENNIUS, QUINTUS (239-about 169 B. C.). A Roman poet; father of the Roman epos. Fragments of his tragedies, comedies, satires, and of his *Annales,* originally in 18 books, survive.

ENNODIUS, MAGNUS FELIX (about 473-521). A bishop of Ticinum, Italy. He wrote a life of Epiphanius, his predecessor; a partial autobiography entitled *Eucharisticum,* and some poems and hymns.

EPHORUS (about 400-about 330 B. C.). A Greek historian; born in Eolis. His chief work is a *History* in 30 books of the Greeks and barbarians covering a period of 750 years down to 340 B. C. Only fragments of it exist, though it was of great service to Diodorus Siculus and later historians.

EPICHARMUS (flourished fifth century B. C.). The greatest of the Sicilian comic poets. He lived 90 years and was much honored by the Syracusans. Fragments of his 36 comedies survive.

EPINAY (*ay-pe-nay'*), **LOUISE FLORENCE PETRONILLE TARDIEU D'ESCLAVELLES DE LA LIVE D'** (1726-1783). A French writer. Her *Mémoires et Correspondence* give a lively picture of her times. She wrote *Les conversations d'Emilie,* a complement to Rousseau's *Emile.*

ERCILLA Y ZUNIGA (*ar-the'lya e thoo'nye-ga*), **ALONSO DE** (1533-1594). A Spanish epic poet; born in Madrid. He went with the Spanish army to quell the insurrection of the Araucanians in Chile. The courage of the natives in the unequal struggle gave him a theme for an epic poem, *La Araucana,* in 37 cantos.

ERCKMANN-CHATRIAN. The name indicating the joint authorship of **EMILE ERCKMANN** (1822-1899) and **ALEXANDRE CHATRIAN** (1826-1890); both born in Lorraine. Their novels deal with historical events in the section of their homes and have been widely read. They include *Histoire d'un conscrit de* 1813, *Waterloo,* and two dramas, *Le juif polonais* and *L'ami Fritz.* The former was adapted under the title of *The Bells,* in which Sir Henry Irving achieved such success as "Mathias."

ESPRONCEDA, JOSE DE (1810-1842). Spanish poet, known as the Spanish Byron. He is unsurpassed among his countrymen as a lyrical poet. His *El Pelayo* won him much fame.

EUPOLIS (about 446-411 B. C.). A Greek poet, a contemporary of Aristophanes. Produced fourteen dramas, fragments of which are extant.

EURIPIDES (480-406 B. C.). The latest of the three great Greek tragic poets; born at Salamis, of poor parents; first trained as an athlete, and then devoted himself to painting and eventually to poetry. Of his plays the *Alcestis, Bacchae, Iphigenia at Aulis, Electra,* and *Medea* may be mentioned. He won the tragic prize five times. [See Gr. Lit.].

EUSTATHIUS (about 1125-about 1194). A celebrated Byzantine commentator on Homer, Pindar, and Dionysius the Periegite; born in Constantinople; archbishop of Thessalonica (1175-1194). His *Commentary*

on the Iliad and Odyssey is a treasure house of ancient learning. He left a great number of historical writings, speeches, and tracts.

EVA'GRIUS SCHOLASTICUS (about 536-?). An early church historian; born at Epiphania in Coele-Syria; legal adviser of the patriarch Gregory at Antioch; questor under Tiberius II. and prefect under Mauritius. He wrote an *Ecclesiastical History* covering the period from 431 to 594.

EVALD, HERMAN FREDERIK (1821-). A Danish novelist. Among his works are *Valdemar Krone's Youth, The Nordby Family, Johannes Falk, Charles Lyng,* and three historical novels, *The Swedes at Kronborg, Anna Hardenberg,* and *Clara Bille.*

EVALD, JOHANNES (1743-1781). A great lyric poet of Denmark; born at Copenhagen. His *Rolf Krange* is the first original Danish tragedy. *The Fishers,* a drama, is the noblest of his works and contains the Danish national song, *King Christian stood by the lofty mast.*

EVELYN, JOHN (1620-1706). An English author; born at Wotton, Surrey. His works cover a variety of topics—art, architecture, gardening, and commerce. His *Sylva, or a Discourse on Forest Trees,* was long a standard on the subject; but his celebrity rests upon his *Diary,* covering a period of 70 years.

EVERETT, ALEXANDER HILL (1792-1847). An American diplomatist and political writer; born in Boston, Mass.; brother of Edward Everett. Among his works are *A General Survey of the Political Situation in Europe;* a similar work on *America,* and *Lives of Joseph Warren* and *Patrick Henry.* His best orations are *The French Revolution, The Battle of New Orleans,* and *The Battle of Bunker Hill.*

EWING, JULIANA HORATIA (1841-1885). An English writer of stories for children; born in Yorkshire; the daughter of Alfred Gatty. Among her many delightful tales are *The Land of Lost Toys, Jackanapes, The Story of a Short Life,* and *Lob Lie by the Fire.*

FABYAN or **FABIAN, ROBERT** (? -1513). An English chronicler; wrote *New Chronicles of England and France,* aiming to give a true history of England from the landing of Brutus to the Battle of Bosworth (1485). It was extended by unknown writers to 1558.

FAGUET (*fa-gay'*), **EMILE** (1847-). A French critic and literary essayist. His work *La tragédie française au XVI. siècle* is the best treatise upon the subject. Among his other works are *Etudes littéraires, Politiques et moralistes du XIX. siècle, Le théâtre contemporain, Classiques populaires, La littérature française,* and *Problèmes poétiques du temps présent.*

FANNIUS STRABO, GAIUS (flourished 150 B. C.). A Roman historian and orator; one of the speakers in the *De Amicitia* and *De Republica* of Cicero; served in Africa under Scipio Africanus (149-146 B. C.).

FARGUS, FREDERICK JOHN, or **"HUGH CONWAY"** (1847-1885). An English novelist; born in Bristol; wrote *Called Back* (translated into six languages and dramatized), *Dark Days, Slings and Arrows, A Cardinal Sin,* and *Bound Together.*

FARINA, SALVATORE (1846-). An Italian novelist, known as the Italian Dickens. He wrote *Due amori, Fiamma vagabonda, Frutti proibiti, Il romanzo di un vedovo, Il tesoro di Donnina, Amore bendato, Capelli biondi, Dalla spuma del mare, Il signor Io, Piu dell' amore,* and *Il numero* 13.

FARJEON (*far'jon*), **BENJAMIN LEOPOLD** (1833-1903). An English author; born in London; spent some years in Australia and New Zealand, where he wrote *Shadows on the Snow;* returning to London he wrote *Grif, Blade-o'-Grass, Fair Jewess,* and *Last Tenant.*

FARQUHAR, GEORGE (1678-1707). An English dramatist; born in Londonderry, Ireland. He was one of the finest of English comic dramatists. His works include *Love and a Bottle, Constant Couple, Sir Harry Wildair, The Inconstant, Twin Rivals, The Stage Coach, The Recruiting Officer,* and *The Beaux' Stratagem.*

FAWCETT, EDGAR (1847-1904). An American author; born in New York City; wrote *Short Poems for Short People, Purple and Fine Linen, Song and Story, Romance and Reverie, Songs of Doubt and Dream, Ambitious Woman, House at High Bridge,* etc.

FAWCETT, HENRY (1833-1884). An English political economist; lost his sight by an accident (1858); wrote a *Manual of Political Economy* (1863); elected the same year professor of political economy at Cambridge; member of Parliament (1865, 1868, 1874); postmaster general (1880); wrote also *Pauperism: Its Causes and Remedies,* and *Free Trade and Protection.*

FAY (*fl*), **ANDRAS** (1786-1864). An Hungarian author; wrote *Mesék,* a book of fables; *The Two Bathorys,* a tragedy; *Ancient Coins,* a comedy; *The House of the Beltekys,* the first attempt at an Hungarian society novel.

FECHNER, GUSTAV THEODOR (1801-1887). A German physicist and philosopher; born near Muskau, Prussia. He was the founder of modern psychology and psychophysics; under the pseudonym of Dr. Mises wrote some satirical theses and poetry. In 1846 he wrote his ethical treatise *Ueber das höchste Gut.* His *Elemente der Psycophysik* (1860) was an epoch-making contribution. In 1876 he gave out his profound *Vorschule der Aesthetik.*

FEISI (*fi'se*), or **FEIYASI, ABUL FEIS IBN MUBARAK** (1547-1595). An Indo-Persian poet and scholar; born in Agra. His works include lyrics, epics, a commentary on the *Koran,* and translations of the *Mahabharata* and *Lilivati.*

FEITH, RHIJNVIS (1753-1824). Dutch poet and dramatist. His best known works are the tragedies *Lady Jane Grey* (1791), and *Inez de Castro.*

FENELON (*fayn'lon'*), **FRANCOIS DE SALIGNAC DE LA MOTHE** (1651-1715). A French prelate and author; born in the Château de Fénelon, province of Périgord, France; was educated at Plessis College, in Paris, and at the seminary of St. Sulpice, where he received holy orders in 1675. In 1695 he was created archbishop of Cambray. A theological dispute with Bossuet, his former instructor, terminated in his condemnation by Pope Innocent XII. He was the author of numerous works on philosophy, theology, and belles-lettres, among which are *Telemachus, Fables,* and *Epitome of the Lives of the Ancient Philosophers.*

FERLAND, JEAN BAPTISTE ANTOINE (1805-1864). Canadian writer. His *Cours d' histoire du Canada* established his reputation as an historian.

FERREIRA, ANTONIO (1528-1569). Portuguese poet; born at Lisbon. [See Port. Lit.].

FERRIER, SUSAN EDMONSTONE (1782-1854). A Scotch novelist; born in Edinburgh. Among her novels, *Marriage, The Inheritance,* and *Destiny* have retained their popularity even to the present day.

FESSLER, IGNAZ AURELIUS (1756-1839). A Hungarian author and historian; wrote an excellent *History of the Hungarians* and several historical novels.

FEUERBACH (*foy'er-bah*), **PAUL JOHANN ANSELM VON** (1775-1833). A German penalogist and one of the most distinguished jurists of Germany; wrote *Remarkable Cases in Criminal Law Trial by Jury and Judicial Procedure in France.*

FEUILLET (*feh-yay'*), **OCTAVE** (1821-1890). A French novelist. He wrote *The Romance of a Poor Young Man, Monsieur de Camors, Julia de Trécoeur,* and *History of a Parisienne.*

FIELD, EUGENE (1850-1895). An American journalist; born in St. Louis, Mo.; wrote *Book of Western Verse, Book of Profitable Tales, With Trumpet and Drum,* etc.

FIELDING, HENRY (1707-1754). First great English novelist or the father of the modern novel. After ill success as playwright and lawyer he embarked upon a literary career, in which he won fame. His three important works are *Tom Jones, Joseph Andrews,* and *Amelia.* [See Eng. Lit.].

FIELDS, JAMES THOMAS (1817-1881). An American publisher and author; born in Portsmouth, N. H.; wrote *Poems, A Few Verses for a Few Friends, Yesterdays with Authors, Hawthorne, In and Out of Doors with Charles Dickens,* and a volume of essays entitled *Underbrush.*

FIRDAUSI or **FIRDUSI** (935-1020). The greatest of Persian epic poets and one of the most famous in all literature. He wrote the *Shah Namah,* one of the greatest epics of literature. It traces the history of Persia. It contains 60,000 couplets and is more than seven times the length of Homer's *Iliad.*

FISCHART, JOHANN (about 1545-c. 1591). German satirist. His best known works include the *Rabelaisian Aller Praktik Grossmutter* (1572), and *Das Glückhafft Schiff von Zürich,* in verse.

FISHER, GEORGE PARK (1827-1909). An American author and educator; born in Wrentham, Mass.; was professor of divinity from 1854-1861, and subsequently of ecclesiastical history at Yale; author of many theological and historical works. Dr. Fisher is one of the leading church historians of the United States.

FISKE, JOHN (1842-1901). An American historian; born in Hartford, Conn. He was for a while

lecturer on philosophy at Harvard, and in 1872-1879 assistant librarian. He wrote *Outlines of Cosmic Philosophy, Destiny of Man, Idea of God as Affected by Modern Knowledge, Origin of Evil,* and other works popularizing the philosophy of evolution; in history, *Beginnings of New England, American Revolution, Discovery of America, Essays, Literary and Historical,* and *New France and New England.*

FITZGERALD, EDWARD (1809-1883). An English poet. His writings are for the most part remodeled translations of poems in other languages; among them *Six Dramas of Calderon* and *The Rubáiyat of Omar Khayyam,* a translation that won for Fitzgerald great celebrity.

FLACCUS, GAIUS VALERIUS (died about 88). A Roman poet; the author of an epic poem, *Argonautica,* on the Argonautic expedition. It exists in an incomplete form.

FLAUBERT (*flo-bayr'*), **GUSTAVE** (1821-1880). A French novelist; born and died in Rouen. Among his works are *Madame Bovary, Salammbô, L'éducation sentimentale, La tentation de Saint-Antoine, Trois contes, Hérodias, La légende de Julien l'hospitalier,* and *Bouvard et Pécuchet.* Zola says that in *Madame Bovary* Flaubert gave "the formula of the modern novel."

FLEMING, PAUL (1609-1640). A German poet; made Martin Opitz his master, but his works exceed in excellence those of his model.

FLETCHER, JOHN (1579-1625). English dramatist; the son of a bishop of London; collaborated with Beaumont in the production of their plays. *The Faithful Shepherdess, The Two Noble Kinsmen, Maid's Tragedy,* and *Philaster* are the best of the 54 dramas produced by the two poets. [See Eng. Lit.].

FLORIAN, JEAN PIERRE CLARIS DE (1755-1794). A French poet and romancer; a relative and protégée of Voltaire; wrote *Galatée, Numa Pompilius, Estelle, Gonsalve de Cordoue,* and *Fables.*

FLUGEL, JOHANN GOTTFRIED (1788-1855). A German lexicographer. He spent many years in the United States in business, diplomatic, and official occupations. He died in Leipzig. His fame rests upon his *English-German and German-English Dictionary.*

FOGAZZARO, ANTONIO (1842-). One of the foremost Italian writers. His poems include *Miranda* and a collection called *Valsolda.* Among his novels are *Malombra, Daniele Cortis, Fedele, Il misterio del poeta, Eva,* and *Alla vigilia.*

FOGLIETTA, UBERTO (1518-1581). An Italian historian; born in Genoa. His *Della repubblica di Genoa* caused the forfeiture of his estate and banishment from Genoa. His *Historiae Genuensium* placed him among the foremost Latin writers of Italy.

FOLGER, PETER (about 1618-1690). An American colonist and writer; the maternal grandfather of Benjamin Franklin. Wrote *A Looking-glass for the Times,* in verse (1676).

FONTANES, LOUIS, MARQUIS DE (1757-1821). A French poet and orator. Among his works are *Le cri de mon coeur, La forêt de Navarre,* translation of Pope's *Essay on Man,* and an imitation of Gray's "Elegy," *Le jour des morts.*

FONTENELLE (*font-nel'*). **BERNARD LE BOVIER DE** (1657-1757). A French miscellaneous writer; a nephew of Corneille, whose life he wrote; author of *Dialogues of the Dead,* in imitation of Lucian, and *Conversations on the Plurality of Worlds.*

FORBES, ARCHIBALD (1838-1900). An English journalist and war correspondent. Among his numerous works are *Drawn from Life, My Experiences in the Franco-German War, Life of Chinese Gordon, William I. of Germany, The Afghan Wars, Tzar and Sultan,* and *Napoleon III.*

FORD, PAUL LEICESTER (1865-1902). An American author; born in Brooklyn, N. Y. He wrote *Washington* and *Franklin, Janice Meredith, The Honorable Peter Stirling,* and *Story of An Untold Love.*

FOSCOLO, UGO (1778-1827). An Italian writer; born in the Ionian Isles. His masterpiece is *I Sepolcri,* a magnificent lyric poem. His greatest fame rests upon his prose works, especially his novel *Ultime lettere di Jacopo Ortis.*

FOTHERGILL, JESSIE (1856-1891). An English novelist; born at Manchester. Her novels depict life in the factory towns and in the moorlands. They include *The First Violin, Kith and Kin, One of Three, Peril, Borderland, A March in the Ranks,* and *The Oriole's Daughter.*

FOUQUE, FRIEDRICH HEINRICH KARL, BARON DE LA MOTTE (1777-1843). A German novelist and poet; born in Brandenburg. He is best known as the author of *Undine,* a romantic classic.

FOWLER, ELLEN THORNEYCROFT (about 1873-). An English novelist; eldest daughter of Sir Henry Fowler, secretary of state for India (1894-1895). Miss Fowler wrote *Concerning Isabel Carnaby,* a clever society novel; *A Double Thread, The Farringdons, Sirius and Other Stories,* and some poems.

FOX, JOHN (1863-). An American novelist; born in Bourbon County, Ky. He wrote *A Mountain Europa, A Cumberland Vendetta, The Kentuckians, Crittenden, The Little Shepherd of Kingdom Come,* and *Blue Grass and Rhododendron.*

FOXE, JOHN (1516-1587). An English martyrologist. His most famous work is his *History of the Acts and Monuments of the Church,* which is known as his *Book of Martyrs,* first published in Latin on the continent, the noble English version appearing in 1563.

FRANCE, ANATOLE, or **JACQUES ANATOLE THIBAULT** (1844-). A noted French critic, novelist, and humorist. Among his best known works are *Le crime de Sylvestre Bonnard, L'orme du mail, Le mannequin d'osier, L'anneau amethyste, Monsieur Bergeret à Paris, Thaïs, Le lys rouge, La vie littéraire,* and *Le jardin d'Epicure.*

FRANCIS, PHILIP, SIR (1740-1818). An Irish-English statesman; born in Dublin; the best accredited of the candidates for authorship of the *Junius* letters.

FRASER, MARY CRAWFORD, or **MRS. HUGH.** An English author, sister of Marion Crawford; wrote *A Diplomat's Wife in Japan, The Customs of the Country or Tales of New Japan, A Chapter of Accidents,* and *The Splendid Porsenna.*

FRECHETTE, LOUIS HONORE (1839-1908). A French-Canadian poet; born at Point Lévi, Quebec. He was honored by the French Academy and the Imperial Institute of London; made a knight of the Legion of Honor; wrote a five-act drama, *Veronica;* an English sketch, *Christmas in French Canada;* translation of Howell's *Chance Acquaintance* and of Cable's *Creole Days, Mes loisirs, La voix d'un exilé, Pêle-mêle, Les fleurs boréales, Les oiseaux de neige, La légende d'un peuple,* and *Les feuilles volantes.*

FREDERIC, HAROLD (1856-1898). An American journalist and novelist; born in Utica, N. Y.; wrote *Damnation of Theron Ware, The Lawton Girl, In the Valley, The Copperhead, March Hares,* and *In the Marketplace.*

FREDRO, ALEXANDER COUNT (1793-1878). A Polish dramatist; wrote eighteen successful comedies, which were published in the collection of 1877.

FREEMAN, EDWARD AUGUSTUS (1823-1892). An English historian. His first publication was a *History of Architecture,* especially devoted to Gothic architecture. *History of the Norman Conquest* is his great work. He wrote also *Growth of the English Constitution, Comparative Politics, The Reign of William Rufus, History and Conquest of the Saracens,* and *Ottoman Power in Europe.* He was appointed professor at Oxford (1884). [See Eng. Lit.]

FREILIGRATH, FERDINAND (1810-1876). A German poet; wrote the famous lyrics *Löwenritt, Prinz Eugen,* and *Der Blumen Rache;* democratic poems *Trotz alledem* (translation of Burns's "A Man's a Man for a' That"), *Die Freiheit, Das Recht,* and *Hamlet.* Among his translations are Longfellow's *Hiawatha* and Shakespeare's *Winter's Tale* and *Cymbeline.*

FRENCH, ALICE, or **"OCTAVE THANET"** (1850-). An American novelist; born in Andover, Mass. Besides several successful short stories of an economic character she wrote *The Regulator, Knitters in the Sun, Otto the Knight, Stories of a Western Town, Expiation, We All,* and *Man of the Hour.*

FREYTAG (*fri'tahg*), **GUSTAV** (1816-1895). A German author and orientalist; born in Silesia. Among his works outside of the drama may be mentioned *Ancestors,* a cycle of six stories portraying the German civilization from the beginning of historic times.

FROISSART (*frwa-sar'*), **JEAN** (1338-1410?). A French chronicler; born in Valenciennes, in Hainault. His *Chronicles* form a work of permanent value, because of their accurate and impartial account of important events of the fourteenth century. They narrate events connected with France, England, Scotland, Spain, Brittany, etc.

FROUDE (*frood*), **JAMES ANTHONY** (1818-1894). An English historian; born in Devonshire, England;

wrote, under the pen name of "Zeta," *The Shadows of the Clouds* and the *Nemesis of Faith*, both of which were condemned by the Oxford College authorities; wrote *The History of England from the Fall of Wolsey to the Defeat of the Spanish Armada.* [See Eng. Lit.].

FULLER, SARAH MARGARET (OSSOLI) (1810-1850). An American essayist and critic; took an active part in the Italian struggle for independence and served in the hospitals; on fleeing to America was drowned with her husband and son off Fire Island Beach as they were approaching New York. Her works include *Woman in the Nineteenth Century, Papers on Literature and Art*, and her *Letters.*

FUST or **FAUST** (*foust*), **JOHANN** (? -1466). One of the three artists to whom the invention of printing has been ascribed, was the son of a goldsmith at Mentz, Germany. The other two were Gutenberg and Schöffer. Fust was a partner at Gutenberg. Their best-known publication is the Latin Bible of forty-two lines or Mazarin's Bible. A *Psalter* (1457) was the publication of Fust and Schöffer and is the first printed book to bear a complete date. Its beautiful initials in red and blue were printed from types made in two pieces.

GABORIAU (*ga-bo-re-o'*), **EMILE** (1835-1873). A French writer of criminal and detective stories. His early years were a succession of vicissitudes; the army, the law, and even the church, were in turn the objects of his inconstant attentions till at last he wrote his way to fame and fortune. He wrote *The Lerouge Affair, Monsieur Lecoq*, and *File No.* 113.

GALLAND (*gal-lon'*), **ANTOINE** (1646-1715). French orientalist; professor of Arabic in the College of France; was the first to translate the *Arabian Nights* into any European tongue.

GALT, JOHN (1779-1839). Novelist; born in Scotland. [See Can. Lit.].

GARDINER, SAMUEL RAWSON (1829-1902). An English historian; declined the regius professorship of history at Oxford on the death of Froude; wrote *History of the Great Civil War, Calendars of State Papers, Cromwell's Place in History, Oliver Cromwell, A Student's History of England*, and many other historical works.

GARLAND, HAMLIN (1860-). An American story writer; born in La Crosse, Wis. His best novel is *Rose of Dutcher's Coolly.* Among his other works are *Prairie Folks, A Little Norsk, Main-Traveled Roads, Her Mountain Lover, Prairie Songs, Ulysses Grant: His Life and Character*, and *Captain of the Gray Horse Troop.*

GARNEAU, FRANCIS XAVIER (1803-1866). Canadian historian; author of *Histoire du Canada, depuis sa decouverte*, and *Voyage en Angleterre et en France.*

GARNETT, RICHARD (1835-1906). An English librarian and author; born at Litchfield; was connected with the British Museum from his sixteenth year; wrote several volumes of verse and edited many books; wrote *Relics of Shelley, Twilight of the Gods and Other Tales, Age of Dryden, William Blake, Painter and Poet*, and a *History of Italian Literature.*

GASKELL, ELIZABETH CLEGHORN (1810-1865). An English author. She wrote *Mary Barton, Ruth, Cranford, North and South, Lizzie Leigh, Sylvia's Lovers, Cousin Phillis, Wives and Daughters*, and *Life of Charlotte Brontë.*

GAUTIER (*go-te-ay'*), **THEOPHILE** (1811-1872). A French poet and prose writer. He applied himself at first, but without much success, to painting, and then turned to literature. He was a prince of short story writers. His poems are considered by critics his best claim to fame.

GAY, JOHN (1685-1732). An English poet. His verse tales, the *Fables*, are the best of their kind in English. Among his poems the best known is his ballad, *Black-ey'd Susan. The Beggar's Opera* ran for 63 days at Lincoln's Inn Fields when first presented.

GELLERT, CHRISTIAN FURCHTEGOTT (1715-1769). A German poet; born in Saxony. He wrote *Fables and Tales.* He was the most important of the writers preceding the golden age of German literature ushered in by Lessing.

GEOFFREY OF MONMOUTH (about 1100-about 1154). A British chronicler; born at Monmouth, Wales; bishop of St. Asaph (1152); author of the famous *Historia Regum Britanniae*, published in 1139. This is one of the main sources of the Arthurian legend.

GEORGE, HENRY (1839-1897). American author and economist, and advocate of the single tax; born in Philadelphia. His most important work, *Progress and Poverty*, was published in 1879. *The Science of Political Economy* was published after his death.

GERHARDT, PAULUS or **PAUL** (1607-1676). Next to Luther the greatest of German hymn writers; born in Saxony. Among his best-known hymns are *O sacred head once wounded, Commit thou all thy griefs*, and *Jesus, Thy boundless love to me.*

GIBBON, EDWARD (1737-1794). An English historian; born in Putney; studied at Westminster School, Magdalen College, Oxford, and Lausanne. In 1763 he went to Italy, and while sitting amid the ruins of the Capitol at Rome, he conceived the idea of writing the history of the decline and fall of that city. In 1772 he began his celebrated history of the *Decline and Fall of the Roman Empire*, a history of the world for 13 centuries. [See Eng. Lit.].

GILBERT, WILLIAM SCHWENCK (1836-). An English dramatist; noted as the author of the librettos of a series of well known popular comic operas set to music by Sir Arthur Sullivan, including *H. M. S. Pinafore, The Pirates of Penzance, Patience, Iolanthe, The Mikado*, and *The Gondoliers.*

GILDER, JEANNETTE LEONARD (1849-). An American critic and journalist; born at Flushing, N. Y.; wrote *Representative Poems of Living Poets, Pen Portraits of Literary Women, Essays from the Critic, Authors at Home, Autobiography of a Tomboy*, and *Taken by Siege.*

GILDER, RICHARD WATSON (1844-1909). An American poet and editor; born in Bordentown, N. J.: wrote *The New Day, The Celestial Passion, Lyrics, Two Worlds, The Great Remembrance, Five Books of Song, For the Country, In Palestine and Other Poems*, and *Poems and Inscriptions.*

GISSING, GEORGE (1857-1903). An English novelist. His chief publications are *The Unclassed, Thyrza, Life's Morning, The Emancipated, The Odd Woman, Eve's Ransom, New Grub Street, Denzil Quarrier, The Whirlpool, Charles Dickens. Our Friend the Charlatan, Demos*, and *The Nether World.*

GIUSTI, GIUSEPPE (1809-1850). A celebrated popular Italian poet and satirist. *Lo stival*, or the history of a boot (Italy), *Gingillino, Il Re Travicello, Il Brindisi di Girella*, and *Dies Irae* are his most famous works.

GODWIN, MARY WOLLSTONECRAFT (1759-1797). An English writer. She married William Godwin (1797) and became the mother of Mary Godwin, the future Mrs. Shelley. Among her works are *Vindication of the Rights of Women, Thoughts on the Education of Daughters, Vindication of the Rights of Men*, and *Posthumous Works.*

GODWIN, PARKE (1816-1904). An American journalist and author; born in Paterson, N. J.; wrote *Out of the Past, A Popular View of the Doctrine of Fourier, Democracy, Civic and Constructive.*

GOETHE, JOHANN WOLFGANG VON (1749-1832). German poet, author, dramatist, scientist, and art critic; one of the world's greatest writers; born at Frankfort-on-the-Main; son of an imperial councilor and of Elisabeth Textor. His life at Frankfort, and the ideal companionship of his mother, had a remarkable influence on his character. His friendship with Kätchen Schönkopf at Leipzig is pictured in his *Die Laune des Verliebten.* While spending a few years at Frankfort to regain his health, he continued his studies and learned much which proved useful in writing *Faust* and *Wilhelm Meister.* At Strassburg he met Herder and Friederike Brion, whose influence may be recognized in *Götz, Werther, Clavigo, Egmont* and *Faust.* He finally removed to Weimar where he lived at the Court of Karl August. At Weimar he became interested in scientific studies and mining, managed the Court Theatre and war department, superintended the roads and bridges, and carried on a very helpful correspondence with Charlotte von Stein. In 1786 he started for Italy, where he studied for several years, some of his best works—*Iphigenie, Tasso, Faust* and *Egmont*—showing the influence of Italian life. After a close relationship with a woman of Weimar, they were married in 1806. For a time after his return to Weimar he turned his attention to scientific research. In 1794 Goethe met Schiller, and a warm and stimulating friendship developed. During this period he produced several successful novels and ballads. After the death of his wife in 1816, he traveled little and wrote intermittently, completing some of his earlier attempts and producing his *Gespräche.* [See Ger. Lit.].

GOGOL, NIKOLAI VASSILYEVITCH (1809-1852). One of the greatest of Russian writers; born in Poltava; wrote *Evenings at a Farmhouse Near Dikan 'Ka, Mirgorod, Taras Bulba, Old World Proprietors, How the Two Ivans Quarreled, Arabesques, Revizor* (a comedy), and *Dead Souls.*

GOLDONI, CARLO (1707-1793). Italian comedy writer; left about 150 plays, including *La donna di garbo, La bottega del caffè,* and *La locandiera.* [See It. Lit.].

GOLDSMITH, OLIVER (1728-1774). English man of letters; born at Pallas or Pallasmore, Ireland, and celebrated in English literature as the author of the *Vicar of Wakefield;* produced poems, *The Traveller* and *The Deserted Village,* besides comedies, such as *She Stoops to Conquer* and *The Good Natured Man;* lived extravagantly, and died in debt; wrote histories of Greece and Rome, and *Animated Nature.* [See Eng. Lit.].

GOODRICH, SAMUEL GRISWOLD, or **"PETER PARLEY"** (1793-1860). An American author; born in Ridgefield. Conn. His *Peter Parley* books won great popularity. He wrote *Poems, Sow Well and Reap Well, Men and Things I Have Seen.*

GORDON, CHARLES WILLIAM (1860-). Canadian novelist and clergyman; wrote *Black Rock, The Sky Pilot, The Prospector, The Man from Glengarry,* and *Beyond the Marshes.*

GORKY, MAXIM, or **ALEXEI MAXIMOVITCH PYESHKOFF** (1868-). A Russian author. He wrote *Makar Chudra, Foma Gordyéeff, Chelkash, Tales,* and *Orloff and His Wife.* Gorky visited the United States in 1907 in the interests of Russian freedom. His works have been admirably translated by Isabel Hapgood and by R. Nisbet Bain.

GOSSE, EDMUND WILLIAM (1849-). An English poet, essayist, and critic; born in London; author of *History of Eighteenth Century Literature,* a collection of lyrics, and a series of monographs, in particular *Life of Gray, Short History of English Literature, Life and Letters of Dr. Donne,* and *An Illustrated History of English Literature.*

GOWER, JOHN (about 1325-1408). An English poet. He wrote three great poems, one each in French, Latin, and English, to which he gave Latin names—*Speculum Meditantis,* long supposed to be lost, but found by G. C. Macaulay in the Cambridge University Library in 1895; *Vox Clamantis,* describes the insurrection of Wat Tyler, and *Confessio Amantis.*

GRAND, SARAH, or **FRANCES ELIZABETH CLARKE** (1862-). An English novelist; born in Ireland, of English parents; married Lieutenant-Colonel McFall when she was only 16. She accompanied her husband to the East, visiting India, China, and Japan. She wrote *Ideala, The Heavenly Twins, Our Manifold Nature, The Beth Book,* and *Babs the Impossible.*

GRANT, GEORGE MONRO (1835-1902). A Canadian author, educator, and orator; born at Albion Mines, N. S.; wrote *Ocean to Ocean, Advantage of Imperial Federation, Our National Objects and Aims,* and *Religions of the World in Relation to Christianity.*

GRANT, ROBERT (1852-). An American author; born in Boston, Mass.; wrote *Unleavened Bread, The Confessions of a Frivolous Girl, The Carletons, An Average Man, Opinions of a Philosopher, Reflections of a Married Man, The Art of Living.*

GRAY, MAXWELL, or properly **M. G. TUTTIETT.** An English novelist; born on the Isle of Wight; wrote *The Silence of Dean Maitland, In the Heart of the Storm, The Lost Sentence, A Costly Freak, House of Hidden Treasure, The World's Mercy, Four-leaved Clover,* and *The Forest Chapel and Other Poems.*

GRAY, THOMAS (1716-1771). An English poet; born in Cornhill, London; produced in 1747 *Ode on a Distant Prospect of Eton College,* and in 1750 his well known *Elegy Written in a Country Churchyard.* These were followed by the Pindaric odes, the *Progress of Poesy* and *The Bard,* finished in 1757. [See Eng. Lit.]

GREELEY, HORACE (1811-1872). An American journalist; born in New Hampshire; wrote *Hints Towards Reforms, Glances at Europe, Overland Journey to San Francisco, The American Conflict, Recollections of a Busy Life,* and *Essays on Political Economy.*

GREEN, JOHN RICHARD (1837-1883). An English historian; born at Oxford. In 1874 he published his *Short History of the English People,* which was speedily adopted in schools, and was widely accepted as one of the ablest summaries of the history of the country. The welcome with which this small work was received induced the author to essay a larger, which he accordingly published in four volumes. This was followed by *The Making of Engand* and *The Conquest of England.*

GREENE, ROBERT (about 1560-1592). English dramatist and poet; wrote *The Famous History of Friar Bacon, Pandosto, Menaphon,* and *Groat's Worth of Wit.*

GREGORY VII., HILDEBRAND (1020?-1085). Son of a carpenter; born in Soano, Tuscany. Succeeded to the papacy in 1073; his writings are contained in Migne's *Patrologia.*

GRILLPARZER, FRANZ (1791-1872). A popular Austrian dramatist; born at Vienna. His first notable drama was the tragedy *Die Ahnfrau,* the *motif* of which is an extreme fatalism. *Sappho, Das Goldne Vlies,* and many others followed, all of which are marked by dramatic power and lyric grace.

GRIMM, Brothers. **JAKOB LUDWIG** (1785-1863), and **WILHELM KARL** (1786-1859). German authors. The former gained renown as a philologist, producing his *Deutsche Grammatik.* Wilhelm's best-known book is *Die deutsche Heldensage.* Together they wrote *Deutsches Wörterbuch* and *Kinder- und Hausmärchen,* a collection of fairy stories which has made them famous.

GROTE, GEORGE (1794-1871). An English historian. In 1846 appeared the first two volumes of his magnificent *History of Greece.* The remaining ten volumes followed in rapid succession, the final volume being published in 1856. The work terminates with the death of Alexander the Great.

GROTIUS (*gro'shus*), **HUGO (DE GROOT)** (1583-1645). A distinguished Dutch jurist and author; born at Delft. His *International Law* is still authoritative.

GRUNDTVIG, NICOLAI FREDERIK SEVERIN (1783-1872). Danish writer; produced *Sangverk til den Danske Kirke, Salmer, Poetiske Skrifter, Kristenhedens Syvsterne.* [See Scand. Lit.].

GUICCIARDINI, FRANCESCO (1483-1540). Italian historian; wrote *Ricordi Politici e Civili,* and *Reggimento di Firenze.* [See It. Lit.].

GUINEY, LOUISE IMOGEN (1861-). An American poet and essayist; born in Boston, Mass.; the daughter of General Patrick R. Guiney; wrote *Songs at the Start, The White Sail and Other Poems, The Martyr's Idyl, Goose-Quill Papers, Monsieur Henri, A Roadside Harp, A Little English Gallery,* and *Patrins.*

GUIZOT (*gee-zo'*), **FRANCOIS PIERRE GUILLAUME** (1787-1874). A French historian. He was minister of the interior, ambassador to Great Britain, and minister of foreign affairs. After the fall of Louis Philippe, Guizot escaped and fled to England. Henceforth he practically retired from public life. Among his numerous works may be mentioned *History of Civilization in France, General History of Civilization in Europe, History of the English Revolution, History of the Origin of Representative Government,* and *Life, Correspondence, and Writings of Washington.*

GUTHRIE, THOMAS ANSTEY, or **F. ANSTEY** (1856-). An English author; born at Kensington. His works include *Vice Versa, The Giant's Robe, The Black Poodle, The Tinted Venus, The Fallen Idol, The Pariah, Voces Populi, The Travelling Companions, Under the Rose, Lyre and Lancet, The Statement of Stella Maberly, Paleface and Redskin,* and *The Brass Bottle.*

HAFIZ or **SHAMS-UD-DIN MOHAMMED** (? - about 1389). One of the world's greatest names in lyrical poetry; lived at Shiraz, Persia. The *Divan* or collection of the writings of Hafiz was made by his friend, Mohammed Gulandam. His *Ghazals* or *Odes,* corresponding in some respects to our sonnet, are the most famous among the Persians.

HAGGARD, HENRY RIDER (1856-). An English novelist; born at Norfolk. Among his works are *King Solomon's Mines, She, Elissa, Swallow, Nada, the Lily; The People of the Mist, Jess, Cleopatra,* and *Rural England.*

HAKLUYT (*hak'loot*), **RICHARD** (about 1552-1616). An English geographer and historian; wrote *Divers Voyages Touching the Discovery of America* (1582); *A Particular Discourse Concerning Western Discoveries* (1584), *Principall Navigations, Voiages, and Discoveries of the English Nation.*

HALEVY, LUDOVIC (1834-1908). A French dramatist. From 1852 to 1865 he wrote the librettos for Offenbach's most popular operettas; from 1864 to 1881 wrote comic operas in collaboration with Henri Meilhac; they produced *La belle Hélène,* their first great success,

in 1865; the work on the Cardinal family is the best illustration of his satires. Halévy was elected to the Academy (1886).

HALIBURTON, THOMAS CHANDLER, or **"SAM SLICK"** (1796-1865). A Canadian humorist; born at Windsor, Nova Scotia; became judge of the Supreme Court (1842); retired (1856) and thereafter resided in England. His *Sam Slick* is the drollery, wit, knowledge of human nature, and successful use of "soft sawder" by a Yankee clock-maker and peddler.

HALLAM, HENRY (1777-1859). An English historian and critic; practised law until 1812; gave ten years of preparation to his first great work, *A View of the State of Europe during the Middle Ages* (1818). Others of his works which have remained standard authorities are *The Constitutional History of England from the Accession of Henry VII. to the Death of George II.*, published in 1827, and the *Introduction of the Literature of Europe in the Fifteenth, Sixteenth and Seventeenth Centuries* (1837-39).

HALLECK, FITZ-GREENE (1790-1867). An American poet; born at Guilford, Connecticut. With Joseph Rodman Drake, he contributed the humorous series of *The Croaker Papers*, to the New York *Evening Post*.

HANNAY, JAMES (1842-). A Canadian journalist and historian; born at Richibucto, N. B.; wrote *History of Acadia, Story of the Queen's Rangers in the American Revolution, History of the Loyalists*, and *Life and Times of Sir Leonard Tilley*.

HARDY, THOMAS (1840-). An English novelist; born in Dorset, England. He was brought up as an architect. Among his works are *Tess of the D'Urbervilles, The Woodlanders, Two on a Tower, Far from the Madding Crowd, The Three Strangers, Poems of the Past and Present, A Pair of Blue Eyes*, and *Jude the Obscure*.

HARLAND, HENRY (1861-1905). An American novelist; born in St. Petersburg, Russia; wrote *As It Was Written, Mrs. Peixada, The Yoke of the Thorah, My Uncle Florimond, A Latin Quarter Courtship, Mea Culpa, The Cardinal's Snuffbox*, and *The Lady Paramount*.

HARNACK, ADOLF (1851-). The leading living church historian; born at Dorpat, Russia; wrote *Monasticism: Its Ideals and Its History, The Confessions of Saint Augustine, History of Dogma, The Apostles' Creed*, and *What is Christianity?*

HARRADEN, BEATRICE (1864-). An English novelist; wrote *Ships That Pass in the Night, Things Will Take a Turn, In Varying Moods, Hilda Strafford*, and *The Fowler*.

HARRIS, JOEL CHANDLER (1848-1908). An American author; born at Eatonton, Georgia; studied law; became editor of the Atlanta *Constitution* (1876); his *Uncle Remus* sketches in negro dialect first appeared in this paper in 1880; these were followed by studies of Afro-American folk lore; published a memoir of Henry W. Grady (1890), and a volume on *Georgia from the Invasion of De Soto to Recent Times* (1899).

HARRISON, CONSTANCE CARY, or **MRS. BURTON** (1846-). An American novelist; born at Vaucluse, Va.; married in 1867 to Burton Harrison, a lawyer and private secretary to Jefferson Davis; wrote *Golden Rod, The Anglomaniacs, Sweet Bells Out of Tune, A Daughter of the South, A Son of the Old Dominion, Good Americans, Flower de Hundred*, etc.

HARRISON, FREDERIC (1831-). An English essayist; born in London. Among his works are *Meaning of History, Order and Progress, The Choice of Books, Oliver Cromwell, Victorian Literature, Tennyson, Ruskin, Mill, and Other Literary Estimates; John Ruskin*, and *Washington*.

HARRISON, MARY SAINT LEGER, or **"LUCAS MALET"** (1852-). An English novelist; daughter of Charles Kingsley. Her novels are written with an ethical purpose and include *Mrs. Lorimer, The Wages of Sin, The Carissima, The Gateless Barrier, Sir Richard Calmady*, and *The Far Horizon*.

HARRISON, SUSAN FRANCES (1860-). Canadian author. Wrote *Crowded Out* (stories), *Pine, Rose, and Fleur-de-Lis* (verse), *Canadian Birth-Day Book*.

HART, ALBERT BUSHNELL (1854-). An American historian; born at Clarksville, Pa. His writings include *Introduction to the Study of Federal Government, Formation of the Union, Practical Essays on American Government, Studies in American Education, Source Book of American History*, and *Life of Salmon P. Chase*.

HARTE, FRANCIS BRET (1839-1902). An American humorous poet and novelist; born at Albany, New York; removed to California (1854); entered newspaper work (1857) as compositor in the office of the *Golden Era;* became editor-in-chief of the *Weekly Californian;* was secretary of the United States mint in San Francisco (1864-1867); had been writing sketches which had attracted much attention and in 1868-1870 published *The Luck of Roaring Camp*, and *The Outcasts of Poker Flat;* these with the poem *The Heathen Chinee* (1870), won him a national reputation; was United States consul at Crefeld, Germany (1878-1880), and at Glasgow (1880-1885); his last years were spent in England.

HAUPTMANN, GERHART (1862-). Noted German dramatist; his works are democratic, his later poems of a social altruism.

HAVERGAL, FRANCES RIDLEY (1836-1879). An English religious writer; born at Astley. Her works include *The Ministry of Song, Loyal Responses, Coming to the King*, and *Red Letter Days*. She is best known for her hymn, *Take my life and let it be*.

HAWEIS (*haws*), **HUGH REGINALD** (1838-1901). An English clergyman and author; born in Surrey; served under Garibaldi at the siege of Capua; wrote *Music and Morals, American Humorists, Christ and Christianity, The Broad Church, Travel Talk*, and *Old Violins*.

HAWKINS, ANTHONY HOPE (1863-). An English novelist writing under the name "Anthony Hope"; born in London. Among his best known works are *A Man of Mark, The Prisoner of Zenda, Phroso, The Dolly Dialogues, Quisanté, The Intrusions of Peggy, Rupert of Hentzau*, and *The King's Mirror*.

HAWTHORNE, JULIAN (1846-). An American novelist and journalist, son of Nathaniel. Among his works are *Garth, Noble Blood, The Professor's Sister, A Fool of Nature*. He also wrote *Saxon Studies, Nathaniel Hawthorne and His Wife, American Literature*, and *A History of the United States*.

HAWTHORNE, NATHANIEL (1804-1864). American novelist; born at Salem, Massachusetts. *Twice-told Tales* was the first production by which he won distinction. After the publication of *Twice-told Tales* he spent some months at Brook Farm, leaving which he married and took up house at Concord. From 1848 to 1850 he held a state appointment, and in his leisure hours wrote his *Scarlet Letter*, which appeared in the latter year and established his fame as a master of literature. This was followed by *The House of Seven Gables, The Snow Image, The Blithedale Romance*, and later by *The Marble Faun* and *Our Old Home*.

HAYNE, PAUL HAMILTON (1831-1886). An American poet; born in Charleston, S. C. At first a lawyer, he turned to journalism, and in 1855 his maiden volume of verse appeared. His works include *Legends and Lyrics, The Mountain of the Lovers*, and *Complete Poetical Works* (1882).

HAZELTINE, MAYO WILLIAMSON (1841-). An American journalist and reviewer; born in Boston, Mass.; wrote *Chats about Books, Poets, and Novelists;* but he is most widely known for his masterly reviews in the New York *Sun*.

HAZLITT, WILLIAM (1778-1830). An English critic. He wrote *On the Principles of Human Action, Lectures on the Dramatic Literature of the Reign of Queen Elizabeth, Round Table*, and *Characters of Shakespeare's Plays*. Robert Louis Stevenson said of him: "Though we are mighty fine fellows nowadays, we cannot write like Hazlitt."

HEADLEY, JOEL TYLER (1813-1897). An American prose writer; born in Walton, N. Y. His writings, such as *Washington* and *Chaplains of the Revolution*, contain much valuable information about early American history.

HEARN, LAFCADIO (1850-1904). An American author; born in the Ionian Isles; wrote *Chita, Two Years in the French West Indies, Youma or The Story of a West Indian Slave, Out of the East, Hints and Echoes of Japanese Inner Life, Gleanings in Buddha Fields, Shadowings*, and *Kotto*.

HEAVYSEGE, CHARLES (1816-1876). A Canadian poet; born in Liverpool, England; a cabinetmaker in Canada (1853); afterwards a journalist on the staff of the Montreal *Witness;* wrote *The Revolt of Tartarus*, a volume of sonnets, a three part tragedy entitled *Saul, Count Filippo or The Unequal Marriage, The Dark Huntsman, The Owl, Jephthah's Daughter*, and a novel entitled *The Advocate*.

HECATAEUS (flourished 500 B. C.). A Greek writer; the most important of the logographers; wrote *Genealogies* and *Tour of the World*, which contains a map probably based on that of Anaximander.

HECTOR, ANNIE (FRENCH), or **MRS. ALEXANDER** (1825-1902). An Irish novelist; born in Dublin; wrote *The Wooing O't, Her Dearest Foe, By Woman's Wit, Mona's Choice, A Life Interest, A Winning Hazard,* and *Barbara: Lady's Maid and Peeress.*

HEINE, HEINRICH (1797-1856). The greatest lyric poet of Germany; born of Jewish parents in Düsseldorf. In 1831 he settled in Paris, supported himself by his literary labors, and dwelt there till his death. From 1837 to the overthrow of Louis Philippe in 1848 he enjoyed a pension of $800 from the French government. As a poet Heine is remarkable for the simplicity and pathos of many of his lyric pieces. He collected them in *The Book of Songs;* wrote *Romanzero, Pictures of Travel, The Romantic School,* and *Atta Troll.* His works are published in 21 volumes. [See Ger. Lit.].

HELPS, SIR ARTHUR (1813-1875). An English essayist; born in Surrey; edited the speeches of the prince consort for Queen Victoria (1862); prepared for the press her *Highland Journals* (1868-1869); wrote *Las Casas, Columbus, Pizarro, Cortez,* and *The Spanish Conquest in America.* His *Essays,* particularly *Friends in Council,* have gained his greatest fame.

HEMANS, FELICIA DOROTHEA (BROWNE) (1793-1835). An English poet; born in Liverpool. She was the author of a number of works, the best of her productions being lyrics. Among them are *The Forest Sanctuary,* which included the well known "Casabianca"; *Records of Women, Hymns for Childhood, National Lyrics and Songs for Music,* and *Scenes and Hymns of Life.*

HENLEY, WILLIAM ERNEST (1849-1903). An English author; a collaborator with Robert Louis Stevenson for 13 years (1874-1887). Together they wrote the plays *Deacon Brodie, Beau Austin, Admiral Guinea,* and *Robert Macaire;* wrote *Views and Reviews, Literature; Views and Reviews, Painting and Sculpture; London Voluntaries, London Types, For England's Sake, Hawthorn and Lavender,* and *Poems.*

HENTY, GEORGE ALFRED (1832-1902). An English author; born in Cambridgeshire; served in the army in the early part of the Crimean War; war correspondent of the London *Standard* in various campaigns; wrote numerous popular historical novels for boys, including *All but Lost, The Tiger of Mysore, To Herat and Cabul, With Roberts to Pretoria, The Treasure of the Incas, With the British Legion,* and *With Clive in India.*

HERBERAY DES ESSARTS (? -1552). French translator, called "the founder of the heroic romance in France."

HERBERT, GEORGE (1593-1633). An English poet; was the author of poems entitled *The Temple* and a prose work entitled *The Country Parson.* A charming life of Herbert was written in 1670 by Izaak Walton.

HERDER, JOHANN GOTTFRIED VON (1744-1803). A German author. His greatest work is his *Ideas on the Philosophy of the History of Man.*

HEREDIA Y CAMPUZANO, JOSE MARIA DE (1803-1839). Cuban lyric poet, the first of the patriotic group. Wrote also the valuable *Lecciones de historia universal.*

HEROD'OTUS (484-424 B. C.). The "Father of History"; born at Helicarnassus, in Caria; traveled in Asia Minor, Egypt, and Syria, and in his old age recorded with fidelity the fruits of his observations and inquiries. His chief work was on Xerxes' invasion of Greece, in nine books. [See Gr. Lit.].

HERRERA, FERNANDO DE (1534-1597). Spanish poet, chief of the "Seville" school of lyric poetry. His masterpiece is *Por la vitoria de Lapanto.*

HERRICK, ROBERT (1591-1674). An English poet; a collection of his poems entitled *Hesperides* and *Noble Numbers* appeared in 1648; the songs *Gather Ye Rosebuds While Ye May* and *Cherry Ripe* are examples of lyrical art in English; after his death his fame declined and his works were neglected. His fame revived in the nineteenth century.

HERTZ, HENRIK (1798-1870). A Danish dramatist and poet; born in Copenhagen, of Jewish extraction. His *King René's Daughter* (1845) won him universal recognition, and has been translated into English by Sir Theodore Martin (1850).

HESIOD (flourished about 750 B. C.). One of the earliest Greek poets; born in Ascra, Boeotia. [See Gr. Lit.].

HEWLETT, MAURICE HENRY (1861-). An English novelist. His reputation as a writer is assured by his novel, *The Forest Lovers;* his short stories, *Madonna of the Peach Tree* and *The Duchess of Nona* in *Little Novels of Italy,* and *New Canterbury Tales.*

HEYSE, PAUL (1830-). Noted German writer of short stories, poems, and dramas.

HEYWOOD, THOMAS (?1575-?1650). English poet and author, the most prolific playwright of the period. His best production is *A Woman Killed with Kindness.*

HICH'ENS, ROBERT SMYTHE (1864-). An English novelist. His *Green Carnation* (1894) was published anonymously and created a literary sensation. Other of his novels are *An Imaginative Man, Flames, The Slave, Tongues of Conscience,* and *Felix.*

HIGGINSON, THOMAS WENTWORTH (1823-). An American author and essayist; born in Cambridge, Mass. His works include a *History of the United States, Essays,* and a *Memoir of Longfellow.* A collection of Higginson's works were published in seven volumes in 1900.

HILDRETH, RICHARD (1807-1865). An American historian; born at Deerfield, Mass. Besides *The Slave* (1837) he published other books on the social aspects of slavery; his most noteworthy effort was the *History of the United States,* in six volumes (1849-1856).

HOBBES, JOHN OLIVER, or **PEARL RICHARDS CRAIGIE** (1867-1906). An English novelist; born in Boston, Mass. Taken to England in childhood. She wrote *The Sinner's Comedy, A Study in Temptations, The Gods, Some Mortals, and Lord Wickenham, A Bundle of Life, Robert Orange, The Serious Wooing,* and *Love and the Soul Hunters.*

HOFFMAN, AUGUST HEINRICH (1798-1874). German philologist and poet. Wrote *Alemannische Lieder, Jägerlieder, Reineke Vos, Deutsche Philologie.*

HOFFMANN, ERNST TEODOR AMADEUS (1776-1822). German romantic novelist. His most noted works are *Die Elixire des Teufels* and *Lebensansichten des Katers Murr.*

HOGG, JAMES (1770-1835). A Scotch poet, known as the "Ettrick Shepherd." After receiving a very scanty education he began to earn his bread by daily labor as a shepherd. The appearance of *The Queen's Wake* in 1813, with its charming ballad of Kilmeny, established Hogg's reputation as a poet. Among his poems and songs are *When the Kye Come Hame* and *Flora Macdonald's Farewell.*

HOLBERG, LUDWIG (1684-1754). A Danish poet, novelist, and historian. His works are of four classes —poems, stage pieces, philosophical treatises, and historical works. His poems are chiefly satirical. His best works are *Henrik and Pernille* and *Subterranean Journey of Niels Klim.* He is known as "the father of Danish comedy." [See Scand. Lit.].

HOLLAND, JOSIAH GILBERT (1819-1881). An American author; born in Belchertown, Mass. He became assistant editor of the Springfield *Republican,* of which he was part proprietor from 1851 to 1866; wrote the novels *Bay Path, Seven-oaks, Nicholas Minturn,* and *Arthur Bonnicastle;* the poems *Bitter Sweet, Kathrina,* and *Garnered Sheaves.*

HOLMES, OLIVER WENDELL (1809-1894). A celebrated American author, son of a Unitarian minister; became professor of anatomy and physiology at Dartmouth College, but resigned and settled in Boston as a general practitioner. In 1847 he was elected to the chair of anatomy in Harvard, a position he held till 1882. A successful professor, it is as an essayist, novelist, and poet that he is remembered. The appearance of *The Autocrat of the Breakfast-Table,* with its quaint humor, fresh thought, and charming egotism took literary America by storm. The *Professor* and the *Poet at the Breakfast-Table* followed in after years and remain his most widely popular works. *Elsie Venner, The Guardian Angel, Songs of Many Seasons, Memoirs of Motley and of Emerson* are some of his many works, all of which bear the impress of his personality.

HOMER (flourished about 1000 B. C.). The great epic poet of Greece and the greatest of all time; author of the *Iliad* and the *Odyssey;* is said, when old and blind, to have wandered from city to city rehearsing his verses. It is only modern criticism that has called in

question his existence, and has ventured to argue that the poems ascribed to him are a mere congeries of compositions of the fabulous age of Greece, but the unity of the plan and the simplicity of the style of the poems go to condemn this theory. [See Gr. Lit.].

HOOD, THOMAS (1799-1845). An English poet and humorist. From 1829 to 1837 he conducted his *Comic Annual*. He contributed to *Punch* during his last illness *The Song of the Shirt, The Bridge of Sighs,* and *The Lay of a Laborer*. Hood is unrivaled as a punster, and he possesses a singular power of combining the humorous with the pathetic. His best comic poem is *Miss Kilmansegg*.

HOOKER, RICHARD (about 1553-1600). An English clergyman; the author of the most famous treatise on the constitution of the Church of England, the celebrated *Laws of Ecclesiastical Polity*.

HORACE or **QUINTUS HORATIUS FLACCUS** (65-8 B. C.). A Latin lyric poet. The talent which he had displayed procured him the friendship of two eminent poets, Vergil and Varius, and to them he was indebted for his first acquaintance with Maecenas, a refined man of the world. Nine months after, Maecenas received Horace into the circle of his intimate friends and after some years presented him with the Sabine estate which Horace so often mentions in his poems. It was sufficient to maintain him in ease and comfort during the remainder of his life. Horace wrote the *Odes, Epodes, Satires,* and *Epistles*.

HORNE, RICHARD HENGIST (1803-1884). An English poet and miscellaneous author. He wrote *Orion: a Tragic Poem*, his best work, and two tragedies, *Cosmo de Medici* and *The Death of Marlowe*.

HOVEY, RICHARD (1864-1900). An American poet; born at Normal, Ill; wrote *Launcelot and Guenevere, Quest of Merlin, The Marriage of Guenevere, The Birth of Galahad, Taliesin, Songs from Vagabondia* in collaboration with Bliss Carman, and *Along the Trail*.

HOWARD, HENRY, EARL OF SURREY (about 1517-1547). English soldier and poet; introduced into the language blank verse and the sonnet of three quatrains and a couplet.

HOWE, JULIA WARD (1819-). An American poet; married Dr. S. G. Howe, who was noted for his labors in the education of the blind; wrote *Passion Flowers, Words for the Hour, Later Lyrics,* including *Battle Hymn of the Republic;* two dramas, *The World's Own* and *Hyppolytus; Life of Margaret Fuller,* and *Reminiscences*.

HOWELLS, WILLIAM DEAN (1837-). An American author; born in Martins Ferry, Ohio. From 1861 to 1865 he resided in Venice as United States consul. Soon after his return appeared a series of papers under the title *Venetian Life*, followed by a similar volume, *Italian Journeys*. He was assistant editor of the *Atlantic Monthly* during 1866-1871, and editor in chief from 1871 till his resignation in 1881. He is seen at his best in the *Rise of Silas Lapham* and *A Hazard of New Fortunes*. His has been the most influential work in American literature during the last 30 years.

HOWITT, WILLIAM (1792-1879). An English author; born in Derbyshire. With his wife, **MARY HOWITT** (1799-1888), he wrote much in collaboration, though each wrote a great deal independently.

HUGHES, THOMAS (1823-1896). An English judge, author, and philanthropist. As an author, Thomas Hughes is doubtless best known by his first work, *Tom Brown's School Days*, published in 1856, which has gone through many editions and been translated into several languages. He wrote also *Alfred the Great* and *Tom Brown at Oxford*.

HUGO, VICOMTE VICTOR MARIE (1802-1885). A distinguished French poet and man of letters; born in Besançon, France. His father was a general in the French army. In 1822 he brought out the first volume of his *Odes and Ballads*. Hugo, who published a number of dramatic pieces of various merit, was, after much opposition, admitted into the Academy in 1841. On the *coup d'état* of December 2, 1851, Hugo, then a member of the legislative assembly, was among those deputies who vainly attempted to assert the rights of the assembly and to propose the constitution. His conduct led to his proscription. He took refuge in the island of Jersey, and subsequently in that of Guernsey, having steadfastly refused to avail himself of the general amnesties issued in 1859 and in 1869. His trenchant satire, *Napoleon the Little*, appeared at Brussels in 1852, and was rigorously suppressed in France, into which country it had been smuggled. On the fall of the empire in 1870 he returned to France, was elected to the National Assembly, but soon resigned and repaired to Brussels, whence he was expelled by the government on account of the violence of his political writings and his sympathy with the Communists. Returning to Paris he was elected a senator for life in 1876. *Notre Dame de Paris, Les Misérables, Ninety-three* are his great novels. His best lyric verses are found in *The Terrible Year*, treating patriotically the French disaster of 1870-1871. [See Fr. Lit.].

HUME, DAVID (1711-1776). Scottish historian and philosopher. In 1751 appeared at Edinburgh his *Inquiry Concerning the Principles of Morals*. In 1754 he published the first volume of his *History of England*, his best work, which he did not complete till 1762. [See Eng. Lit.].

HUNT, JAMES HENRY LEIGH (1784-1859). An English poet and essayist. He was the personal friend of Byron, Shelley, Keats, Lamb, and Coleridge. The *Story of Rimini* is his longest and perhaps his best known poem. He wrote also *Palfrey* and *Abou ben Adhem*. His *Imagination or Fancy* contains the familiar essay *What is Poetry?* and his *Men, Women, and Books* is a charming collection of miscellany.

IBSEN, HENRIK (1828-1906). A Norwegian novelist and dramatist; born in Skien, Norway. His youth was passed in extreme poverty. His attention was turned to dramatic writing and he produced *The Banquet at Solhaug, The Vikings at Helgeland, Love's Comedy, Ghosts, A Doll's House, When We Dead Awaken, The Pillars of Society, The Wild Duck*, etc. In 1857 he became artistic director of the Norwegian Theater at Christiania. [See Scand. Lit.].

INGELOW, JEAN (1820-1897). An English poet and story writer. Her first published work appeared anonymously in 1850, but not till the publication of *Poems* in 1863 did Miss Ingelow become famous. This volume won the enthusiastic praise of critics. She wrote a great many poems and novels, among which are *Poems of Old Days and New, Off the Skelligs, Mopsa,* and *Stories Told to a Child*.

INGERSOLL, ROBERT GREEN (1833-1899). An American lawyer; born in Dresden, N. Y.; wrote *The Gods and Other Lectures, Great Speeches, Lectures Complete,* and *Prose Poems and Selections*.

IRELAND, WILLIAM HENRY (1777-1835). A Shakespearean forger; born in London; wrote a remarkable series of forgeries which deceived many scholars. They included legal documents, verses, and letters purporting to be Shakespeare's, and two plays, *Vortigern* and *Henry II*. He confessed in 1805.

IRVING, WASHINGTON (1783-1859). An American author; born in New York, where his father had emigrated from Scotland before the Revolution. He was originally educated for the legal profession, but his tastes were all in the direction of literature, in which field he made his first appearance by the publication, in 1802, of the *Letters of Jonathan Oldstyle*, in the New York *Morning Chronicle*. In December, 1809, appeared his celebrated *History of New York, by Diedrich Knickerbocker*. In May, 1815, he embarked for England, where he commenced in 1818 the series of papers entitled *The Sketch-Book*, which was published in New York and London. Up to 1832 Mr. Irving continued to reside in Europe. During this period were composed some of his most famous literary works. He wrote also *Alhambra, Christopher Columbus, Bracebridge Hall, Washington, Conquest of Granada, The Rocky Mountains, Wolfert's Roost, Goldsmith,* and *Mahomet*.

ISOCRATES (436-338 B. C.). One of the 10 Greek orators; taught at Chios; left 21 orations and 10 letters.

JACKSON, HELEN FISKE HUNT (1831-1885). An American author; wrote under the pen name of "H. H."; born in Amherst, Mass. She wrote *Ramona, A Century of Dishonor, Mercy Philbrick's Choice, Hetty's Strange History,* and several poems.

JAMES, GEORGE PAYNE RAINSFORD (1801-1860). An English novelist; wrote about 60 novels. The best examples of his style are perhaps *Richelieu, Philip Augustus, Henry Masterton, Mary of Burgundy, Darnley, Corse de Léon, The Smuggler*.

JAMES, HENRY (1843-). An American novelist and essayist; born in New York. From 1869 until 1907 he made his home in England. Among his works are *The Bostonians, The Sacred Fount, What Maisie Knew, The Wings of a Dove, The Better Sort, The Soft Side, The Awkward Age, In the Cage, Washington Square, Daisy Miller, Roderick Hudson*. His published works number over 40 volumes. His writings are

marked by an elusiveness of thought and complexity of style only thoroughly appreciable by a reader of marked intuition.

JAMI, NUR-ED-DIN ABDUR RAHMAN (1414-1498). A romantic, lyric, and mystic Persian writer, the last of the great Sufi poets; most famous work is *Haft Aurang,* a collection of seven poems; composed three *Diwans,* collections of lyrics and odes; *Baharistan* in his well-known prose work.

JEROME, JEROME KLAPKA (1859-). An English humorous writer; wrote *On the Stage—and Off, Stage Land, Barbara, Sunset, Idle Thoughts of an Idle Fellow, Three Men in a Boat, Diary of a Pilgrimage, John Ingerfield, Sketches in Lavender, Observations of Henry,* and *Paul Kelver.*

JERROLD, DOUGLAS WILLIAM (1803-1857). An English humorist; one of the most brilliant wits of his day. He wrote about 40 plays, *Black-Eyed Susan* being his chief success; joined the staff of *Punch,* in which first appeared the *Caudle Lectures.*

JEVONS, WILLIAM STANLEY (1835-1882). An English economist; born at Liverpool; wrote *Treatise on Logic, Theory of Political Economy, Money and the Mechanism of Exchange,* and *Coal Question.*

JEWETT, SARAH ORNE (1849-1909). An American writer; born in South Berwick, Me. Her best work portrays New England character. Among her works are *Deephaven, Play Days, Old Friends and New, The Mate of the Daylight, A Country Doctor, A Marsh Island, A White Heron, The King of Folly Island, The Life of Nancy,* and *The Country of the Pointed Firs.*

JODELLE, ETIENNE (1532-1573). French dramatist. Wrote *Cléopâtre, Dido, Eugène.*

JOHN OF SALISBURY (about 1120-1180). An English scholar and churchman; for 30 years the central figure of English learning; wrote *Policraticus sive de nugis Curialium et Vestigiis Philosophorum, Metalogicus, Vita et Passio Sancti Thomae, Entheticus, Vita Sancti Anselmi,* and *Historia Pontificalis.*

JOHNSON, E. PAULINE (1862-). A Canadian poet; born at Chiefswood, Ontario; daughter of George Henry M. Johnson, chief of the Mohawk Indians, and Emily S. Howells of Bristol, England; wrote a volume under the title of *The White Wampum.*

JOHNSON, ROSSITER (1840-). An American author and editor; born at Rochester, N. Y.; wrote *Phaeton Rogers, Idler and Poet, A History of the French War,* and *A History of the War of Secession.*

JOHNSON, SAMUEL (1709-1784). One of the most distinguished English writers; born in Lichfield, England, where his father, Michael Johnson, was a bookseller. Among many great works the most useful to mankind was his *Dictionary.* In 1759 he wrote his celebrated romance of *Rasselas, Prince of Abyssinia,* which fine production he composed in the evenings of one week in order to defray the funeral expenses of his aged mother. At length, in 1762, the Bute administration granted him a pension of $1,500 per annum, which he accepted after a short struggle against the reception of a favor from the house of Hanover. The concluding portion of Johnson's life was saddened by the loss of many old friends and by declining health. His remains were interred in Westminster Abbey with great solemnity. His statue has been placed in St. Paul's. Among his works are *Lives of the Poets, The Rambler,* and *The Vanity of Human Wishes.* [See Eng. Lit.].

JOHNSTON, MARY (1870-). An American novelist; born at Buchanan, Va.; wrote *Prisoners of Hope, To Have and to Hold,* and *Audrey.*

JOINVILLE, JEAN, SIRE DE (1224-1317). French historian, remembered particularly for his *Histoire de Saint Louis.*

JO'KAI (*yo'ko-i*), **MAURUS** (1825-1904). A Hungarian novelist; born in Komorn. He wrote almost 300 volumes, comprising novels, dramas, poems, including *The New Landlord, There is No Devil. Love's Fools,* the drama *Milton,* and *History of Hungary.*

JONES, SIR WILLIAM (1746-1794). An English orientalist, jurist, and man of letters; wrote a *Life of Nadir Shah, Persian Grammar, Poeseos Asiaticae Commentariorum Libri Sex, Essay on the Law of Bailments,* translations of *Sakuntala,* and *Ordinances of Manu.*

JONSON, BEN (1573-1637). An English dramatist; born at Westminster; was in his youth first a bricklayer, afterwards a soldier in the Netherlands, whence he returned about 1592; married a shrew and became connected with the stage. He was one of the most learned men of his age, and for 40 years the foremost, except Shakespeare, in the dramatic and literary world. Killing his challenger in a duel nearly cost him his life in 1598. He was branded on the left thumb, imprisoned, and his goods confiscated. In prison he turned Catholic, but 12 years later reverted to Protestantism. For 10 years after Shakespeare's death he produced no dramas. He died in poverty, but was buried in Westminster Abbey. He wrote at least 16 plays, among them *Every Man in His Humour,* in which Shakespeare acted; *The Poetaster,* the tragedy of *Sejanus, The Silent Woman,* a comedy; and his best work, *The Alchemist.* [See Eng. Lit.].

JORDANES (flourished 550). A Latin historian; wrote *De Rebus Geticis* or *Getica,* a work of the highest importance on the early history of the Goths.

JOSEPHUS, FLAVIUS (about 37-about 102). A famous Jewish historian; wrote *History of the Jewish War, Jewish Antiquities,* and *Apology* for the Jews against Apion.

JOUBERT, JOSEPH (1754-1824). French philosopher, author of *Pensées.*

KALIDA'SA (flourished about 500?). A great Indian dramatist and poet; was the author of *The Lost Ring,* translated by Sir William Jones, and much praised by Goethe and Max Muller, and *The Hero and the Nymph.*

KARAMZIN', NIKOLAI MIKHAILOVITCH (1766-1826). A Russian historian and author. His first work was *Letters of a Russian Traveler,* which gained him a high reputation. It was followed by his *History of Russia.* [See Rus. Lit.].

KEATS, JOHN (1795-1821). An English poet; born in London, England. The first poems Keats published in 1817 were dedicated to Leigh Hunt. In the next year he published *Endymion,* a poetical romance, and in 1820 *Lamia,* and other poems. He died in Rome. Shelley lamented his poet friend in the beautiful and well known *Adonais.* [See Eng. Lit.].

KEBLE, JOHN (1792-1866). An English poet; born in Fairford, Gloucestershire, England. Of his great work, *The Christian Year,* hundreds of thousands of copies have been sold, and from its profits the author built one of the most beautiful parish churches in England. He translated parts of the *Library of the Fathers,* and wrote seven *Tracts for the Times.*

KEM'PIS, THOMAS A' (1380-1471). A German mystic; born in Kempen (whence his name, "Thomas from Kempen"), near Cologne. His true name was Hamerken. He was author of the *Imitation of Christ.*

KERNIGHAN, ROBERT KIRKLAND (1857-). A Canadian poet; known as "The Khan," author of songs and patriotic and humorous verse, including "Men of the Northern Zone," and "Canada First."

KEY, FRANCIS SCOTT (1780-1843). An American poet; born in Frederick County, Md. He was a lawyer by profession. Being detained on one of the British ships during the bombardment of Fort McHenry, September 14, 1814, he composed the words of *The Star-Spangled Banner.* The words were sung to the tune of *Anacreon in Heaven.*

KHERASKOFF, MIKHAIL MATVEYEVITCH (1733-1807). A Russian poet; "the dean of Russian literature"; born in Poltava. His chief work is the *Rossyada,* an epic which describes, on the plan of the *Aeneid,* the invasion of Kazan by Ivan the Terrible.

KIELLAND, ALEXANDER LANGE (1849-1906). Norwegian author, satirical and epigrammatic. Won notice by his *Garman og Worse.*

KINGLAKE, ALEXANDER WILLIAM (1809-1891). An English historian; wrote *Eothen,* descriptive of a tour in the Orient, and *The Invasion of the Crimea,* in eight volumes (1863-1887).

KINGSFORD, WILLIAM (1819-1898). Canadian historian, author of *Canadian Archaeology* and a valuable *History of Canada.*

KINGSLEY, CHARLES (1819-1875). An English author; born at Holne vicarage, near Dartmoor; was the author in 1848 of a drama entitled *The Saint's Tragedy,* with St. Elizabeth of Hungary for heroine, which was followed successively by *Alton Locke, Yeast, Hypatia,* and *Westward Ho!* and besides other works, including *Two Years Ago, Water Babies,* and *Hereward the Wake;* he was the author of the popular ballads of *The Three Fishers, The Starlings,* and *The Sands o' Dee.* Written up under social reformers.

KINGSTON, WILLIAM HENRY GILES (1814-1880). An English novelist and writer of books for boys; wrote *The Circassian Chief, Peter the Whaler, The Fireships, Ben Burton, The Three Midshipmen,*

The Three Lieutenants, The Three Commanders, The Three Admirals, and many historical works.

KIPLING, (JOSEPH) RUDYARD (1865-). An English author; born in Bombay. He was educated in England, and in 1882 went to India and joined the staff of the *Civil and Military Gazette,* Lahore, for which paper his early tales were written. He depicts Anglo-Indian and military life. Among his works are the novels *The Light That Failed, Soldiers Three, Stalky and Co.,* and *Kim,* whose wonderful revelation of India marks it as his best romance; *The Recessional, Barrack Room Ballads, White Man's Burden,* and *Departmental Ditties,* which include his best poetry, and two *Jungle Books,* give a highly imaginative picture of the older India.

KIRBY, WILLIAM (1817-1906). Canadian author, whose *Le Chien d' Or* is one of the best Canadian romances. Wrote also poems and dramas.

KLEIST, HEINRICH VON (1777-1811). German dramatist and poet. His *Broken Pitcher* is considered by some the best one act comedy of Germany.

KLOPSTOCK, FRIEDRICH GOTTLIEB (1724-1803). German poet; born at Quedlinburg; distinguished as the author of an epic poem entitled the *Messiah,* the publication of which did much to enrich the poetic vocabulary of Germany. [See Ger. Lit.].

KORNER, KARL THEODOR (1791-1813). German poet and dramatist, famous for his songs, collected as *Leier und Schwert.*

KOTZEBUE, AUGUST FRIEDRICH FERDINAND VON (1761-1819). A German dramatist. Of about 200 tragedies, comedies, dramas, and farces, the best known now is *Misanthropy and Repentance,* reproduced in Paris as late as 1862, and famous in the United States and England in Sheridan's adaptation entitled *The Stranger.*

KRASINSKI, ZYGMUNT, COUNT (1812-1859). One of the greatest of Poland's poets; born in Paris; published *Undivine Comedy, Irydion, Dawn,* and *Psalms of the Future.*

KRASZEWSKI, JOSEPH IGNACY (1812-1827). Polish historian, novelist, and poet; published over 350 titles, chiefly fiction. *Anafielas* is his best poetical work.

KYD, THOMAS (about 1557-about 1595). English dramatist. Wrote *Jeronimo* and *The Spanish Tragedy.*

LABERIUS, DECIMUS (105-43 B. C.). A famous Roman writer of farces. Only fragments of his works remain.

LA BRUYERE, JEAN DE (1645-1696). A French essayist; born in Paris; tutor to the grandson of the great Condé, and court attendant; wrote *Caractères,* some translations, his *Discours,* and a few *Letters.*

LA FONTAINE, JEAN DE (1621-1695). A French poet and fabulist. *Contes et Nouvelles en vers* written 1665 to 1683, and *Fables,* 1668 to 1671, made him one of the most popular writers in France.

LAMARTINE, ALPHONSE DE (1790-1869). An eminent French historian, poet, orator, and statesman; wrote *Méditations poétiques, Nouveilles meditations, Harmonies, Jocelyn, La chute d'un ange, Recueillements, Harmonies poétiques et religieuses, Histoire des Girondins,* and others, which fill 40 volumes.

LAMB, CHARLES (1775-1834). A brilliant English essayist. In 1796 and 1797 some short poems by him appeared along with others by Coleridge, and in 1798 he published a volume of poems in conjunction with his friend, Charles Lloyd. It met with little success. Nor was his tale of *Rosamund Gray* much more favorably received. Under the name of *Elia* a series of his essays has been frequently republished in a collected form since 1823; latterly along with *Last Essays of Elia,* first published in 1833. Here, in a style ever happy and original, and with humor of the rarest and most pungent description, he has carried the short essay to a point of excellence perhaps never before attained.

LAMENNAIS, HUGUES FELICITE' ROBERT DE (1782-1854). French religious and political writer. His *Essai sur l' indifférence en Matière de religion,* was a masterpiece of philosophy and served to make him known over Europe. The greater part of his works were aimed against monarchy and the Papacy.

LAMPMAN, ARCHIBALD (1861-1899). A Canadian poet; born in Morpeth, Ontario, wrote *Among the Millet and Other Poems* and *Lyrics of Earth.*

LANDON, LETITIA ELIZABETH (1802-1838). An English author. She wrote several volumes of verse, under the initials "L. E. L.," which include her first poem, *Rome,* and the *Improvisatrice.* The best of her three novels is *Ethel Churchill*

LANDOR, WALTER SAVAGE (1775-1864). An English poet. In 1824 he took up his abode in Florence, where he resided for several years, and where many of his works were written. His principal poetical works are *Hellenics, Poems and Inscriptions, Dry Sticks,* and *Last Fruit off an Old Tree.* His most important prose work is the *Imaginary Conversations of Literary Men and Statesmen,* which appeared in five volumes between 1824 and 1829.

LANG, ANDREW (1844-). A British author. A versatile writer, he published several volumes of ballads and other light verse: *Ballads and Lyrics of Old France, Ballades in Blue China.* He has written a number of prose books, among which is *Custom and Myth,* and is a frequent contributor to periodical literature. Among his essays are *Letters to Dead Authors, Letters on Literature,* and *Essays in Little.* In biography he wrote a good *Life* of J. G. Lockhart.

LANGLAND, WILLIAM (about 1332-about 1400). An English poet. His great poem is *Piers Plowman,* an allegory of life written in the alliterative or head-rhyme measure. Langland was, next to Chaucer, the greatest English poet of the fourteenth century.

LANIER, SIDNEY (1842-1881). An American poet; born at Macon, Ga. The poems *Corn,* one of his earliest pieces, and *The Marshes of Glynn* show insight into nature. He wrote also several works in prose, mostly pertaining to literary criticism. Among the former are *The Science of English Verse* and *The English Novel and the Principles of its Development.* His fame is steadily growing, and he is coming to be regarded as the greatest American poet of the last quarter of the nineteenth century.

LARCOM, LUCY (1826-1893). An American poet; born in Beverly, Mass. In her youth, a factory girl in Lowell, Mass. Her later life was mainly devoted to literary work. She wrote stories and four or five volumes of poetry, among which were *Ships in the Mist* and *The Sunbeam.*

LA ROCHEFOUCAULD, FRANCOIS (1613-1680). French moralist and satirist. In 1665 was published his *Maximes,* or *Reflexions ou sentences et Maximes morales,* which are unsurpassed in literary excellence. His *Memoires* were published in a complete form in 1817 and his *Lettres in* 1818.

LAROUSSE (*lah-roos'*), **PIERRE** (1817-1875). A celebrated French grammarian and lexicographer; best known by his *Grand dictionnaire universel du XIXe siècle.* This work is kept up to date by a weekly *Revue Encyclopédique,* and there is published in connection with it a small and popular *Dictionnaire complet illustré.*

LA SALLE, ANTOINE DE (1398-1461?). French satirist and prose narrator. His works include *La salade* and the compilation, *Cent nouvelles nouvelles.*

LATHROP, GEORGE PARSONS (1851-1898). An American journalist and poet; born in the Sandwich Islands; wrote *Rose and Roof Tree, Study of Hawthorne, Afterglow, A Masque of Poets, An Echo of Passion, In the Distance, Spanish Vistas, Newport, Gold of Pleasure,* and *Dreams and Days.*

LAVATER (*lah-vah-tair'*), **JOHANN CASPAR** (1741-1801). Swiss physiognomist and mystic; born in Zurich; wrote *Schweizerlieder, Aussichten in die Ewigkeit,* and *Physiognomische Fragmente.*

LAYAMON (about 1200). An early English writer of the *Brut,* a metrical or rhymed chronicle of events in England. He was a priest at Ernley on the Severn. He derived much of his information from Wace's *Roman de Brut,* which in turn was founded upon Geoffrey of Monmouth's *History of the British Kings.* The *Brut* contains 32,243 short lines in which both alliterative or head-rhyme and assonance or end-rhyme are employed.

LECKY, WILLIAM EDWARD HARTPOLE (1838-1903). An English historian; born near Dublin, Ireland. Already in 1861 he had published anonymously *The Leaders of Public Opinion in Ireland,* four brilliant essays on Swift, Flood, Grattan, and O'Connell. Later works were his learned, luminous, and dispassionate *History of the Rise and Influence of the Spirit of Rationalism in Europe, History of European Morals from Augustus to Charlemagne,* and *History of England in the Eighteenth Century.*

LE CONTE DE LISLE, CHARLES MARIE (1818-1894). The leading French poet of the Parnassian school; wrote *Poèmes antiques, Poèmes et poésies, Poémes barbares, Poèmes tragiques, Derniers poèmes;* translated the *Iliad, Odyssey, Horace, Sophocles,* and *Euripides.* Elected to the French Academy (1887)

LE GALLIENNE, RICHARD (1866-). An English journalist and man of letters; born in Liverpool; wrote the *Religion of a Literary Man, Rudyard Kipling, Retrospective Reviews.* In 1898 he took up his residence in New York and wrote *The Quest of the Golden Girl;* an adaptation of the *Rubaiyat* of Omar Khayyam; *Travels in England, George Meredith, Some Characteristics,* and an adaptation of the poems of Hafiz.

LELAND, CHARLES GODFREY, or **"HANS BREITMANN"** (1824-1903). An American poet, humorist, and writer; born in Philadelphia; wrote *Hans Breitmann's Ballads, The Poetry and Mystery of Dreams, Meister Karl's Sketch Book, Pictures of Travel, Sunshine in Thought, Heine's Book of Songs, Legends of Birds,* and many others.

LELAND or **LEYLAND, JOHN** (about 1506-1552). An English antiquary whose MSS. in the Bodleian Library at Oxford are invaluable to historians; wrote *A New Yeare's Gift to King Henry VII. in the 37th Yeare of His Raygne, Commentarii de Scriptoribus Britannicis, Itinerary of England,* and *De Rebus Britannicis Collectanea.*

LE MOINE, SIR JAMES MACPHERSON (1825-). A Canadian naturalist and author; born in Quebec. His work on Canadian history and ornithology is marked by more than ordinary thoroughness and reliability; wrote *L'ornithologie du Canada, Legendary Lore of the Lower St. Lawrence, Les pêcheries du Canada, Maple Leaves, The Tourists' Note Book, Quebec, Past and Present; The Scot in New France, Chronicles of the St. Lawrence, Picturesque Quebec, Monographies et esquisses, Canadian Heroines, Birds of Quebec,* and *Conférences et mémoires, Histoire, archéologie.*

LEMON, MARK (1809-1870). An English journalist; the founder and editor of *Punch.* With Henry Mayhew he founded *Punch,* and the first number appeared July 17, 1841. Among his works are *Faulkner Lyle, Leyton Hall,* and his well known *Jest Book.*

LERMONTOFF, MIKHAIL YURYEVITCH (1814-1841). The greatest Russian poet after Pouchkine; wrote *On the Death of a Poet* to commemorate Pouchkine (1837), *Hero of Our Time, The Demon, Song of the Merchant, Kalashnikoff,* and *The Circassian Boy.* [See Russ. Lit.].

LE SAGE, ALAIN RENE (1668-1747). A French novelist and dramatist; famous for his *Gil Blas,* his greatest novel; *Turcaret,* his greatest comedy; *Le diable boiteux,* and *Crispin, rival de son maître.*

LESCARBOT, MARC (about 1570-1630). A French writer who went to Canada in 1605 to report on the settlement at Port Royal. In 1607 he embodied his observations in a book, *Histoire de la Nouvelle France.*

LESSING, GOTTHOLD EPHRAIM (1729-1781). A German author and founder of modern German literature; born at Kamenz, Saxony; son of the pastor there; sent to study theology at Leipzig, studied hard; conceived a passion for the stage; wrote plays and criticisms; wrote an essay on Pope; took English authors as his models, revolting against those of France; made it his aim to inaugurate or rather revive a purely German literature, and produced examples regarded as classics to this day. His principal dramas are *Miss Sara Sampson, Minna von Barnhelm, Emilia Galotti,* and *Nathan der Weise,* and his principal prose work is his *Laocoon,* a critical work on art still in high repute. [See Ger. Lit.]

LEVER, CHARLES JAMES (1806-1872). An Irish novelist; born at Dublin; was by profession a physician; author of numerous Irish stories written in a rollicking humor, *Harry Lorrequer, Charles O'Malley, Jack Hinton, Tom Burke of Ours, The Martins of Cro' Martin, Roland Cashel,* and *The Dodd Family Abroad.*

LEWES, GEORGE HENRY (1817-1878). An English critic and man of letters; wrote *Biographical History of Philosophy from Thales to Comte, Comte's Philosophy of the Sciences, Life and Works of Goethe, Sea-Side Studies at Ilfracombe, Physiology of Common Life;* founded the *Fortnightly Review* (1865).

LEWIS, MATTHEW GREGORY (1775-1818). An English writer, sometimes nicknamed "Monk" Lewis, from his book *Ambrosio, or the Monk* (1795), which gained a wide success.

LIE, JONAS LAURITZ EDEMIL (1833-1908). A Norwegian novelist. His novels give admirable realistic pictures of life in Norway, especially of the fisher-folk of the west coast. *The Pilot and His Wife* is the best known of his 20 novels.

LIGHTHALL, WILLIAM DOUW (1857-). A Canadian writer. Has published *Thoughts, Moods and Ideals* (1887), *Montreal after 250 years* (1892), and other works in verse and prose.

LITTLETON or **LYTTLETON, SIR THOMAS** (1402-1481). An English jurist; his reputation rests upon his work on *Tenures,* which was originally written in Norman-French, or rather law French.

LIVINGSTON, EDWARD (1764-1836). An eminent American statesman and jurist; mayor of the city of New York (1801); wrote *A System of Penal Law* and *Criminal Jurisprudence.*

LOCKHART, JOHN GIBSON (1794-1854). The biographer of Sir Walter Scott; a Scottish lawyer and writer; wrote *Peter's Letters to His Kinsfolk;* married Sophia, daughter of Sir Walter Scott (1820); wrote the novels *Valerius, Adam Blair, Reginald Dalton,* and *Matthew Wald;* editor of the *Quarterly Review* (1825); wrote *Life of Burns, History of Napoleon,* and the *Life of Scott,* which, next to Boswell's *Johnson,* is the most admirable biography in English.

LONGFELLOW, HENRY WADSWORTH (1807-1882). An eminent American poet; born in Portland, Me. He was graduated from Bowdoin College (1825); soon after appointed professor of modern languages at his alma mater, with four years' leave of absence for travel and study; sailed for Europe, May, 1826, returned in the summer of 1829, and began his duties in the following September; resigned in 1835 and went to Europe for a year's study to fit for the Smith professorship at Harvard University. He wrote *Hyperion,* a romance in prose, and a succession of poems and lyrics, among the former *Evangeline, The Golden Legend, Hiawatha,* and *Miles Standish.* Longfellow is one of the most widely influential forces in American emotional life.

LONGINUS, DIONYSIUS CASSIUS (about 213-273). A philosopher and rhetorician; born in Athens; studied Greek literature at Alexandria; settled as a teacher in Athens. *On the Sublime* and a few fragments of his works have survived.

LOSSING, BENSON JOHN (1813-1891). An American historian; born in Beekman, N. Y. He was a voluminous writer, but his most useful and enduring works were his great *Pictorial Field-Books* of the Revolution, the War of 1812, and the Civil War. He wrote *Life and Times of Philip Schuyler, Our Country,* and *Cyclopaedia of United States History.*

LOTHROP, HARRIET MULFORD (STONE) (1844-). An American writer; born in New Haven, Conn.; married Daniel Lothrop, the Boston publisher (1881); wrote, under the name of Margaret Sidney, *Five Little Peppers, and How They Grew; The Pettibone Name, What the Seven Did, The Minute-Man,* and *Dilly and the Captain.*

LOTI, PIERRE (1850-1907). A French poet and novelist; real name Louis Marie Julien Viaud. In 1891 he was elected a member of the French Academy. His works include *Le Desert, Galilee, Le livre de la pitié et de la mort,* and *Figures et choses qui passent.*

LOUNSBURY, THOMAS RAYNESFORD (1838-). An American critic and historian of literature; born in Ovid, N. Y.; wrote *Studies in Chaucer,* his most important work; *History of the English Language,* a *Life of James Fenimore Cooper,* which is regarded as one of the best short biographies, and *Shakespearean Views.*

LOVELACE, RICHARD (1618-1658). An English poet; imprisoned for the active part which he took in the Revolution; wrote *The Scholar,* a comedy; *The Soldier,* a tragedy; and while in prison a volume of poems, *Lucasta.* This latter contains his well known lyrics *Going to the Wars* and *To Althea from Prison.*

LOVER, SAMUEL (1797-1868). An Irish author; born in Dublin; wrote the ballad, *Rory O'More, Legends and Stories from Ireland, Handy Andy, Treasure Trove,* and *Songs and Ballads.*

LOWELL, JAMES RUSSELL (1819-1891). An American essayist, poet, and diplomatist; born in Cambridge, Mass. Succeeding Longfellow in the chair of modern languages and literature in Harvard (1855), he visited Europe to study; returned as United States minister to Spain (1877), was transferred to England (1880-1885). Of his prose work *My Study Windows* and *Among My Books* are essays on literary subjects; *Fireside Travels* contain reminiscences. He wrote *Biglow Papers, Vision of Sir Launfal, Old English Dramatists,* and a *Life of Hawthorne.*

LUCILIUS, GAIUS (149-103 B. C.). A Roman poet; the creator of that form of poetic satire which was wielded so brilliantly by his successors, Horace,

Persius, and Juvenal. Over 800 fragments, the longest of 13 verses, remain of his 30 satires, a comedy, epodes, and hymns.

LYALL, EDNA, or ADA ELLEN BAYLY (? - 1903). An English author; wrote *Won by Waiting, Donovan, We Two, In the Golden Days, Knight Errant, The Autobiography of a Slander, Derrick Vaughn, A Hardy Norseman, To Right the Wrong, Doreen, The Autobiography of a Truth, Wayfaring Men, Hope the Hermit, In Spite of All,* and *The Hinderers.*

LYLY, JOHN (about 1554-1606). An English romancer and dramatist; born in Kent; wrote *Euphues,* which added the word "euphuism" to our language. The style is marked by excessive use of alliteration, similes from mythology, and fabulous natural history. He also wrote eight plays for presentation before the court by children.

LYTTON, EDWARD ROBERT, EARL OF, or "OWEN MEREDITH" (1831-1891). An English statesman and novelist; became viceroy of India in 1876, and subsequently ambassador at Paris. He wrote *Orval, Lucile, The Wanderer* (verse), *Fables in Song,* and *Glenaveril.*

MAARTENS, MAARTEN, or J. M. W. VAN DER POORTEN-SCHWARTZ (1858-). A Dutch-English novelist; wrote *The Sin of Joost Avelingh, An Old Maid's Love, A Question of Taste, God's Fool, The Greater Glory,* and *My Lady Nobody.* A distinct moral note pervades all of his work.

MABIE, HAMILTON WRIGHT (1846-). An American author, critic, essayist, and editor; born at Cold Spring, N. Y. He has done much toward spreading a love of good reading among Americans; wrote *Norse Stories Retold from the Eddas, Nature in New England, My Study Fire, In the Forest of Arden, Essays in Literary Interpretation, Essays on Nature and Culture, The Life of the Spirit, Parables of Life,* etc.

McCARTHY, JUSTIN (1830-). An English journalist, author, and politician; born in Cork, Ireland; spent three years in the United States (1868-1871); elected to the House of Commons (1879), and became vice-president of the Irish National League (1886). On the deposition of Parnell, McCarthy became the Parliamentary chief of the Home-Rule Party (1896); wrote *Modern Leaders, A History of Our Own Times, Epoch of Reform, History of the Four Georges, The French Revolution, A History of Our Own Times from* 1880-1896, *Modern England,* and *The Story of Gladstone's Life.*

McCARTHY, JUSTIN HUNTLY (1860-). An English novelist, historian, and dramatist; wrote *A History of England Under Gladstone,* translation of the *Rubaiyat* of Omar Khayyam, *The French Revolution,* and the plays, *The White Carnation, The Highwayman, The Wife of Socrates,* and *If I Were King.*

MACAULAY, THOMAS BABINGTON (1800-1859). An English historian; born at Rothley Temple, Leicestershire, England. He composed a compendium of universal history before he was eight years old; went to school at Shelford and entered Cambridge in 1818. In 1826 he was called to the bar, but not succeeding in law practice he soon abandoned it. In 1825 he won distinction by his *Essay on Milton.* After the failure of the firm of which his father was a member he was offered a seat in the Commons by Lord Lansdowne. In 1834 he accepted a seat on the Supreme Council of India. Here he drafted a penal code which became the basis of the criminal code of India. In 1838 he returned to England, and in 1839 became war secretary in Lord Melbourne's cabinet. In 1846 he was appointed paymaster general in Lord John Russell's cabinet, where he had time to devote himself to his *History of England,* which he had now begun. He soon retired to private life in order to prosecute this work, refusing a seat in the cabinet in 1849. In 1848 the first two volumes of the *History* appeared. No other historical work ever met with so favorable reception or circulated so rapidly. In 1857 he was raised to the peerage as Baron Macaulay of Rothley. He wrote also *Lays of Ancient Rome* and several volumes of essays.

MacDONALD, GEORGE (1824-1905). A Scotch novelist and poet. He lectured in the United States. He wrote *David Elginbrod, The Portent, Malcolm, The Seaboard Parish, Annals of a Quiet Neighborhood, Thomas Wingfold, Curate; What's Mine's Mine, Lilith, Dealings with Fairies, At the Back of the North Wind, The Princess and the Goblin, Unspoken Sermons,* and *The Miracles of Our Lord.*

MACKAY, CHARLES (1814-1889). A Scotch journalist; wrote the songs *Cheer, boys, cheer* and *There's a land, a dear land;* 14 volumes of verse, two novels, *Longbeard* and *Luck, and What Came of It,* and miscellaneous works, including *Forty Years' Recollections, Through the Long Day,* and several philological works of the Gaelic.

MACLEOD, NORMAN (1812-1872). A Scottish clergyman and author; wrote *The Earnest Student, Life of John Mackintosh, Reminiscences of a Highland Parish, Eastward, The Old Lieutenant and His Son, The Starling, Peeps at the Far East, The Gold Thread, Wee Davie, Home Education,* and *Sermons.*

McMASTER, JOHN BACH (1852-). An American historian; born in Brooklyn, N. Y. He wrote *Benjamin Franklin as a Man of Letters, History of the People of the United States, Bridge and Tunnel Centers, Daniel Webster, Origin, Meaning, and Application of the Monroe Doctrine.*

MAETERLINCK, MAURICE (1862-). A Belgian poet; born in Ghent; wrote *Serres chaudes, Douze chansons, La princesse Maleine, Les aveugles, L'intruse, Les sept princesses, Pelléas et Mélisande, Alladine et Palamides, Intérieur, Mort de Tintagiles, Aglavaine et Sélysette, Monna Vanna,* and the essays *Le trésor des humbles, La sagesse et la destinée,* and *La vie des abeilles.* His dramas were translated by Richard Hovey (1896).

MAHONY, FRANCIS SYLVESTER, or "FATHER PROUT" (1804-1866). An Irish poet and humorist; born in Cork; contributed to *Fraser's Magazine* and *Bentley's Miscellany* under the name of Father Prout; wrote *The Reliques of Father Prout,* in which *The Bells of Shandon* appears, and *The Final Reliques of Father Prout.*

MAISTRE, XAVIER DE (1763-1852). A French novelist and essayist. His *Les prisonniers du Caucase* (1825), and *Voyage autour de ma Chambre* (1794), won for him a place among the most noted of French writers.

MAJOR, CHARLES (1856-). An American author; born at Indianapolis, Ind.; wrote *When Knighthood Was in Flower, The Bears of Blue River,* and *Dorothy Vernon of Haddon Hall.*

MALLOCK, WILLIAM HURRELL (1849-). An English writer on theology and sociology. His works include *The New Republic, Belgravia, The New Paul and Virginia, Poems, A Romance of the Nineteenth Century, Social Equality, The Old Order Changes, A Human Document,* and *Tristram Lacy, the Individualist.*

MAN'ETHO (flourished 273 B. C.). The greatest classical writer on the history of Egypt; born in the Delta of Egypt; a high priest and scribe in the temples of Egypt. His chief work is *Egyptian History,* written under Ptolemy II., Philadelphus.

MANNING, HENRY EDWARD (1807-1892). An English clergyman and writer; cardinal (1875); founded the Roman Catholic University in Kensington (1874); wrote *Petri Privilegium, The True Story of the Vatican Council, The Temporal Mission of the Holy Ghost, The Internal Mission of the Holy Ghost.*

MANUEL, DON JUAN (1282-1349). A Spanish author, soldier and prince. His best known work contained in the *Biblioteca de autores* is the *Conde Lucanor.*

MANZONI, ALESSANDRO (1785-1873). An Italian poet and novelist. Produced many poems of political and religious sentiment. His *Cinque maggio* (1821), and *I promessi sposi* made him famous.

MARLOWE, CHRISTOPHER (1564-1593). An English dramatist and poet, precursor of Shakespeare; son of a shoemaker at Canterbury. Besides a love poem entitled *Hero and Leander,* he was the author of seven plays, *Tamburlaine,* in two parts; *Dr. Faustus, The Jew of Malta, Edward the Second, The Massacre at Paris,* and *Dido.* He may be called the creator of the English tragedy. [See Eng. Lit.]

MARRYAT, FLORENCE (1837-1899). An English novelist; daughter of Frederick Marryat and wife of Mr. Francis Lean; editor of *London Society* (1872); wrote many novels, among which are *Love's Conflict, Her Lord and Master, A Little Stephen, Facing the Footlights,* and *Tom Tiddler's Ground.* She has also written a *Life of Frederick Marryat.*

MARRYAT, FREDERICK (1792-1848). An English novelist; born in London; father of Florence Marryat. He entered the navy at the age of 14; won many honors and was rapidly promoted during his service, and retired in 1830; a member of various distinguished orders. His first novel was *Frank Mildmay* This was followed by *Newton Forster, Mr. Midshipman Easy, Japhet in Search of a Father, Peter Simple, Snarley-yow, The Phantom Ship, The Children of the New Forest, The Little Savage,* and many other works

of fiction. He also published *A Diary in America, with Remarks on its Institutions.*

MARSTON, PHILIP BOURKE (1850-1887). An English poet and essayist; the son of Westland Marston, dramatist and poet. He was totally blind from early childhood; published his first volume of poems, *Song-Tide* (1870), followed by *All in All* and *Wind Voices.*

MARTEL DE JANVILLE, GABRIELLE, COUNTESS DE. Known as "Gyp" (about 1850-). A French author. Her novels in dialogue include *Petit Bob* (1882), *Elles et lui* (1885), and *Eux et Elle* (1896).

MARTIAL (MARCUS VALERIUS MARTIALIS) (40-104). A Latin epigrammist; born in Bilbilis, Spain. His *Epigrams* are of great literary value, being the first examples of what we now know as epigrams.

MARTINEAU, HARRIET (1802-1876). An English reformer and author; sister of James Martineau; born in Norwich, England. She visited the United States in 1834, aiding the abolitionists. She labored under the disability of being all her life without the senses of taste and smell, and at 20 became very deaf. She produced works in almost every department of literature, notably *Society in America, Retrospect of Western Travel, The Hour and the Man, Eastern Life, Past and Present,* and *British Rule in India.*

MARTINEAU, JAMES (1805-1900). An English clergyman and author; born in Norwich; brother of Harriet Martineau. Among his works are *The Rationale of Religious Inquiry, Endeavors after the Christian Life, Studies of Christianity, Modern Materialism,* and *The Relation between Ethics and Religion.*

MATTHEWS (JAMES) BRANDER (1852-). An American author; born in New Orleans, La. In fiction he steadily gained in reputation; his short stories of New York City life in the realistic vein being among the very best of their kind. Among his works are *His Father's Son, Aspects of Fiction, Studies of the Stage,* and *Philosophy of the Short-Story.*

MAUPASSANT, GUY DE (1850-1893). A French romancer; gave himself to letters, producing novels, stories, lyrics, and plays, among them *A Life, Pierre and Jean, Yvette, Fort comme la mort, Bel-ami, Mont-Oriol, Notre coeur,* and about 200 short stories, of which he is one of the greatest of modern writers.

MENDES, CATULLE (1841-1909). A French poet and novelist. Founded the *Revue Fantaisiste* (1849). His many works include *Le capitaine Fracasse* (1870), a drama, and *La femme-enfant* (1891), a novel.

MEREDITH, GEORGE (1828-1909). An English poet and novelist; born in Hampshire, England; educated in Germany; studied law, but essayed a literary career with a volume of poems in 1851. He has written *The Ordeal of Richard Feverel, Essay on Comedy, The Egoist, Adventures of Harry Richmond,* and *Diana of the Crossways.* His life and a full bibliography are to be found in *George Meredith: Some Characteristics,* by Richard Le Gallienne. [See Eng. Lit.].

MERIMEE, PROSPER (1803-1870). A French author; studied law, but he attached himself to literature under the *nom de plume* of Joseph L'Estrange; an academician (1844); and a senator of the Empire (1853). Among his works are *Theater of Clara Gazul, Chronicles of the Reign of Charles IX., Colomba,* a popular novel; *Carmen,* and *Don Pedro of Castile.*

MICHELET (*mee-shlay'*), **JULES** (1798-1874). The greatest French historian of the Romantic School; assistant to Guizot at the Sorbonne; an academician and professor in the College de France (1838); involved in a bitter controversy with the Jesuits; refused allegiance to Napoleon in 1851 and lived thereafter in Brittany and on the Riviera; wrote *Histoire de France* down to Waterloo in 21 volumes, *Précis d'histoire moderne, Introduction à l'histoire universelle, Origines du droit français, Mémoires de Luther, Les Jésuits, Du peuple,* and many poetical romantic impressions of nature.

MICKIEWICZ (*mits-ki-a'vich*), **ADAM** (1798-1855). The greatest of Polish poets; born of a noble family; in 1834 published his great poem, *Sir Thaddeus,* and in 1840 was appointed to a professorship of Slavic literatures in Paris. He wrote also *Crimean Sonnets, Wallenrod, Ancestors or Festival in Honor of the Dead,* and edited at Paris the *Tribune des peuples,* which was suppressed by the government. [See Pol. Lit.].

MILLER, CINCINNATUS HEINE or **JOAQUIN** (1841-). An American poet; born in Wabash district, Indiana. His checkered life included the extremes of being a California gold miner, editor of an Oregon newspaper, an Oregon lawyer and judge, a social lion in London, etc.; wrote *Songs of the Sierras, Songs of the Sunland, Songs of Italy, Songs of the Mexican Seas, The Danites in the Sierras,* and *'49 or The Gold Seekers of the Sierras.*

MILTON, JOHN (1608-1674). An English poet; born in London. His father, a notary, was a man of cultivated mind, and gave him a careful education, which was continued at St. Paul's School and the University of Cambridge. He entered the latter in 1624, and quitted it in 1631 with the degree of M. A. His first polemical work was a treatise *Of Reformation.* On the establishment of the Protectorate, Milton became Latin secretary to the Council of State and held office till the abdication of Richard Cromwell (1659). In 1652 he had become totally blind, deliberately and heroically preferring, as he says, the loss of his sight to the desertion of his duty. The last short intervals of sight allotted him were devoted to the composition of the *Defense.* In 1665, being in his 57th year, he completed *Paradise Lost.* He wrote also *Hymn on the Nativity, Comus, Lycidas, L'Allegro, Il Penseroso, Samson Agonistes;* sonnets *On His Blindness, To Fairfax, To Cromwell, Areopagitica,* a plea for freedom of the press; *On Shakespeare,* and his second epic, *Paradise Regained.* [See Eng. Lit.].

MITCHELL, DONALD GRANT, or **"IK MARVEL"** (1822-1908). An American author; born in Norwich, Conn. In 1851 he published *The Reveries of a Bachelor* and his *Dream Life;* has since written many popular books, such as *My Farm at Edgewood, Dr. Johns, Seven Stories with Basement and Attic,* and *English Lands, Letters, and Kings.*

MITCHELL, (SILAS) WEIR (1829-). American physician, poet, and novelist; born in Virginia; practised in Philadelphia and became prominent as a physiologist, especially as a neurologist and toxicologist. Among his works are *Dr. North and His Friends, Hugh Wynne* (his best), *In War Time, The Adventures of François,* and *Circumstances.*

MITFORD, MARY RUSSELL (1787-1855). An English author; born at Alresford, Hampshire; lived with her father, an extravagant physician, at Lyme Regis and London. She published poems in 1810-11-12, but, forced to earn a living, took to dramatic work. *Julian, The Foscari,* and *Rienzi* were successful, if ephemeral, tragedies. Her best work was *Our Village,* sketches of homely English life, written with much care.

MITFORD, WILLIAM (1744-1827). An English historian; born in London. Under the advice of Gibbon, he wrote his celebrated *History of Greece* between 1784 and 1810. His minor works include *An Essay on the Harmony of Language* and other essays.

MOLIERE, or **JEAN BAPTISTE POQUELIN** (1622-1673). The greatest French dramatist; born in Paris. A friend of Boileau, Racine, and La Fontaine; his chief patron was Louis XIV. His more important works are *les Précieuses ridicules, Sganarelle, l' Ecole des femmes, Tartufe, le Misanthrope, George Dandin, l' Avare, le Bourgeois gentilhomme, les Fourberies de Scapin, le Médecin malgré lui, les Femmes savantes, le Malade imaginaire.* Called by Voltaire the Father of French Comedy.

MOMMSEN, THEODOR (1817-1903). A German historian. His great work is *Roman History.* He wrote besides *Roman Chronology down to Caesar* and *History of Roman Courage.* His historical work incorporates the results of vast learning in widely separate fields.

MONTAGU, LADY MARY WORTLEY (1689-1762). An English author; the eldest daughter of Evelyn, duke of Kingston; born in Thoresby, Nottinghamshire. In 1712 she married Edward Wortley Montagu, whom she accompanied in 1716 on his embassy to Constantinople, from which place she wrote *Letters* to Pope, Addison, and other eminent literati of the time, which are very interesting and contain many curious facts respecting the manners of the Turks. She first introduced the practice of inoculation into her native country. Her *Letters* certainly place her at the head of female epistolary writers in Great Britain.

MONTAIGNE, MICHEL EYQUEM DE (1533-1592). A French essayist and moralist. His fame rests on his *Essays,* in which he records his observations of mankind. Among his other works are *Apologie de Raimond Sebond,* whose *Theologia Naturalis* he translated. [See Fr. Lit.].

MONTALEMBERT (*mon-tal-aim-bair'*), **CHARLES FORBES DE TRYON, COMTE DE** (1810-1870). A French politician; born in London; son of a noble French emigrant; spent his life in advocating the cause of a free unfettered system of national education; wrote the *Monks of the West,* his chief work; *Catholic Interests in the Nineteenth Century, The Political Future of England, Pius IX. and France in* 1849 *and* 1859, and *Pius IX. and Lord Palmerston*

MONTESQUIEU, CHARLES DE SECONDAT, BARON DE LA BREDE ET DE (1689-1755). A famous French writer. His greatest work is the *Spirit of Laws*, which occupied him 20 years. It was published in 1748, and secured to him a very high place among writers on political science. [See Fr. Lit.].

MONTGOMERY, ROBERT (1807-1855). An English preacher; born at Bath; author of *The Omnipresence of Deity* and *Satan;* minister of Percy Street Chapel, London. All his many works are forgotten save the above, which live in Macaulay's famous review.

MOORE, THOMAS (1779-1852). An Irish poet; born in Dublin; author of *Lalla Rookh*. His fame now rests chiefly on *National Airs* and *Irish Melodies*. He was distinctively the poet of Ireland.

MORE, HANNAH (1745-1833). An English author; born near Bristol; wrote dramas, a novel entitled *Coelebs in Search of a Wife*, and the tracts *Village Politics* and *Cheap Repository Tracts*.

MORLEY, JOHN (1838-). An English politician and man of letters; an advanced Liberal in both capacities; besides essays and journalistic work, has written biographies, particularly on men associated with politics and social movements, such as Voltaire, Rousseau, and Diderot, as well as Burke, whose biography he contributed to "English Men of Letters Series"; *Life of Cobden, Diderot and the Encyclopaedists, Walpole, Cromwell,* and *Life of Gladstone*.

MORRIS, WILLIAM (1834-1896). An English poet, art-worker, and socialist; son and heir of a wealthy merchant; studied at Oxford, where he became the bosom friend of Burne-Jones. He devoted his working hours to decorative art, in particular designing wall papers; produced in 1858 *The Defence of Guenevere and Other Poems*, in 1867 *The Life and Death of Jason*, and from 1868 to 1870 his masterpiece, *The Earthly Paradise*. Among other works he translated the *Aeneid* and the *Odyssey*, and gave a splendid rendering of some of the Norse legends.

MORRISON, ARTHUR (1863-). An English novelist; born in London. His work is a remorselessly true picture of London life and includes *Tales of Mean Streets, Martin Hewitt, Investigator; Chronicles of Martin Hewitt, Adventures of Martin Hewitt, A Child of the Jago, The Dorrington Deed-Box, To London Town, Cunning Murrell,* and *The Hole in the Wall*.

MOTLEY, JOHN LOTHROP (1814-1877). An eminent American historian; born in Dorchester, Mass. He published, after 10 years' labor and a journey to Europe, his great *History of the Rise of the Dutch Republic*, in 1856, a work which was further developed in the *History of the United Netherlands, The Life and Death of John of Barneveldt*. He was minister from the United States to Austria and to Great Britain.

MOULTON, ELLEN LOUISE CHANDLER (1835-1908). An American poet; born in Pomfret, Conn.; married William U. Moulton, a Boston publisher; published children's stories, novels, essays, and poems. Among these are *Juno Clifford, My Third Book, Bedtime Stories, More Bedtime Stories, New Bedtime Stories, Poems, Random Rambles,* and *At the Wind's Will*.

MULLER, FRIEDRICH MAX (1823-1900). A German philologist; son of Wilhelm Müller, the German poet. He was the author of *A History of Ancient Sanskrit Literature, On the Origin and Growth of Religion as Illustrated by the Religions of India, Chips from a German Workshop, Comparative Mythology, Last Essays,* and *My Autobiography*.

MUNCHAU'SEN, BARON VON (1720-1797). A cavalry officer in the service of Hanover, famed for the extravagant stories he used to relate of his adventures and exploits, which, with exaggerations, were collected by Rudolph Erich Raspe, and published in 1785 under Münchausen's name.

MURFREE, MARY NOAILLES, or **"CHARLES EGBERT CRADDOCK"** (1850-). An American novelist; born in Murfreesboro, Tenn. Her subjects deal largely with Tennessee. She wrote *A Spectre of Power, The Mystery of Witch-Face Mountain, In the Tennessee Mountains, The Phantoms of the Foot-Bridge, The Bushwhackers,* and *The Young Mountaineers*.

MURGER (*moor-zhay'*), **HENRI** (1822-1861). French novelist and poet; born at Paris; is chiefly distinguished as the author of *Scènes de la vie de Bohême* from his own experiences.

MURRAY, DAVID CHRISTIE (1847-1907). An English novelist. Though known chiefly as a writer, he was also a landscape painter of ability. Many of his writings were done in collaboration with Henry Herman. His first work was *A Life's Atonement* in 1880. He continued to write until 1901, when *Despair's Last Journey* was published. Some of his other works were *Joseph's Coat, The Way of the World, Bit of Human Nature, A Model Father, Rainbow Gold, Cynic Fortune, First Person Singular, Mount Despair, This Little World,* and *A Rogue's Conscience*.

MURRAY, LINDLEY (1745-1826). An English grammarian; born in Lancaster County, Pa.; removed to New York, where he studied and practised law; made a fortune in trade in the Revolutionary War; wrote *Power of Religion on the Mind, Grammar of the English Language,* readers, and spelling book.

MURRAY, WILLIAM HENRY HARRISON (1840-1904). An American author; born in Guilford, Conn.; from 1869 until 1873 delivered Sunday evening talks in the Boston Music Hall, which were popular. He resigned his charge in 1874 to engage in business and to preach to independent congregations. His works include *Adventures in the Adirondacks, Adirondack Tales* (6 vols., 1877), *The Story of Mamelons, Daylight Land, How John Norton the Trapper Kept His Christmas, Mamelons and Ungava,* a legend.

MUSSET (*moo-say'*), **ALFRED DE** (1810-1857). Celebrated French poet; achieved his first signal success with the dramas *Andre del Sarto* and *The Caprices of Marianne;* in the same year began his famous *liaison* with George Sand, involving him in the ill-fated expedition to Venice, whence he returned in 1835 shattered in health and disillusioned. His writings are chiefly remarkable for the intense sincerity of feeling which animates them, and which finds its highest expression in his four great lyrical pieces, *The Nights*. Of his prose works *The Son of Titian, Mademoiselle Mimi Pinson,* and the *Confessions* are his best.

NAIRNE, LADY CAROLINA OLIPHANT (1766-1845). A Scottish poet. From her great beauty she was called in youth "The Flower of Strathearn." Regretting the coarseness of many popular songs, she undertook to furnish new words for the beautiful tunes, and attained eminent success. Her authorship was not disclosed till near her death. Among her best known songs are *Land o' the Leal, Caller Herrin', The Laird o' Cockpen,* and *The Auld House*.

NAPIER, SIR WILLIAM FRANCIS PATRICK (1785-1860). An English general and historian; brother of the conqueror of Scinde; served all through the Peninsular War, and wrote besides the *Conquest of Scinde,* the *History of the Peninsular War,* a celebrated work, written with matchless graphic power.

NICCOLINI, GIOVANNI BATTISTA (1782-1861). An Italian poet. His first tragedy, *Polissena,* was given the prize of the Della Cruscan Academy in 1810. His other dramas include *Ino e Temisto, Medea, Edipo, Matilda, Nabucco, Antonio Foscarini, Ludovico Sforza, Rosmunda,* and *Filippo Strozzi*.

NICOLAY, JOHN GEORGE (1832-1901). An American author; born in Bavaria; brought to America (1838); wrote *The Outbreak of the Rebellion,* and, with John Hay, *Abraham Lincoln: A History,* which appeared serially in the *Century Magazine* (1886-1890).

NIETZSCHE, FRIEDRICH WILHELM (1844-1900). An important German writer. His theories are fully set forth in his philosophical works. He was also popular as a poet, producing *Gedichte und Sprüche* and *Also sprach Zarathustra*. [See Ger. Lit.].

NOLDEKE, THEODOR (1836-). An eminent German orientalist; born at Hamburg; professor at Kiel (1868); of Semitic philology at Strassburg (1872). He is the leading authority on Semitic philology.

NORDAU, MAX SIMON (1849-). A German author; born in Budapest, Hungary. He wrote a number of books, of which the best known, perhaps, in the United States is *Degeneration*.

NORRIS, FRANK (1870-1902). An American novelist; born in Chicago, Ill.; wrote *Yberville, McTeague, Moran of the Lady Letty, The Octopus, The Pit,* and *The Wolf*.

NORRIS, WILLIAM EDWARD (1847-). An English novelist; born in London. His first book, *Heaps of Money,* appeared in 1876. It has been followed by *Mademoiselle de Mersac, Thirlby Hall, Matrimony, A Man of His Word, That Terrible Man, Chris, Major or Minor, Miss Shafto, The Rogue, My Friend Jim, Misadventure, The Countess Radna, Billy Bellew, The Dancer in Yellow, Clarissa Furiosa, The Widower, An Octave,* and *Lord Leonard the Luckless*.

NORTON, CHARLES ELIOT (1827-1908). An American scholar; son of Andrews Norton; born at Boston. In 1867 he published a translation of the *Vita*

Nuova of Dante, accompanied with *Essays and Notes*, a part of which had already appeared in the *Atlantic Monthly*. Other works are *Memoir of Arthur Hugh Clough*, prefixed to an edition of his *Poems; Sketch of the Life and Works of William Blake*, accompanying his *Illustrations of the Book of Job; List of the Principal Works Relating to Michael Angelo, Historical Studies of Church Building in the Middle Ages*. He edited *James Russell Lowell's Letters*. He was literary executor and editor for such personal friends as Lowell, Carlyle, Emerson, G. W. Curtis, Ruskin, and Clough.

"NOVALIS," the pseudonym of **FRIEDRICH VON HARDENBERG** (1772-1801). A German author. His writings, with the exception of a few short pieces, notably, *Hymns to the Night*, were written in a kind of rhythmical prose, and are altogether fragmentary. They were published, edited by his friends Tieck and Friedrich von Schlegel, in 1802.

NYE, EDGAR WILSON, or **"BILL NYE"** (1850-1896). An American humorist; born at Shirley, Me; regularly contributed humorous letters to various American journals; gave lectures throughout the country and published *Bill Nye and the Boomerang, The Forty Liars, Baled Hay, Bill Nye's Blossom Rock, Remarks,* and *Bill Nye's History of the United States*.

OAKES, URIAN (about 1631-1681). An American clergyman, president of Harvard. In his *Elegie upon the Death of the Reverend Mr. Thomas Shepard*, lies his claim to fame.

OEHLENSCHLAEGER (*ö'len-shlay-ger*), **ADAM GOTTLOB** (1779-1850). One of the greatest dramatic poets of the Scandinavian North; born in Vesterbro, near Copenhagen, Denmark. He commenced his career on the stage, but abandoned the profession for literature, and finally became professor of aesthetics in his native city. Among his greatest works are *The Death of Balder, Haakon Jarl, Palnatoke,* and *Aladdin*.

OL'IPHANT, LAURENCE (1829-1888). An English author and traveler; born at Cape Town; spent his boyhood in Ceylon; married Alice l'Estrange. With her he went to Palestine, and wrote two mystical books under her inspiration. Oliphant was special correspondent for the *Times* and was a brilliant journalist. He wrote *A Journey to Khatmandu, The Russian Shores of the Black Sea, Episodes in a Life of Adventure, Sympneumata, Scientific Religion, Massollam,* and *Piccadilly*.

OLIPHANT, MRS. MARGARET (*née* **WILSON**) (1828-1897). An English author; began her literary career as a novelist. Her reputation as such was assured by *Chronicles of Carlingford*. She wrote on history, biography, and criticism; the *Makers of Florence, Makers of Venice, Makers of Modern Rome*, lives of *Dante, Cervantes,* and *Edward Irving*.

OMAR KHAYYAM (*o'mar khi-yahm'*) (? -1123). A Persian poet, astronomer and mathematician; born in Nishapur, in Khorassan. His scientific works, which were of high value in their day, have been eclipsed by his *Rubaiyat*, or quatrains, a collection of about 500 epigrams in praise of wine, love, and pleasure, translated by Fitzgerald.

OLMEDO, JOSE JOAQUIN (1782-1847). A Spanish-American poet, popular in his own country. His ode addressed to General Bolivar as the deliverer of Peru, brought him into public notice.

OPITZ, MARTIN (1597-1639). German poet. Produced the critical *Aristarchus seu de Contemptu Linguae Teutonicae* and in 1627 wrote the libretto for the oldest German opera, *Dafne*.

OTFRIED (about 800-about 870). An Alsatian poet and theologian. Wrote *Liber Evangeliorum*, in which rhyme instead of alliteration is used. Fragments only of his other works are extant.

OTWAY, THOMAS (1652-1685). An English dramatist; born in Sussex; left Oxford without a degree and went to London (1671); made a failure as an actor and devoted himself to play writing; wrote *Alcibiades, Don Carlos, Friendship in Fashion, Caius Marius, The Orphan, The Soldier of Fortune*, and the finest of all of his plays, *Venice Preserved*.

OUIDA. See RAMEE, LOUISE DE LA.

OVID (PUBLIUS OVIDIUS NASO) (43 B. C.-18 A. D.). A Roman poet of the Augustan age; born at Sulmo; was the author, among other works, of the *Amores, Fasti,* and the *Metamorphoses;* the friend of Horace and Vergil, and the favorite of Augustus.

OXENFORD, JOHN (1812-1877). An English author. He translated poems and wrote songs, which have been set to music. Among his works for the stage are *My Fellow Clerk, A Day Well Spent, Porter's Knot,* and £456, 11*s*. 3*d*. He published translations of the *Autobiography of Goethe*, the *Conversations of Eckermann with Goethe*, the *Hellas* of Jacob, and a collection of songs from the French entitled *The Illustrated Book of French Songs*.

PAGE, THOMAS NELSON (1853-). An American novelist; born in Oakland, Va. His books are widely read and include *In Ole Virginia, Red Rock, Gordon Keith, The Old South,* and *Pastime Stories*.

PAGET, VIOLET, or **"VERNON LEE"** (1856-). An English author. Since 1871 she has lived in Italy, where she has studied art and literature. Her *Studies of the Eighteenth Century in Italy* was well received. Her other books are *Belcaro, Essays on Aesthetical Questions, The Prince of a Hundred Soups, Ottilie: an Eighteenth Century Idyl; Euphorion,* essays; *The Countess of Albany, Miss Brown, Baldwin, Juvenilia, Hauntings, Limbo,* and *Genius Loci*.

PAINE, ROBERT TREAT, JR. (1773-1811). An American poet; born in Taunton, Mass. He is best remembered as the author of two songs, *Rise, Columbia,* and *Adams and Liberty*.

PAINE, THOMAS (1737-1809). An American political and philosophical writer; born in England. At the outbreak of the Revolutionary War (1774) he emigrated to the United States; gave an impulse to the Revolution by his famous pamphlet called *Common Sense* and *The Crisis*, in which he advocated the policy of separation and independence. He went to Paris in 1787. In September, 1792, he was elected a member of the French National Convention, acted with the Girondists, narrowly escaped death in the Reign of Terror, and brought out in 1795 his celebrated work entitled *The Age of Reason*. He returned to the United States in 1802.

PALFREY, JOHN GORHAM (1796-1881). An American publicist and historian; born at Boston. Besides sermons, magazine and newspaper essays, he published *Evidences of Christianity*, originally delivered as a course of Lowell lectures; *Lectures on the Jewish Scriptures and Antiquities, The Relation between Judaism and Christianity*, and a *History of New England*. It brings the history down to the appointment of Washington as commander in chief of the Colonial army in 1775.

PALGRAVE, SIR FRANCIS (1788-1861). An English author. His family name was Cohen, which at his marriage he exchanged for that of his wife's mother. He published a *History of England, The Rise and Progress of the English Commonwealth*, and *Observations on Principles of New Municipal Corporations*. In 1832 he was knighted. In 1837 he published *Merchant and Friar*. During the last 23 years of his life he held the office of deputy keeper of her Majesty's records. His greatest work is a *History of Normandy and of England*.

PALGRAVE, FRANCIS TURNER (1824-1897). An English poet; the eldest son of Sir Francis Palgrave; born at London. He was educated at Balliol College, Oxford; professor of poetry at Oxford (1886). His principal poetical works are *Idylls and Songs, Hymns,* and *Lyrical Poems*. He also compiled *The Golden Treasury of English Songs* and wrote *Essays on Art, Life of Sir Walter Scott, The Visions of England,* and *The Treasury of Sacred Songs*.

PANINI (fourth century B. C.). The greatest grammarian of India; born in the north of the Punjab. His work is the oldest Sanskrit grammar in existence. The effect of his work was to permanently fix the literary form of the Sanskrit language.

PAPINIAN (about 150-212 A. D.). The greatest of Roman jurists; his productions include, mostly, digests of decisions, and his writings were so valuable that they formed a part of the course of law study and were employed in settling disputed questions.

PARINI, GUISEPPE (1729-1799). Italian poet; introduced depth and morality into Italian poetry. His best productions are the *Odi* and the *Giorns*, the latter being one of the finest works of the eighteenth century. [See It. Lit.].

PARKER, SIR (HORATIO) GILBERT (1862-). A Canadian novelist; born in Camden East, Ontario; studied pedagogy and taught in Frankford and Seaforth; studied for the ministry; taught in the Belleville Deaf and Dumb Institute; wrote *Pierre and His People, Mrs. Falchion, The Translation of a Savage, When Valmond Came to Pontiac, The Seats of the Mighty, The Battle of the Strong, The Lane that Had No Turning, The Right of Way, Donovan Pasha,* and *The Weavers;* lives in England.

PARKMAN, FRANCIS (1823-1893). An American historian; born in Boston, Mass; worked his way to

recognition as a historical writer on the period of rise and fall of the French dominion in America. He wrote *Conspiracy of Pontiac, Montcalm and Wolfe, A Half Century of Conflict, La Salle, The Jesuits in North America,* and *The Old Régime in Canada.*

PARTON, JAMES (1822-1891). An American author; born in England. Up to 1875 he resided at New York, and subsequently at Newburyport, Mass. His principal works are *Life of Horace Greeley, Life and Times of Aaron Burr, Life of Andrew Jackson, General Butler at New Orleans, Life and Times of Benjamin Franklin, Famous Americans of Recent Times, Life of Thomas Jefferson,* and *Captains of Industry.*

PATER, WALTER HORATIO (1839-1894). An English author. He was educated at Oxford, and in 1864 was made a fellow of Brasenose College in that university. His books include *The Renaissance, Marius, the Epicurean,* a story of ancient Rome; *Imaginary Portraits,* a later edition of *The Renaissance, Appreciations, Plato and Platonism, The Child in the House, Greek Studies,* and a volume of *Essays.* His work is the interpretation of the spirit of the Renaissance in literature and art.

PATMORE, COVENTRY KEARSEY DIGHTON (1823-1896). An English poet; born at Woodford, Essex. From 1846 to 1868 he was an assistant librarian in the British Museum. In 1844 he published a small volume of poems, under the title of *Tamerton Church Tower, and Other Poems.* His principal work, *The Angel in the House,* appeared in four parts: *The Betrothal, The Espousal, Faithful Forever,* and *The Victories of Love.* He wrote *The Unknown Eros, Amelia,* and a memoir of "Barry Cornwall."

PAYN, JAMES (1830-1898). An English author; born in Cheltenham; was educated at Eton, Woolwich, and Trinity College, Cambridge; succeeded Leslie Stephen as editor of the *Cornhill Magazine* (1882). Among his works are *Stories from Boccaccio,* poems; *The Foster Brothers, Halves, Carlyon's Year, One of the Family, What He Cost Her, Mirk Abbey, Murphy's Master, Under One Roof, The Luck of the Darrells, Some Literary Recollections, Thicker than Water, Glowworm Tales, The Burnt Million, The Word and the Will, Not Wooed but Won, Gleams of Memory, autobiographical; In Market Overt, Another Burden,* and *The Backwater of Life.*

PAYNE, JOHN HOWARD (1791-1852). American dramatist; author of *Brutus, or the Fall of Tarquin; Therese, Virginia, Charles II., Clari, or the Maid of Milan.* His fame rests principally upon *Home, Sweet Home,* which he wrote for his opera *Clari.*

PAYNE, WILLIAM MORTON (1858-). An American critic and educator; born in Newburyport, Mass. He is a strong critic of modern literature of Europe and America; wrote *Our New Education, Little Leaders,* and *Various Views.*

PEABODY, ANDREW PRESTON (1811-1893). An American preacher, professor, and author; born in Beverly, Mass. From 1852, for 11 years he edited the *North American Review.* Among the books written by him are *Reminiscences of European Travel, Manual of Moral Philosophy, Christianity and Science, Harvard Reminiscences, Harvard Graduates Whom I Have Known,* and *King's Chapel Sermons.*

PECK, GEORGE WASHINGTON (1840-). An American humorist; born at Henderson, N. Y. For several years he was proprietor of *Peck's Sun,* Milwaukee. His books are *Peck's Compendium of Fun, Peck's Sunshine, Peck's Bad Boy, How George W. Peck Put Down the Rebellion,* and *Peck's Boss Book.*

PECK, HARRY THURSTON (1856-). An American editor and critic; born in Stamford, Conn.; editor of the *Bookman* (1895); wrote *The Personal Equation, The Adventures of Mabel, Graytone and Porphyry,* and *What Is Good English?*

PECK, SAMUEL MINTURN (1854-). An American poet; born in Tuscaloosa, Ala.; wrote *Cap and Bells, Rings and Love-Knots, Rhymes and Roses,* and *Fair Women of To-day.*

PEELE, GEORGE (about 1558-about 1597). English dramatist; author of *Arraignment of Paris, Edward I., The Battle of Alcazar, The Old Wives' Tale, David and Bethsabe,* and a few miscellaneous pieces which include "An Eclogue Gratulatory," and "The Beginnings, Accidents, and End of the Fall of Troy."

PELLICO, SILVIO (1789-1854). An Italian poet; born at Saluzzo. While quite young he achieved a high reputation, especially by his dramatic poems, *Laodamia* and *Francesca da Rimini.* In 1831 he put forth *My Prisons,* containing an account of his 10 years' incarceration. Pellico subsequently published several works in verse and prose, one of the latest being a treatise on *The Duties of Man.*

PEMBERTON, MAX (1863-). An English novelist; born in Birmingham, England. He has published a number of stories of adventures, including *The Iron Pirate, The Sea Wolves, The Impregnable City, A Gentleman's Gentleman, Queen of the Jesters, The Garden of Swords, Féo,* and *The House Under the Sea.*

PERRY, BLISS (1860-). An American editor and author; born at Williamstown, Mass.; wrote *The Broughton House, Salem Kittredge, The Plated City, The Powers at Play,* and *A Study of Prose Fiction.*

PERSIUS (AULUS PERSIUS FLACCUS) (34-62). A Roman satirist; born in Etruria; wrote six short satires of much native vigor, though not equal to those of Horace and Juvenal.

PETRARCH, FRANCESCO (1304-1374). A famous Italian lyric poet; born at Arezzo, in Tuscany; spent his youth in Avignon; intended for the profession of law, devoted his time to the study of Cicero and Vergil; met Laura, a lady of surpassing beauty, in the church of St. Clare there in 1327, conceived a passion for her which she could not return, and wrote sonnets in praise of her which have immortalized him. The historic reality of Laura has been doubted. Petrarch wrote more in Latin than in Italian, but his fame rests upon the *Canzoniere,* comprising sonnets and madrigals, and mainly love poetry. [See Ital. Lit.].

PHAEDRUS. A Latin fabulist of the age of Augustus; originally a slave; was manumitted by Augustus. His fables, 100 in number, were written in verse and are mostly versifications from Aesop.

PHELPS, ELIZABETH STUART (Mrs. Ward) (1844-). American writer; her books include *The Gates Ajar, The Story of Avis, Beyond the Gates, A Singular Life,* and *Within the Gates.*

PHILEMON (about 361-263 B. C.). A Greek poet, and one of the founders of Attic new comedy. He produced nearly 100 comedies, of which about 57 have been preserved to us in fragments in other works.

PIERPONT, JOHN (1785-1866). American poet; a volume of his works was published in 1840 as *Airs of Palestine, and Other Poems;* his *Anti-Slavery Poems* appeared in 1843.

PIKE, ALBERT (1809-1891). An American journalist, lawyer, and poet; born in Boston. He rose to a high grade in the order of Freemasons. Besides several Masonic works he has published *Hymns to the Gods,* reprinted in *Blackwood's Magazine* in 1839; *Prose Sketches* and *Poems; Nugae,* a collection of poems, and two similar collections.

PINKNEY, EDWARD COATE (1802-1828). American poet; known principally for a small volume of *Poems.*

PISAN, CHRISTINE DE (1363-1431). French author; her *Le chemin de longue estude* and *Poème de la pucelle* give accurate ideas of the society of her time.

PLATEN, AUGUST (1796-1835). German poet; author of *Ghaselen, Sonette aus Venedig, Die Verhängnisvolle Gabel, The Abbassiden, Polenlieder,* and *Gedichte.*

PLAUTUS, TITUS MACCIUS (254-184 B. C.). A Latin comic poet; born in Umbria. He wrote about 130 comedies, but only 20 have survived, the plots mostly borrowed from Greek models.

POE, EDGAR ALLAN (1809-1849). An American poet and story writer; born in Boston. Left an orphan early, he was adopted by John Allan of Richmond, Va. At the age of 18 he left this home and published his first volume of verse at Boston. He was a cadet at the United States Military Academy (1830-1831), and subsequently embarked on a literary career. He is one of the most remarkable characters in literature, gifted with great power of invention, vividness of imagination, and artistic skill. His work consists of criticism, prose tales, and poetry. His tales are remarkable for their imaginative vigor and finished art, notably *Ligeia, The Fall of the House of Usher, Eleonora, The Mask of the Red Death,* and *The Murders of the Rue Morgue.* His best poems are *Valley of Unrest, Lenore, Helen, City in the Sea, Israfel, The Raven,* and *The Bells.*

POLYBIUS (205-120 B. C.). A Greek historian. His great work is a general history of the extension of Rome from 220 to 146 B. C. Five only of its 40 books are now extant, with some fragments of the rest.

PONCE DE LEON, LUIS (1529-1591). Spanish poet. While in prison he produced *Los Nombres de Cristo*, a famous mystic prose work. Some of his best known odes are *La Profecia del Tajo, La Noche Serena,* and *La Vida Retirada.* [See Sp. Lit.].

POOLE, WILLIAM FREDERICK (1821-1894). An American bibliographer; born at Salem, Mass. While at Yale he prepared and published his *Index to Subjects in Reviews and Periodicals,* which afterward became the larger work, *Index to Periodical Literature.* He was the author of *Cotton Mather and Salem Witchcraft, The Popham Colony, The Ordinance of* 1787, *Anti-Slavery Opinions Before* 1800, *The Battle of the Dictionaries,* and *Websterian Orthography.*

POPE, ALEXANDER (1688-1744). An English poet; born in London. In 1711 he published his poem the *Essay on Criticism,* which was followed by *The Rape of the Lock,* a polished and witty narrative poem, founded on an incident of fashionable life. From 1715 to 1726 he was engaged on a poetical translation of Homer's works, the *Iliad* being wholly from his pen, the *Odyssey* less than half. He wrote *Imitations of Horace* and *The Dunciad.* [See Eng. Lit.].

PORTER, JANE (1776-1850). A British novelist; born in Durham. Her father, an officer in the army, died when his children were all young. Jane, the eldest child, wrote several novels, two of which, *Thaddeus of Warsaw* and the *Scottish Chiefs,* had a high reputation in their day, and are still read.

PORTER, NOAH (1811-1892). An American scholar; born in Farmington, Conn. In 1871 he succeeded Theodore D. Woolsey as president of Yale College. His principal works are *The Educational Systems of the Puritans and the Jesuits, The Human Intellect, Books and Reading, American Colleges and the American Public, Science and Sentiment, Elements of the Moral Sciences, Kant's Ethics,* and *Fifteen Years in the Chapel of Yale College;* editor in chief of *Webster's Dictionary* and *International Dictionary.*

POUCHKINE, ALEXANDER SERGEYEVITCH (1799-1837). The greatest poet of Russia; born at Moscow; wrote *Recollections of Tsarskoye Selo,* where he was educated; *Ruslan and Lyudmila, The Prisoner of the Caucasus, The Gypsies, The Brother Murderers, Poltava, History of the Pugatcheff Insurrection, The Captain's Daughter,* and *Dubrovski.* [See Rus. Lit.].

PRAED, WINTHROP MACKWORTH (1802-1839). An English poet; born at London. A complete edition of his works was issued in 1864, edited by his sister, Lady Young, with a memoir by Derwent Coleridge. Praed wrote many charades, which are among the cleverest in our language.

PRATI, GIOVANNI (1815-1884). Italian poet; author of *Edmenegarda,* and the *Psiche* and the *Iside,* containing his best lyrics. [See It. Lit.]

PRESCOTT, WILLIAM HICKLING (1796-1859). An eminent American historian; born at Boston, Mass. Growing blind, the result of an accident at college, he fortunately inherited means, employed assistants, and with great courage in 1826 began to study Spanish history. *Ferdinand and Isabella* (1838) established his reputation in both worlds. *The Conquest of Mexico,* his best work, was published in 1843, and *The Conquest of Peru* in 1847. He died of apoplexy at Boston before completing the *History of Philip II.*

PRIME, WILLIAM COWPER (1825-1905). An American lawyer and author; brother of Samuel I. Prime; born at Cambridge, N. Y. In 1857 he published *Boat Life in Egypt and Nubia* and *Tent Life in the Holy Land.* He devoted much attention to archaeology, numismatics, and ceramics, and published *Coins, Medals, and Seals; Pottery and Porcelain of All Times and Nations,* and an annotated edition of the hymn, *O Mother, Dear Jerusalem.*

PRINCE, THOMAS (1687-1758). American historian; author of *The Chronological History of New England* to 1633, valuable on account of its accuracy; *Account of the English Ministers at Martha's Vineyard,* and *Earthquakes of New England.*

PRIOR, MATTHEW (1664-1721). An English politician and poet; born in Dorsetshire. In 1686 he was graduated at Cambridge, where he formed an intimacy with Charles Montague, afterwards earl of Halifax. He held various civil and diplomatic positions; was returned to Parliament in 1701. In 1713 he was made ambassador at Paris; but when the Whigs came into power, in 1714, he was recalled, and imprisoned on a charge of treason. After his release he published by subscription a folio volume of his *Poems,* from which he realized 4,000 guineas. Lord Harley added an equal sum for the purchase of an estate. He was buried in Westminster Abbey, where a monument was erected to his memory, for which he left £500 in his will.

PROCTER, ADELAIDE ANNE (1825-1864). An English poet; daughter of "Barry Cornwall." Early in 1853 *Household Words* received a poem bearing the signature "Mary Berwick" which Charles Dickens, the editor, thought "very different from the shoal of verses perpetually setting through the office of such a periodical, and possessing much more merit." It was not until nearly two years after that Dickens learned that "Mary Berwick" was Adelaide Procter, whom he had known from childhood, and who was the daughter of one of his oldest literary friends. With the exception of a little volume entitled *A Chapter of Verses,* published in 1862, all of her poems originally appeared in periodicals edited by Dickens, who prefixed a biographical introduction to a complete edition issued shortly after her death.

PROCTER, BRYAN WALLER, or **"BARRY CORNWALL"** (1787-1874). An English lyrist; born in London; is chiefly memorable as a friend of all the eminent literary men of two generations, such as Wordsworth, Lamb, and Scott on the one hand, and Carlyle, Thackeray, and Tennyson on the other. His *Charles Lamb* is a delightful memoir. He wrote nearly 300 songs, among which are *The Sea, A Petition to Time, Life,* and *Song to His Wife.*

PULCI, LUIGI (1432-1484). Italian poet; wrote *Il Morgante Maggiore, Confessions, Beca di Dicomano.*

QUARLES, FRANCIS (1592-1644). English religious poet and author of royalist pamphlets. His *Emblems* have frequently been reprinted.

QUENTAL, ANTHERO DE (1842-1891). Portuguese poet and essayist; author of *Primaveras romanticas, Os sonetos completos, Bomsensoe e bomgosto.*

QUEVEDO Y VILLEGAS, FRANCISCO DE (1580-1645). Spanish author. His most important works are *El Buscón* (*El gran Tacaño*), and *Las Visiones* (*Sueños*).

QUILLER-COUCH (*kootch*), **ARTHUR THOMAS** (1863-). An English author; born at Cornwall; wrote *Dead Man's Rock, Troy Town, The Splendid Spur, The Delectable Duchy, Wandering Heath, Ia, The Ship of Stars, Old Fires and Profitable Ghosts, Adventures of Harry Revel,* and *Adventures in Criticism.* He was selected to finish Stevenson's unfinished novel, *St. Ives;* wrote much under the pseudonym of "Q."

QUINAULT, PHILIPPE (1635-1688). A French librettist and dramatist; *Les rivales* and *L'amant indiscret,* his first comedies, are among his best. *Psyché,* his first lyric drama, was followed by librettos almost entirely, of which his masterpieces are *Amadis, Roland,* and *Armide.*

QUINET, EDGAR (1803-1875). French man of letters; attracted by his early translations, the French Institute sent him to Greece, where he wrote *La Grèce moderne;* the poems *Ahasvérus, Napoleon,* and *La genie des religions* gained a lectureship at Lyons and later at the College de France, from which he was dismissed for his attacks on the Jesuits; later famous works are *La création, La révolution,* and *La république,* all relating to the conditions in France.

QUINTANA, MANUEL JOSE. Spanish statesman and writer; author of patriotic *Odes* and *Vidas de Españoles célebres.*

RABELAIS (*rah-be-lay'*), **FRANCOIS** (1490-1553). A great French humorist; born at Chinon; studied medicine and for a time practised it, particularly at Lyons. Here he commenced the series of writings that have immortalized his name, his *Gargantua* and *Pantagruel* forming a succession of satires in a vein of riotous mirth mingled with keen political insight and pedantic wisdom.

RACINE, JEAN (1639-1699). A French poet and dramatist; born at La Ferte-Milon; educated at Beauvais and Port Royal. While at Paris he was associated with La Fontaine, Moliere, and Boileau. In 1664 he was granted a pension from the Court for his *Odes* to the king. He wrote only one comedy, *Les Plaideurs* (1668), which did not prove a success. His other productions include *La Thebaide* (1664), his earliest play, *Alexander the Great* (1665), *Mithridate* (1673), *Britannicus* (1669), *Berenice* (1670), *Bajazet* (1672), *L' Andromaque* (1667), *Iphigenie* (1675), *Phèdre* (1677), the last three being most popular. In 1689 he wrote *Esther* for the girls at St. Cyr Col-

lege, and in 1681 *Athalie* appeared. For many years he was royal historiographer, holding the office jointly with Boileau. In his later years he produced four *Cantiques spirituels* and an *Histoire abregée de Port Royal.* [See Fr. Lit.].

RADCLIFFE, ANNE (1764-1823). English novelist; author of *A Sicilian Romance, The Italian, Mysteries of Udolpho, Journey through Holland and Germany.*

RALEIGH, SIR WALTER (about 1605-1666). [See under Government, also Eng. Lit.].

RALPH, JULIAN (1853-1903). An American author and journalist; South African correspondent for the London *Daily Mail* (1899); wrote *Dutchman or German, On Canada's Frontier, Chicago and the World's Fair, Our Great West, People We Pass, Dixie, Alone in China, A Prince in Georgia, Toward Pretoria, An American with Lord Roberts, War's Brighter Side,* and *The Millionairess.*

RAMEE, LOUISE DE LA, or **"OUIDA"** (1840-1908). An English novelist; born at Bury St. Edmunds. Her pseudonym is her own childish attempt to pronounce her name—Louisa; wrote *Held in Bondage, Strathmore, Chandos, Idalia, Under Two Flags, Tricotrin, Puck, A Dog of Flanders, Pascarel, Two Little Wooden Shoes, Ariadne, Friendship, Moths, The Village Commune, In Maremma, Bimbi, Wanda, Othmar, Guilderoy, Syrlin, Ruffino, The Silver Christ, Two Offenders, Le Selve, Two Massarenes, Toxin, La Strega, Street Dust, Views and Opinions,* and *Critical Studies.* Recently she made her home in Florence, where, through her prodigal extravagance, she suffered from poverty; granted a pension by the British government (1907).

RAMSAY, ALLAN (1686-1758). A Scotch poet; born at Leadhills, Lanarkshire. A collection of his poems appeared in 1721; *Fables and Tales* (1722), *The Tea-table Miscellany* (1724), *The Evergreen* (1724), and *The Gentle Shepherd* (1725), which established his fame. He also wrote many songs, *The Yellow-hair'd Laddie* being most popular. A complete edition of his works appeared in 1731.

RANDALL, JAMES RYDER (1839-1908). An American song writer and journalist; born at Baltimore, Maryland. He is the author of a number of songs in behalf of the Confederate cause, including *Maryland, My Maryland* (his most popular work); *The Sole Sentry, There's Life in the Old Land Yet,* and *The Battle Cry of the South.*

RANKE, FRANZ LEOPOLD VON (1795-1886). A German historian; born at Wiehe, near Nuremberg; from 1825, professor of history at Berlin. He was sent by the government to examine the archives at Vienna, Rome, Venice, and Florence. His thorough researches made him the father of a school of historiography. *A History of the Roman and Teutonic Nations* was his first work, covering the period 1494-1535. This was followed by a *History of Southern Europe in the Sixteenth and Seventeenth Centuries, The Servian Revolution,* and the *Conspiracy Against Venice in* 1688. Then came his best known work, the *History of the Popes.*

RAWLINSON, GEORGE (1812-1902). An English orientalist and historian; brother of Sir Henry Rawlinson. His principal works are *Historic Evidences for the Truth of Christian Records, The Contrasts of Christianity with Heathenism and Judaism,* and *Manual of Ancient History.* His great work is *Seven Great Monarchies of the Eastern World.* These are: I. Chaldaea; II. Assyria; III. Media; IV. Babylonia; V. Persia; VI. Parthia; VII. The Sassanian or New Persian Empire. His *History of Phoenicia* appeared in 1890.

RAYMOND, HENRY JARVIS (1820-1869). An American journalist; born in Lima, N. Y.; founded the New York *Times* (September 18, 1851); lieutenant governor of New York (1854); drafted the famous *Address to the People* (1856); in 1864 was chosen as representative from New York to the thirty-ninth Congress; wrote *A Life of Daniel Webster, Political Lessons of the Revolution,* and *The Life and Public Services of Abraham Lincoln.*

READ, OPIE PERCIVAL (1852-). An American journalist; born in Nashville, Tenn. His studies of Arkansas life have been widely read; wrote *A Kentucky Colonel, Emmett Bonlore, A Tennessee Judge, My Young Master, Bolanyo, The Wives of the Prophet,* and *In the Alamo.*

READ, THOMAS BUCHANAN (1822-1872). An American poet and artist; born in Chester county, Pa. His *Poems* appeared in 1847, *Lays and Ballads* (1848), *The New Pastoral* (1854), *The House by the Sea* (1856), *Female Poets of America* (1848). The most popular of his productions are *Sheridan's Ride* and *Drifting.*

READE, CHARLES (1814-1884). An English novelist. The books by which he first became known were his *Peg Woffington* and *Christie Johnstone. The Cloister and the Hearth* is his masterpiece. Among his others are *Hard Cash, It Is Never Too Late to Mend, Griffith Gaunt, Put Yourself in His Place, A Terrible Temptation, A Woman Hater,* and *Good Stories of Man and Other Animals.*

READE, JOHN (1837-). Canadian writer; born in Ireland. Author of *Aboriginal American Poetry, The Prophecy and Other Poems, Making of Canada.*

REGNIER, MATHURIN (1573-1613). French satirical poet. One of the best editions is by Viollet-le-Duc.

RENAN (*reh-non'*), **JOSEPH ERNEST** (1823-1892). A French writer; born in Tréguier. In 1862 he was appointed professor of Hebrew, Chaldee, and Syriac in the Collège de France, but the skeptical views manifested in his *Life of Jesus* raised an outcry against him, and he was removed from his chair, to be restored again, however, in 1871. This work was the first part of a comprehensive *History of the Origins of Christianity,* written from the standpoint of one who disbelieves in the supernatural claims of Christianity. Renan's latest important work was the *History of the People of Israel Till the Time of King David;* became a member of the French Academy (1878).

REPPLIER, AGNES (1858-). An American essayist; born in Philadelphia; published *Books and Men, Points of View, Essays in Miniature, Book of Famous Verse, Essays in Idleness, In the Dozy Hours, Varia, Philadelphia,* and *The Fireside Sphinx.*

REUTER, FRITZ (1810-1874). One of the most realistic of German writers. His best known productions, *Ut mine Festungstid, Ut mine Stromtid,* and *Ut de Franzosentid* are included in *Olle Kamellen.*

RHODES, JAMES FORD (1848-). American historian, whose *History of the United States from the Compromise of* 1850 is considered the best work on the period covered.

RHYS, ERNEST (1859-). English author, editor of the Camelot series, Dekker's *Plays;* author of *The Great Cockney Tragedy, A London Rose and Other Rhymes.* **JOHN RHYS** (1840-) is a profound Celtic scholar and author. *Celtic Britain, Celtic Folklore,* and *The Welsh People* are among his writings.

RICE, JAMES (1843-1882). An English novelist; born at Northampton; collaborated with Walter Besant on *Ready-Money Mortiboy, The Golden Butterfly, The Monks of Thelema,* and *The Seamy Side.* Rice wrote *History of the British Turf.*

RICHARDSON, SAMUEL (1689-1761). An English novelist; born in Derbyshire; the son of a joiner; was apprenticed to a printer in London; set up in the business for himself, and from his success in it became master of the Stationers' Company in 1754 and king's printer in 1760; was 50 before he came out as a novelist; published his *Pamela* in 1740, his masterpiece; *Clarissa Harlowe,* written in the form of letters, in 1748, and *Sir Charles Grandison* in 1753.

RICHTER, JEAN PAUL FRIEDRICH (1763-1825). Usually called Jean Paul simply; the best known of German humorists; born at Wunsiedel, in Upper Franconia; the son of a poor German pastor; had a scanty education, but his fine faculties and unwearied diligence supplied every defect. His works are numerous, and the chief are the novels *Hesperus, Quintus Fixlein,* and *Schoolmaster Wuz;* idyls, and *Levana,* a work on pedagogy. His works are published in 34 volumes.

RIDPATH, JOHN CLARK (1840-1900). An American educator and historian; born in Putnam County, Ind. In 1874-1875 he published a *History of the United States,* which he supplemented with another in 1877. In 1876 he issued a *School History.* His *History of the United States* in eight volumes was completed shortly before his death.

RILEY, JAMES WHITCOMB (1853-). An American poet; born in Greenfield, Ind. His poems are characterized by both humor and pathos and by their sympathy with the simplest phases of life. Those of the Hoosier type are especially popular. Among his works are *The Boss Girl and Other Sketches, Green Fields and Running Brooks, The Rubaiyat of Doc. Lifers, Home Folks, Afterwhiles, Old-Fashioned Roses,*

Pipes o' Pan, Rhymes of Childhood, The Flying Islands of the Night, Neighborly Poems, Here at Home, Armazindy, and *A Child World.*

RIPLEY, GEORGE (1802-1880). An American scholar; born at Greenfield, Mass.; published *Discourses on the Philosophy of Religion* (1839), and *Letters on the Latest Forms of Infidelity.* In 1849 he became literary editor of the New York *Tribune* and literary adviser for the publishing house of Harper & Brothers, filling these positions until his death. In 1853 he published *Hand Book of Literature and Fine Arts.* In 1853 he and Charles A. Dana undertook the editing of Appleton's *American Cyclopedia* (1853, *et seq.*; second edition 1874, *et seq.*).

ROBERTS, CHARLES GEORGE DOUGLAS (1860-). A Canadian poet; born at Douglas, near Fredericton, New Brunswick; professor of English and French literature at King's College, Windsor, Nova Scotia (1885-1887), and of economics and international law (1887-1895); associate editor of the *Illustrated American* at New York (1897); wrote *Orion and Other Poems, In Divers Tones, Ave: An Ode for the Shelley Centennial, Songs of the Common Day, The Book of the Native,* and *New York Nocturnes.* His prose includes *The Canadians of Old, Appleton's Canadian Guide, The Raid from Beauséjour, Reube Dare's Shad Boat, Around the Camp Fire, Earth's Enigmas, A History of Canada, The Forge in the Forest, A Sister to Evangeline, By the Marshes of Minas, The Heart of the Ancient Wood, The Kindred of the Wild, Barbara Ladd, Mam'selle, The Watchers of the Trail,* and *The Haunters of the Silences.*

ROE, EDWARD PAYSON (1838-1888). An American clergyman and novelist; born at Moodna, N. Y. His chief works are *Nature's Serial Story, An Original Belle, Driven Back to Eden, The Earth Trembled, The Home Acre,* and *Taken Alive.*

ROGERS, SAMUEL (1763-1855). An English poet; bred to banking, and all his life a banker; took to literature and produced a succession of poems, *The Pleasures of Memory, Human Life,* and *Italy.*

ROOSEVELT, THEODORE. (See p. 296). The author of *The Naval War of* 1812, *Life of Thomas Hart Benton, Life of Gouverneur Morris, Ranch Life and Hunting Trail, History of New York City, The Winning of the West, Essays on Practical Politics, The Wilderness Hunter, American Political Ideals, The Rough Riders, Life of Oliver Cromwell, The Strenuous Life,* and *The Deer.*

ROSCOE, WILLIAM (1753-1831). An English historian; born near Liverpool; studied law and began to practice (1774); wrote *Life of Lorenzo de' Medici, Called the Magnificent, Life and Pontificate of Leo X.,* and devoted much attention to the study of botany.

ROSSETTI, CHRISTINA GEORGINA (1830-1894). An English poet; born at London; a sister of Dante Gabriel Rossetti. Their father, **GABRIELE ROSSETTI** (1783-1854) was from 1814 to 1821 director of the Museum at Naples, but was exiled on account of his political opinions. In 1824 he settled in England, and in 1831 was made professor of Italian literature in King's College, London. Having become blind he resigned the professorship in 1845. He wrote several poems in Italian, but is specially notable as a commentator upon Dante. The daughter wrote several volumes in verse and prose. Among her poems are *Goblin Market, The Prince's Progress, Sing-Song, Annus Domini,* a prayer and a text for each day of the year; *A Pageant, Letter and Spirit, Time Flies,* and *The Face of the Deep.*

ROSSETTI, DANTE GABRIEL (1828-1882). An English poet and painter; the head of the Pre-Raphaelite Brotherhood; born in London. He wrote *The Blessed Damozel,* a poem of great simplicity and spiritual beauty; *My Sister's Sleep, The House of Life,* of 101 sonnets; a prose work, *Hand and Soul,* and two remarkable ballads, *Sister Helen* and *The King's Tragedy.* Robert Buchanan, under the pseudonym of Thomas Maitland, attacked the morality of Rossetti's poems in the famous article "The Fleshly School of Poetry," which Rossetti answered in his "The Stealthy School of Criticism."

ROSTAND, EDMOND (1868-). A French poet. His first play, *The Romanticists,* was an instantaneous success and was followed by *Princess Lointaine, The Samaritan, Cyrano de Bergerac,* and *L'Aiglon.* Rostand's versification is of remarkable beauty. In 1901 he was elected one of the 40 "immortals" of the French Academy. In 1910 his satire drama, *Chantecler,* was produced.

ROYCE, JOSIAH (1855-). Born in Grass Valley, Cal.; one of the foremost exponents of neo-Hegelianism in America; published *A Primer of Logical Analysis, The Religious Aspect of Philosophy, The Conception of Immortality.*

ROWSON, SUSANNA HASWELL (1762-1824). Anglo-American novelist, dramatist and actress. Of her plays, the two farces *Americans in England* and *The Volunteers* were the most popular; of her novels, *Charlotte Temple.*

RUCKERT, FRIEDRICH (1788-1866). A German poet; born in Bavaria. His most popular books are the collection of lyrics entitled *Springtime of Love* and the reflective poems *The Wisdom of the Brahman.*

RUNEBERG, JOHAN LUDWIG (1804-1877). Famous Swedish poet of Finland, born at Jacobstadt. [See Scan. Lit.]

RUSKIN, JOHN (1819-1900). An English author; born in London. He was Slade professor of fine arts at Oxford. In *Modern Painters* he advocated a complete revolution in the received conventions of art and art criticism. Ruskin was the first art critic to place criticism upon a scientific basis. In 1851 he appeared as a defender of pre-Raphaelitism. About 1860 he began to write as a political economist and social reformer; his chief works in this sphere being *Unto This Last, Munera Pulveris,* and *Fors Clavigera,* a periodical series of letters to the working men and laborers of Great Britain. In this connection he founded, in 1876, the Guild of St. George; founded a linen industry at Keswick, and revived, in Langdale, hand loom weaving. Among his other works are *Crown of Wild Olive, Sesame and Lilies, Ethics of the Dust, Queen of the Air, and Stones of Venice.*

RUSSELL, WILLIAM CLARK (1844-). An English author; born in New York City. His father, **HENRY RUSSELL** (1813-1900), was the composer of the songs *Cheer, Boys, Cheer; To the West, There's a Good Time Coming, Boys; A Life on the Ocean Wave,* and *O Woodman, Spare That Tree.* He was educated at Winchester, England, and in France. He then entered the British merchant service, made voyages to Australia and to China, and after eight years of sailor life abandoned it and devoted himself to literature. His ambition has been to raise the nautical novel to a high standard, and his books are written out of his own experience. His books include *The Wreck of the Grosvenor, A Sailor's Sweetheart, An Ocean Free Lance, Jack's Courtship, The Dutch Ship, A Frozen Pirate, Marooned, On the Fok'sle Head, An Ocean Tragedy, My Shipmate Louise, Life of Nelson, Helma,* and *The Good Ship Mohock.*

RYAN, ABRAM JOSEPH, or **"FATHER RYAN"** (1839-1886). An American poet; born at Norfolk, Va. For several years he was pastor of St. Mary's Church, Mobile, Ala., and in 1880 he went north to lecture and to publish his *Poems, Patriotic, Religious, Miscellaneous.* The longest of these is a narrative poem entitled *Their Story Runneth Thus.*

RYDBERG, VIKTOR (1829-1895). Swedish poet and historical novelist. His works include *Frybytaren pa Oestersjön, Den siste athenaren.*

SACHS, HANS (1494-1576). A German meistersinger; born at Nuremberg. He was active in literature for 51 years (1514-1567), during which time he produced in all over 6,300 pieces, consisting of mastersongs, dramas, stories, fables, histories, and hymns. His works have been published in 23 volumes.

SA DE MIRANDA, FRANCISCO DE (about 1495-1558). Portuguese poet, who wrote also in Spanish. "First of the 'Petrarchists' in Spain and Portugal."

SAINTE-BEUVE, CHARLES AUGUSTIN (1804-1869). A French writer and one of the greatest of modern critics; born in Boulogne, France. In 1845 admitted a member of the French Academy. He wrote three volumes of poetry. His 53 volumes, marked by precision, subtlety, delicacy, tact, and knowledge, cause him to stand alone in the field of criticism.

SAINT-PIERRE, JACQUES HENRI BERNARDIN DE (1737-1814). A French novelist; an engineer by profession; was a disciple of Rousseau both sentimentally and speculatively; his chief work, *Paul and Virginia.*

SALTUS, EDGAR EVERTSON (1858-). An American novelist and journalist; born in New York City. His works include *Balzac, The Philosophy of Disenchantment, The Anatomy of Negation, Eden, A Transaction in Hearts, The Pace That Kills, Imperial Purple, Madame Sapphira, Enthralled,* and *When Dreams Come True.*

SAND, GEORGE, or **MADAME ARMANTINE LUCILE AURORE DUPIN DUDEVANT** (1804-1876). One of the greatest of French novelists; born in Paris. In 1822 she married Baron Dudevant, but in 1831 separated from him. In conjunction with Jules Sandeau, a young lawyer, she wrote *Rose and White,* which was published in 1831, with the pseudonym Jules Sand. The reception it met with afforded her an opportunity of publishing a novel solely by herself—*Indiana,* under the name of George Sand, which she ever after retained. In 1854 she published *Story of My Life,* a psychological autobiography. Her published works consist of upward of 80 separate novels, a large number of plays, and numerous articles in literary journals.

SARDOU, VICTORIEN (1831-1908). A French dramatist; born in Paris. He began play writing in early life, though intended originally for the medical profession. Among his plays are *Cleopatra, Thermidor, Gismonda, Madame Sans-Gêne,* and *Fedora.* He entered the Academy in 1878.

SAXE, JOHN GODFREY (1816-1887). An American humorous poet; born in Highgate, Vt. His most popular verses include *Rhyme of the Rail, The Proud Miss McBride, Progress, The Money King, Fables and Legends of Many Countries,* and *Leisure-Day Rhymes.*

SAYCE, ARCHIBALD HENRY (1846-). An English orientalist. His works are widely known. He wrote *An Assyrian Grammar for Comparative Purposes, The Principles of Comparative Philology,* etc.

SCHEFFEL, JOSEPH VIKTOR VON (1826-1886). A German poet. His first and best work is *Der Trompeter von Säckingen,* a charming tale in verse of the Thirty Years' War.

SCHILLER, JOHANN CHRISTOPH FRIEDRICH VON (1759-1805). A German poet; born in Marbach, Würtemberg; in his twenty-second year wrote the tragedy of *The Robbers,* which at once raised him to the foremost rank among the dramatists of his country. In 1789 he was appointed to the chair of history in the University of Jena, and besides lecturing to crowded audiences he published his *History of the Thirty Years' War* and engaged in various literary enterprises which had great influence on the literature of Germany; settled at Weimar, in order to be near a theater and with Goethe. At intervals he published *Wallenstein, Mary Stuart, Maid of Orleans,* and *William Tell.* [See Ger. Lit.].

SCHREINER, OLIVE (1862-). An English novelist; daughter of a Lutheran clergyman at Cape Town; achieved a great success by *The Story of an African Farm* in 1883, which was followed in 1891 by *Dreams;* also, later, *Dream Life and Real Life,* and *Trooper Peter Halket.*

SCHUYLER, EUGENE (1840-1890). An American author and diplomat; born at Ithaca, N. Y. His books include *Turkistan, Notes of a Journey in Russian Turkistan, Khokand, Bokhara, and Kuldja; Peter the Great as Ruler and Reformer,* and *American Diplomacy and the Furtherance of Commerce.*

SCOLLARD, CLINTON (1860-). An American poet; born at Clinton, N. Y. He has published several volumes of poems, *Pictures in Song, With Reed and Lyre, Old and New World Lyrics, Giovio and Giulia, Songs of Sunrise Lands, The Hills of Song, Skenandoa,* and *A Boy's Book of Rhyme,* besides the prose works *Under Summer Skies* and *On Sunny Shores.*

SCOTT, DUNCAN CAMPBELL (1862-). A Canadian poet; born at Ottawa; entered the civil service and rose to chief clerk and accountant (1893); wrote *The Magic House, Labor and the Angel,* and *The Village of Viger,* a collection of 10 short stories of Canadian country life.

SCOTT, HUGH STOWELL, or **"HENRY SETON MERRIMAN"** (1862-1903). An English author; born at Newcastle-upon-Tyne; wrote *Phantom Future, Suspense, Prisoners and Captives, Slave of the Lamp, With Edged Tools, Grey Lady, The Sowers, In Kedar's Tents, Flotsam, Roden's Corner, Isle of Unrest, Velvet Glove,* and *The Vultures.*

SCOTT, SIR WALTER (1771-1832). A British author; born in Edinburgh, Scotland. From the commencement of his literary career in 1796, when he published his translations of Burger's *Lenore* and *Wild Huntsman,* to the year of his decease, he was constantly writing. His romances are universally known. His patrimonial estate was considerable; and in 1799 he obtained the preferment of sheriff of Selkirkshire, with about £300 ($1,500). In 1811 he built a mansion on the Tweed, to which he gave the name of Abbotsford. In 1826 the great publishing house of Constable & Co. failed and with it the Ballantyne firm in which Scott was a partner. He regarded the Ballantyne debt as personal and, resolving to "owe no man a penny," he began at the age of 55 the task of paying the creditors $600,000. In two years his work had gained for them nearly $200,000; but the severity of his labors permanently broke down his health, and he died before his aim was realized. But in 1847, by sale of copyrights, his debts were all liquidated. Scott was the originator of the historical novel and has added greatly to our appreciation of history by such novels as *Ivanhoe, Legend of Montrose, Kenilworth;* and *The Talisman, Guy Mannering, Waverley, Rob Roy,* and *Heart of Midlothian* are also among his best novels. The *Lady of the Lake, Marmion,* and the *Lay of the Last Minstrel* constitute his best poetry.

SCUDDER, HORACE ELISHA (1838-1902). An American author; born at Boston, Mass. He contributed to Justin Winsor's *Memorial History of Boston* and was joint author with Mrs. Bayard Taylor of the *Life and Letters of Bayard Taylor; The Life and Letters of David Coit Scudder, Boston Town, Noah Webster,* in the "American Men of Letters Series"; besides a number of books for children.

SEELEY, SIR JOHN ROBERT (1834-1895). English essayist and historian. Author of *Ecce Homo, Expansion of England, Growth of British Policy.*

SHAFTESBURY, ANTHONY ASHLEY COOPER, THIRD EARL OF (1671-1713). An English freethinker, philanthropist, and author. A complete collection of his works was published in 1716 under the title *Characteristics of Men, Manners, Opinions, and Times.*

SHAKESPEARE, WILLIAM (1564-1616). An English dramatist and poet; born in Stratford-on-Avon, Warwickshire, England. His birthplace, as pointed out by traditions, is the house in Henley street, Stratford, which belonged to his father. In his nineteenth year he married Anne Hathaway, daughter of a yeoman at the neighboring hamlet of Shottery, and eight years older than himself. He went to London about 1586, and lived there many years, leaving his wife and children at Stratford. He gained an honorable position as actor, play writer, and shareholder in the theater of Blackfriars, and afterward in that of the Globe; enjoyed the favor and patronage of Queen Elizabeth, James I., and the earl of Southampton, the warm friendship of Ben Jonson, and the highest respect and admiration of his associates, not only for his pre-eminence as a poet, but for his honesty, geniality, and worth as a man. Of his end we have no other account than the short statement in the diary of the Rev. John Ward, vicar of Stratford, that "Shakespeare, Drayton, and Ben Jonson had a merry meeting, and it seems drank too hard, for Shakespeare died of a fever then contracted." The first collected edition of Shakespeare's plays was the folio of 1623. His poems of *Venus and Adonis* and the *Rape of Lucrece* were published in 1593 and 1594, and were the only works which appeared with his name in his lifetime. Of the 36 plays (exclusive of *Pericles*), the dates of publication of only a few are known. *The Two Gentlemen of Verona* and *Love's Labor's Lost* were among the earliest; and *The Tempest, Troilus and Cressida, Henry VIII., Coriolanus, Julius Caesar,* and *Antony and Cleopatra* among the latest. The *Midsummer Night's Dream, Merchant of Venice, Romeo and Juliet, Richard II., Richard III., Henry IV.,* and *King John* were all produced before 1598. A copy of *Hamlet* is extant, bearing the date 1603. *Twelfth Night* was produced in 1601; *King Lear* was printed in 1607; *The Tempest* was written in 1611. The second folio edition of the collected plays appeared in 1632, and two others subsequently. [See Eng. Lit.].

SHAW, ALBERT (1857-). An American economist and editor; born at Shandon, Ohio; wrote *Icaria: A Chapter in the History of Communism;* editor of the American *Review of Reviews;* wrote also *Municipal Government in Great Britain,* and *Municipal Government in Continental Europe.*

SHAW, GEORGE BERNARD (1856-). A British critic, essayist, and dramatist; born in Dublin; began his literary career in London as a fine art critic; wrote four novels, *The Irrational Knot, Love Among the Artists, Cashel Byron's Profession,* and *An Unsocial Socialist.* His plays have aroused much discussion. They are included in *Plays Pleasant and Unpleasant, Three Plays for the Puritans,* and *The Admirable Bashville.* Other works are *Fabian Essays, The Quintessence of Ibsenism,* and *The Perfect Wagnerite.*

SHAW, HENRY WHEELER, or **"JOSH BILLINGS"** (1818-1885). An American humorist; born at Lanesborough, Mass. His sketches, written in his original method of spelling, were very popular. His published works include *Josh Billings, His Sayings; Josh Billings on Ice, Every Body's Friend,* and *Josh Billings' Spice Box.* In 1870 he began the publication of *Josh Billings' Farmers' Allminax,* which appeared annually.

SHELLEY, PERCY BYSSHE (1792-1822). An English poet; son of Sir Timothy Shelley; born near Horsham, England. At Oxford he published anonymously a scholastic thesis entitled *Necessity of Atheism;* refusing either to acknowledge or deny it, was at once expelled. His first great poem, *Queen Mab,* was followed by the *Revolt of Islam,* a poem in the Spenserian stanza. In 1811 he eloped to Edinburgh with Harriet Westbrook, the daughter of a retired innkeeper. She was 16 years of age, his own age being 19. The marriage turned out unhappily. In November, 1816, she committed suicide by drowning. Shelley was deeply affected by this event, but soon after married Mary Godwin. Shelley left England in March, 1818, and the whole short remainder of his life was passed in Italy. On July 8, 1822, he was sailing with a Mr. Williams in the Bay of Spezia, when both were drowned. He wrote also *Alastor, Adonais, Sensitive Plant, The Skylark,* and *The Defense of Poetry.* [See Eng. Lit.].

SHERIDAN, RICHARD BRINSLEY (1751-1816). An English dramatist and politician; born in Dublin; scored his first success with *The Rivals. The School for Scandal* and *The Critic* set flowing the tide of prosperity. Turning his attention next to politics, he entered Parliament, and two years later became undersecretary for foreign affairs. His great speech impeaching Hastings placed him in the front rank of orators. He died in poverty, but was accorded a burial in Westminster Abbey.

SHERMAN, FRANK DEMPSTER, or **"FELIX CARMEN"** (1860-). An American poet; born at Peekskill, N. Y. He achieved fame as a writer of graceful, piquant verses; published *Madrigals and Catches, Lyrics for a Lute, New Waggings of Old Tales,* in collaboration with John Kendrick Bangs, and *Little-Folk Lyrics.*

SHILLABER, BENJAMIN PENHALLOW, or **"MRS. PARTINGTON"** (1814-1890). An American humorist; born at Portsmouth, N. H. His *Life and Sayings of Mrs. Partington* gave him fame. His other works are *Rhymes with Reason and Without, Knitting Work, Partingtonian Patchwork, Lines in Pleasant Places, The Ike Partington Juvenile Series, Ike and His Friends, Cruises with Captain Bob, The Double-runner Club, Wide-Swath,* a collection of verses; and *Mrs. Partington's New Gripsack Filled with Fresh Things.*

SHORTHOUSE, JOSEPH HENRY (1834-1903). English novelist, noted for his *John Inglesant.*

SIDNEY, SIR PHILIP (1554-1586). An English poet and one of the most attractive figures at Elizabeth's court; born at Penshurst, Kent; the son of Sir Henry Sidney, lord deputy of Ireland; sent as ambassador in 1577 to the court of Vienna. In 1583 he received a knighthood. He received his death wound at the battle of Zutphen. His fame as an author rests securely on his prose romance *Arcadia,* his critical treatise *The Defense of Poesy,* and above all on his exquisite sonnet series *Astrophel and Stella.* [See Eng. Lit.].

SIDONIUS, APOLLINARIS (431-about 482). Roman poet, received political advance as reward for his panegyrics. Author of *Poems* and *Letters.*

SIENKIEWICZ (*se-en'ke-vix*), **HENRYK** (1846-). A Polish author; born in Siedlce. He is the author of the historical novel *Quo Vadis, With Fire and Sword, Knights of the Cross,* etc.

SIG'OURNEY, LYDIA (HUNTLEY) (1791-1865). An American author; born in Norwich, Conn. In her *Letters of Life* she enumerates 46 distinct works wholly or partially from her pen, besides over 2,000 articles in prose and verse contributed to nearly 300 periodicals.

SILL, EDWARD ROWLAND (1841-1887). An American poet and essayist; born at Windsor, Conn.; wrote *Hermione and Other Poems, The Hermitage and Other Poems, The Venus of Milo and Other Poems, Essays in Literature and Education and Friendly Letters,* and a posthumous collection embracing most of his better verse.

SIMMS, WILLIAM GILMORE (1806-1870). A prolific American writer; born at Charleston, South Carolina; turned from law to literature. *Southern Passages and Pictures* contains characteristic examples of his poetry, and of his novels *Woodcraft, The Partisan,* and *Beauchampe* may be mentioned.

SISMON'DI, JEAN CHARLES LEONARD SIMONDE DE (1773-1842). A celebrated Swiss historian; born at Geneva. The works which have established his reputation are his great histories of *The Italian Republics in the Middle Ages, European Literature,* and *A History of the French.*

SLOANE, WILLIAM MILLIGAN (1850-). American historian. His works include *French War and the Revolution, Napoleon Bonaparte, French Revolution and Religious Reform, Life of James McCosh.*

SLOWACKI, JULIUSZ (1809-1849). Polish poet, called "Satan of Literature" from the misanthropic tenor of his writings.

SMILES, SAMUEL (1812-1904). A British author. The greater portion of his works are biographical. Among these works are *The Life of George Stephenson, Self-Help, Lives of the Engineers, Industrial Biography, The Huguenots in England and Scotland, Character, The Huguenots in France, Duty, Life and Labor, A Publisher and His Friends, Jasmin the Barber Poet,* and *Josiah Wedgewood.*

SMITH, ADAM (1723-1790). A British political economist. In 1776 he produced his *Inquiry in the Nature and Causes of the Wealth of Nations,* a work to which he devoted ten years of his life and which has rendered his name world-famous.

SMITH, FRANCIS HOPKINSON (1838-). An American author, engineer, and artist; born in Baltimore, Md. (For his work as an artist, see Dictionary of Fine Arts); wrote *Well-Worn Roads, Colonel Carter of Cartersville, A Day at Laguerre's, Tom Grogan, Gondola Days, Caleb West Master Diver, The Other Fellow, The Fortunes of Oliver Horn,* etc.

SMITH, GOLDWIN (1823-1910). An English man of letters; born in Berks; regius professor of modern history at Oxford (1858-1866); a stanch friend of the North during the Civil War; came to America as professor of English history in Cornell University; in 1871 settled in Canada; was regent of the University of Toronto; editor of the *Canadian Monthly,* the *Nation,* and the Toronto *Week.* He believed that Canada will be annexed to the United States; wrote a number of books and pamphlets to that effect, including *Relations between England and America* and *The Political Destiny of Canada.* A few of his other voluminous writings are *Lectures on Modern History, Irish History and Irish Character, The Empire, Lectures and Essays, Essays on the Questions of the Day,* and *History of the United States.* He was an ultra-Liberal.

SMITH, SAMUEL FRANCIS (1808-1895). An American clergyman and author; born in Boston; wrote *My country, 't is of thee,* and he says, "It was written at Andover in 1831 or 1832; was first used at a children's Fourth of July celebration at the Park Street Church (1832), and made a national hymn, without my planning or seeking for such a distinction, because the people, unasked, took it up, and *would* sing it."

SMITH, SYDNEY (1771-1845). An English clergyman; born in Woodford, Essex. In 1803 he removed to London. He became renowned as one of the wittiest and most genial of men. He wrote *Letters on Catholics* or *The Plymley Letters, Three Letters to Singleton,* and *Letters on American Debts.*

SMOLLETT, TOBIAS GEORGE (1721-1771). A British novelist; born at Dalquhurn, Dumbartonshire, Scotland; bred to medicine, but drifted to literature; achieved his first success in *Roderick Random,* which was followed by *Peregrine Pickle, Count Fathom,* and *Humphrey Clinker;* wrote a *History of England* and a political lampoon, *The Adventures of an Atom.*

SOPH'OCLES (495-406 B. C.). A Greek tragic poet; born in the Attic demus or village of Colonus, a suburb of Athens. He was 15 when the battle of Salamis was fought, and for his remarkable beauty and skill in music he was chosen to lead the chorus which sang the paean of victory. The number of plays attributed to him without question was 113. Seven only are extant, viz., *Antigone, Electra, Trachinian Women, King Oedipus, Ajax, Philoctetes,* and *Oedipus at Colonus.* These exhibit his art in its maturity, and sustain the verdict of ancient and modern critics that Sophocles carried the Greek drama to its highest perfection.

SOUTHEY, ROBERT (1774-1843). An English poet. In 1803 he took up his residence at Keswick, in Cumberland, being thenceforth classed as one of the Lake poets. The latter years of his life were clouded by a mental imbecility. His chief poems are *Joan of Arc, A Vision of Judgment, Roderick, Thalaba, Madoc,*

and *The Curse of Kehama*. His prose is of most value, especially *Letters from England by Don Manuel Espriella, The Doctor*, containing *The Three Bears;* and the lives of *Wesley* and of *Nelson*.

SPARKS, JARED (1789-1866). An American historian; born in Willington, Conn.; author of a large number of sermons, biographical and historical works, theological papers, etc., notably *The Library of American Biography* and *Correspondence of the American Revolution*.

SPENSER, EDMUND (1552-1599). One of England's greatest poets. Details of his life are scanty. He wrote *Shepherd's Calendar*, more rhythmical than any preceding poem in English; *Epithalamion*, the finest English marriage hymn; *Faerie Queene*, his great poem, in which he invented Spenserian stanza; *Four Hymns* in honor of love and beauty; and the *Prothalamion*. [See Eng. Lit.].

SPIELHAGEN, FRIEDRICH (1829-). German novelist; author of *Problematische Naturen, Durch Nacht zum Licht, Der neue Pharao, Beiträge zur Theorie und Technik des Romans*.

SPOFFORD, HARRIET PRESCOTT (1835-). An American author; born in Calais, Me.; wrote *New England Legends, The Thief in the Night, Marquis of Carabas, Hester Stanley at St. Mark's, Ballads About Authors, Scarlet Poppy, A Master Spirit*, and *In Titian's Garden*.

STAEL (*deh stah-l'*), **ANNE LOUISE GERMAINE, BARONNE DE** or **MADAME DE** (1766-1817). Born in Paris; daughter of Necker and only child; a woman of eminent ability and an admirer of Rousseau; wrote *Letters* on his character and works; married the Baron de Staël-Holstein, the Swedish ambassador in Paris. Her salon became the center of the literary and political activity of the time. The ambition of Napoleon excited her distrust, and forced her into opposition so expressed that in 1803 she was ordered to leave Paris. In 1802 she was left a widow, and soon after she went to Weimar, where she met Goethe and Schiller. By and by she returned to France and published *Corinne*, her best novel. After this appeared her great epoch-making work on Germany, *De l'Allemagne*, which was seized by the French censors and she was banished from France and settled in Switzerland.

STANNARD, HENRIETTA ELIZA VAUGHAN, or **"JOHN STRANGE WINTER"** or **"VIOLET WHYTE"** (1856-). An English novelist; born at York; married Arthur Stannard, a civil engineer (1884); wrote *Sketches of Cavalry Life, Bootles' Baby, Houplá, On March, Garrison Gossip, A Siege Baby, Beautiful Jim, A Blameless Woman, Heart and Sword, The Married Miss Binks, A Blaze of Glory*, and *Marty*.

STEDMAN, EDMUND CLARENCE (1833-1908). An American poet and banker; born in Hartford, Conn. The best known of his critical works are *Victorian Poets, Edgar Allan Poe, Poets of America, The Nature and Elements of Poetry, A Victorian Anthology, An American Anthology*, and editor with Miss Ellen M. Hutchison of *A Library of American Literature* and with George E. Woodberry of the *Works of Edgar Allan Poe*.

STEELE, RICHARD (1672-1729). A British author; born at Dublin; was educated at Charterhouse School, London, Addison being one of his schoolfellows; afterwards entered the University of Oxford, but left without taking a degree, and enlisted in the Horse Guards, where he rose to the rank of captain. In 1701 he put forth *The Christian Hero*, a religious treatise, and within a few years produced several fairly successful comedies, the earliest being *The Funeral, or Grief à la Mode*, the last and best being *The Conscious Lovers*. Steele was an industrious pamphleteer, but his fame rests upon his essays in *The Tatler* and *The Spectator*, rather than upon his dramas or his political writings. [See Eng. Lit.].

STEPHEN, SIR LESLIE (1832-1904). An English man of letters, biographer, and critic; became editor of the *Cornhill* and of the *Dictionary of National Biography;* author of *Hours in a Library, History of English Thought in the Eighteenth Century, The Science of Ethics, Life of Henry Fawcett, An Agnostic's Apology, Life of Sir James Fitzjames Stephen, Studies of a Biographer, The English Utilitarians*, and lives of *Swift, Pope, Johnson, Hobbes*, and *George Eliot*.

STERNE, LAURENCE (1713-1768). An English humorist; born at Clonmel, Ireland. In 1759 appeared the first two volumes of *Tristram Shandy*, and in 1767 the last one; in 1768 his *Sentimental Journey;* and in the interim his *Sermons*.

STESICHORUS (about 640-555 B. C.). Greek lyric poet. His arrangement of strophe, antistrophe, and epode became the model for lyric poetry.

STEVENSON, ROBERT LOUIS BALFOUR (1850-1894). A British author; born in Edinburgh, Scotland; wrote for periodicals till 1878, when his first book appeared; visited California in 1879. In 1888 he cruised in the Southern Pacific for his health; bought a tract of land ("Vailima" or "Five Streams") in Samoa, where he made his home. His chief works are *Treasure Island, Dr. Jekyll and Mr. Hyde, St. Ives, Weir of Hermiston* (his best), *Underwoods*, and *Prince Otto*.

STOCKTON, FRANCIS RICHARD (1834-1902). An American author; born at Philadelphia; became an engraver, but soon abandoned art for literature. He wrote several novels and numerous short stories, which have been collected into separate volumes, among which are *Rudder Grange, The Lady or the Tiger? The Late Mrs. Null, Christmas Wreck, The Bee-Man of Orn, The Casting Away of Mrs. Lecks and Mrs. Aleshine, The Dusantes, Amos Kilbright, Personally Conducted, Ardis Claverden, The Stories of the Three Burglars, The House of Martha, The Rudder Grangers Abroad, The Squirrel Inn, The Watchmaker's Wife, Pomona's Travels, Adventures of Captain Horn, Afield and Afloat*, and *The Captain's Toll-Gate*.

STOWE, HARRIET ELIZABETH BEECHER (1811-1896). An American novelist; daughter of Lyman Beecher and sister of Henry Ward Beecher; born in Litchfield, Conn.; was married to Professor Calvin Ellis Stowe. In 1864 she settled in Hartford, Conn. She published *The Mayflower, or Sketches of the Scenes and Characters Among the Descendants of the Pilgrims; Uncle Tom's Cabin, or Life Among the Lowly;* and a large number of other works. Her best known work, *Uncle Tom's Cabin* (suggested by the life of Josiah Henson), has been translated into 19 languages, its sale exceeding that of any previous work of English fiction.

STRICKLAND, AGNES (1796-1874). An English author; born in London. She wrote several books of verse and fiction before entering upon her career as a writer of historical biography. Her principal works in this department are *Lives of the Queens of England*, in which she was assisted by her sister, Elizabeth Strickland; *Lives of the Queens of Scotland*, and *Lives of the Seven Bishops*.

STUBBS, WILLIAM (1825-1901). English prelate and historian; wrote *Constitutional History of England, Historical Introductions to the Rolls Series, Seventeen Lectures on the Study of Mediæval and Modern History*.

SUDERMANN, HERMANN (1857-). German novelist and dramatist. Among his numerous productions are the dramas *Die Ehre, Heimat* (*Magda*), *Es lebe das Leben* (*The Joy of Living*), and the novels *Frau Sorge* (*Dame Care*), *Der Katzensteg* (*Regina*), *Es war*.

SUE, MARIE JOSEPH or **EUGENE** (1804-1857). A French novelist; born in Paris. His most famous works are *The Mysteries of Paris* and *The Wandering Jew*. In 1850 he was elected to the Constituent Assembly and sat as an advanced radical. After the *coup d'état* by Napoleon III. in 1851 he left France and retired to Savoy.

SULLY-PRUDHOMME, RENE FRANCOIS ARMAND (1839-1907). French poet; born in Paris; in 1907 received the Noble prize in literature. His works include *Stances et poèmes, La justice, Le bonheur*.

SULTE, BENJAMIN (1841-). Canadian poet and historian. His songs are included in *Les Laurentiennes* and *Les chants nouveaux*. Author of *Histoire des Canadiens-Français, Histoire de Saint François-du-Lac*.

SWIFT, JONATHAN (1667-1745). The greatest of English satirists; born in Dublin, Ireland. He was the posthumous son of Jonathan Swift, an Englishman, and was educated at Kilkenny and at Trinity College, Dublin. In 1701 he took his doctor's degree and in 1704 he published anonymously his famous *Tale of a Tub*, to which was appended the *Battle of the Books*. In 1710 Swift began his *Journal to Stella*, which constitutes a splendid commentary on his own history. His famous *Gulliver's Travels* appeared in 1726. He died in Dublin, bequeathing the greatest part of his fortune to a hospital for lunatics and idiots. [See Eng. Lit.]

SWINBURNE, ALGERNON CHARLES (1837-1909) An English poet and essayist; son of Admiral Charles Henry Swinburne; born in London. His first productions were *Queen Mother* and *Rosamund*. They were followed by two tragedies, *Atalanta in Calydon* and *Chastelard*, and by *Poems and Ballads*, reprinted as

Laus Veneris. He also wrote *A Study of Shakespeare, Astrophel, and Other Poems; Essays and Studies, The Tale of Balen,* and *Rosamund, Queen of the Lombards.* His reply to Robert Buchanan's attack on himself and Rossetti is entitled *Under the Microscope.*

SWINTON, WILLIAM (1833-1892). An American author; born in Scotland. His principal works in the department of military history are *Campaigns of the Army of the Potomac, The Twelve Decisive Battles of the War,* and *History of the New York Seventh Regiment During the War of the Rebellion.*

SYMONDS, JOHN ADDINGTON (1840-1893). An English author; born at Bristol. He was educated at Harrow and Oxford. Most of his works—the earliest of which appeared in 1872—are upon Italian subjects. In verse he has translated *Sonnets of Michelangelo and Campanella* and a volume of *Sonnets on the Thought of Death, Many Moods, New and Old.* His prose works are *Introduction to the Study of Dante, Studies of the Greek Poets, Renaissance in Italy, Sketches in Italy and Greece, Italian By-Ways,* and the lives of *Shelley* and *Sir Philip Sidney* in the "English Men of Letters." The seventh and last volume of his work on the Italian Renaissance was published in 1886. *In the Key of Blue* and *Walt Whitman* were published after his death in 1893. He is the Opalstein in Stevenson's *Memories and Portraits.*

TACITUS, PUBLIUS CORNELIUS (about 55-about 117). A Roman historian; born presumably at Rome. Of writings extant, the chief are his *Life of Agricola, Germania, Histories,* and *Annals.* His *Agricola* is admired as a model biography, while his *Histories* and *Annals* are distinguished for their conciseness, their vigor, and their poetical coloring.

TAINE, HIPPOLYTE ADOLPHE (1828-1893). Born at Vouziers; French historian, critic, and man of letters; educated at Ecole Normale. Among his most important writings are his *History of English Literature,* and the *Beginnings of Contemporaneous France,* the former considered one of the finest on that subject, while the latter is the most noted of his works. In 1878 he was elected to the French Academy.

TALFOURD, SIR THOMAS NOON (1795-1854). An English lawyer and dramatist; was for some years a member of Parliament; introduced the copyright bill (1837), for which Dickens dedicated *Pickwick* to him; author of four tragedies, of which *Ion* is the best known.

TARBELL, IDA MINERVA (1857-). An American author; wrote *Short Life of Napoleon Bonaparte, Life of Madame Roland, Early Life of Abraham Lincoln, Life of Abraham Lincoln,* and *History of the Standard Oil Company.*

TARKINGTON, NEWTON BOOTH (1869-). An American author; born in Indianapolis, Indiana; graduated from Princeton University (1893). His first novel, *The Gentleman from Indiana,* won for him much success, and was followed by his *Monsieur Beaucaire* (1900), *The Two Vanrevels* (1902), and *The Conquest of Canaan,* etc. (1905).

TASSO, TORQUATO (1544-1595). A famous Italian poet; born at Sorrento, March 11, 1544. Tasso's lyrics, plays, and letters contained many fine passages, but the poet owes his fame to two works alone—the narrative, *Jerusalem Delivered,* and the pastoral play *Aminta.* [See Ital. Lit.].

TAYLOR, SIR HENRY (1800-1886). An English poet. His best-known tragedies are *Philip Van Artevelde* (1834), *Isaac Commenus* (1827), *Edwin the Fair* (1842), and *Saint Clement's Eve* (1862). In 1847 his *Eve of Conquest* appeared.

TAYLOR, JAMES BAYARD (1825-1878). An American writer and traveler; born in Kennett Square, Chester County, Pa. He wrote *Ximena: or the Battle of the Sierra Morena,* translation of Goethe's *Faust, Ode* in honor of the opening of the Centennial Exhibition at Philadelphia, and many books of travel and novels.

TCHEKHOV, ANTON PAVLOVITCH (1860-1904). A Russian novelist. Wrote *In Twilight* (1887), and *Morose Folks* (1890), *Memories of a Stranger,* and *Steppe,* all of which are humorous and witty.

TEGNER, ESAIAS (1782-1846). A popular Swedish poet; the son of a country parson. His poems, of *which Frithiof's Saga* is reckoned the finest in Swedish, have the finish of classic models, but are charged with the fire and vigor of modern romanticism.

TENNYSON, ALFRED, LORD (1809-1892). An English poet; born in Somersby, England. His literary career may be said to date from 1830, when he published a volume entitled *Poems, Chiefly Lyrical.* It was not received with any great favor by the public, but its success was sufficient to encourage the poet to prepare a second collection, which appeared in 1833 and contained such poems as *A Dream of Fair Women, Oenone,* and others. It was not till 1842 that he again appealed to the public with a selection of his poems in two volumes. *The Idylls of the King* is his highest achievement. He received the laureateship upon the death of Wordsworth (1850). Thereafter hardly a year passed without his adding some gem to our language. Among his later compositions are the dramas *Queen Mary, Harold,* and *The Cup.* Tennyson was raised to the peerage in 1884 as Baron Tennyson of Aldworth, Sussex, and Freshwater, Isle of Wight. He died in Aldworth, England, and was buried in Westminster Abbey. [See Eng. Lit.].

TERHUNE, MARY VIRGINIA. or **"MARIAN HARLAND"** (1831-). An American author; born in Richmond, Va.; author of *Common Sense in the Household, At Last, Sunnybank, Sketches of European Travel, Our Daughters and What Shall We Do With Them? Judith,* and *A Gallant Fight.*

THACKERAY, WILLIAM MAKEPEACE (1811-1863). An English novelist; born in Calcutta, India. Being well provided for, he chose the profession of an artist. He spent several years in France, Germany, and Italy, staying at Paris, Weimar, and Rome, but gradually became convinced that art was not his vocation, and, having lost his fortune, he resolved to turn his attention to literature. His first appearance in this sphere was as a journalist. In 1846-1848 his novel of *Vanity Fair* was published in monthly parts, with illustrations by himself; and long before its completion its author was unanimously placed in the first rank of British novelists. His next great novel was *Pendennis,* completed in 1850. In 1851 he delivered a course of lectures in London on the *English Humorists of the Eighteenth Century,* which was repeated in Scotland and America. In 1855-1856 he delivered a series of lectures in the United States—*The Four Georges*—and afterward in England and Scotland. Besides those mentioned, Thackeray's other great novels are *The Newcomes* and *Henry Esmond.*

THAXTER, CELIA (LAIGHTON) (1836-1894). An American author; born at Portsmouth, N. H.; daughter of a lighthouse keeper. Her poems are full of the shimmer and dash of the sea—many of them exquisite marine paintings as well as glowing utterances of the heart. Her collected poems were published in 1871 and 1876; *Drift-weed, Poems for Children, The Cruise of the Mystery and Other Poems,* and *Idyls and Pastorals. Among the Isles of Shoals* is a series of charming prose sketches.

THIERRY, JACQUES NICOLAS AUGUSTIN (1795-1856). A French historian. In 1825 published his *History of the Conquest of England by the Normans,* which placed him in the first rank of modern historians, as distinguished from mere chroniclers on the one hand and from historical theorists on the other. While engaged upon this work his eyesight was impaired, and in 1827 he became totally blind, although, as in the similar case of Milton, there was no outward indication of the loss of vision. A few years later he became paralyzed in all his limbs, being unable to walk or even hold a pen. He nevertheless continued his minute historical researches by the help of the eyes and hands of others, notably those of his young wife, Julie de Quurangel, whom he married in 1831 and who was herself the author of several esteemed works. Thierry's other works are *Letters on the History of France, Ten Years of Historical Studies, Narrative of the Times of the Merovingians,* and *Essay on the Formation and Progress of the Third Estate.*

THIERS, ADOLPHE (1797-1877). French historian. Although his *Histoire de la Revolution Francaise* has not stood the test of historical criticism it won him fame when first published in 1823.

THOMPSON, JAMES MAURICE (1844-1901). An American author; born in Fairfield, Ind.; was state geologist of Indiana (1885-1889); wrote nature studies. He published in book form *Hoosier Mosaics, The Witchery of Archery, A Tallahassee Girl, Alice of Old Vincennes* (his best novel), and *My Winter Garden.*

THOMSON, JAMES (1700-1748). A Scottish poet; the author of *The Seasons*; the son of the parish minister at Ednam, Roxburghshire. His poem *Winter* had immediate success and raised up a host of friends and patrons. The *Masque of Alfred,* with its popular song *Rule Britannia,* and his greatest work, *The Castle of Indolence,* were the outcome of his later years of leisure.

THOREAU, HENRY DAVID (1817-1862). An American author; born in Concord, Mass. In 1845 he built for himself a hut in a wood near Walden Pond, Concord, Mass., and there for two years lived the life of a hermit. Besides contributing to the *Dial* and other periodicals, he published *A Week on the Concord and Merrimac Rivers* and *Walden, or Life in the Woods.* After his death appeared *Excursions in Field and Forest, The Maine Woods, Cape Cod,* and *A Yankee in Canada.* Thoreau was a friend of Emerson and imbibed much of his spirit and method of thought. His best essays are *Miscellanies and Excursions,* of remarkable style and substance.

THUCYDIDES (about 460-about 400 B. C.). The Greek historian of the Peloponnesian War; born in Athens, of a wealthy family; naval commander in 424 B. C. in the Peloponnesian War, but from neglect of duty was banished; returned from exile 20 years after. His great achievement is his history, all derived from personal observation and oral communication, the materials of which were collected during the war, and the whole executed in a style to entitle it to rank among the noblest literary monuments of antiquity. He was the greatest historian of ancient times.

TICKNOR, GEORGE (1791-1871). An American scholar; born at Boston. In 1840 he set himself strenuously at work upon the composition of his *History of Spanish Literature,* which was published in 1849. The work was at once recognized as the best upon the subject in any language, and was almost immediately translated into Spanish and German. In the numerous translations from Spanish poets, Ticknor evinced poetical ability of a high order. Besides this great work he contributed some valuable papers to the *North American Review.* He also published a *Memoir of Nathaniel Appleton Hazen, Life of William H. Prescott,* and *Remarks on the Character of Edward Everett. Life, Letters, and Journals of George Ticknor* appeared in 1876.

TIMROD, HENRY (1829-1867). An American poet; born in Charleston, S. C.; the best of southern lyrists after Poe and Lanier. Among his best poems are *Katie, The Cotton Boll, Charleston,* and an *Ode* on the Confederate dead in Magnolia Cemetery, Charleston.

TOCQUEVILLE, ALEXIS CHARLES HENRI CLEREL DE (1805-1859). A French economist and political philosopher; bred to the bar, and especially distinguished as the author of two works in high repute, *La démocratie en Amérique* and *L'ancien régime et la révolution;* died at Cannes, leaving much of his work unfinished. He was elected to the Academy in 1841.

TOLSTOY, COUNT LYOF NIKOLAYEVITCH (1828-). A Russian novelist; born on the family estate of Yasnaya Polyana in the province of Tula, Russia. He served in the Crimean War, and afterward traveled extensively. In 1861 he took up permanent residence on his country estate. Among his earliest works are *Detsvo* (Childhood), *Otrchestvo* (Boyhood), and *Iunost* (Youth); also *Cossacks, Sevastopol,* and a number of military sketches. *War and Peace* was published in 1865-1868; *Anna Karenina* in 1875-1876. His peculiar doctrines are promulgated in *My Confession, In What My Faith Consists,* etc.; many of them are forbidden in Russia. His later works are *The Kreutzer Sonata, Death of Ivan Ilytch,* and *Master and Man.*

TOTTEL, RICHARD (about 1525-1594). An English publisher. Noted for his compilation of the famous *Tottel's Miscellany,* published 1557, containing 271 heretofore unpublished poems by English authors.

TREITSCHKE, HEINRICH VON (1834-1896). German historian. His chief work is *Deutsche Geschichte im neunzehnten Jahrhundert* brought down to the year 1848.

TRENCH, RICHARD CHENEVIX (1807-1886). Archbishop of Dublin, poet, and scholar; born in Dublin; was educated at Harrow and Cambridge; wrote *Notes on the Parables, Notes on the Miracles, Commentary on the Epistles to the Seven Churches, Studies on the Gospels, The Study of Words, English Past and Present,* and *Lectures on Mediaeval Church History.*

TROLLOPE, ANTHONY (1815-1882). An English novelist; born in London. He was educated at Harrow and Winchester; in 1834 became a clerk in the post office, and in 1841 was appointed clerk to a post office surveyor in Ireland. His Irish experiences gave him material for his first novels. His first success was *The Warden,* followed by *Barchester Towers, Doctor Thorne, The Three Clerks. The Bertrams, Castle Richmond, Framley Parsonage, Orley Farm, The Small House at Allington, Can You Forgive Her? Phineas Finn, The Eustace Diamonds, Phineas Redux, The Way We Live Now,* and *Is He Popenjoy?*

TRUMBULL, JOHN (1750-1831). An American poet. The satiric poem *The Progress of Dullness* was published in 1772. His most famous work was *McFingal,* an epic poem after the style of Hudibras.

TUPPER, MARTIN FARQUHAR (1810-1889). An English poet; author of *Proverbial Philosophy;* born in Marylebone; bred to the bar; wrote some 40 works. The *Philosophy* had a phenomenal success.

TURGUENIEV, IVAN SERGEYEVITCH (1818-1883). A Russian novelist; born at Orel. By him the term "nihilist" was first used in its political sense. In 1843-1844 he issued several books of poetry. Among his other volumes are *Memoirs of a Sportsman, Fathers and Sons, Smoke, Liza, On the Eve, Dimitri Rudin, Journal of a Useless Man, A Lear of the Steppe, Spring Floods, The Unfortunate One, Virgin Soil, First Love,* and *Assya.* [See Rus. Lit.].

TYLER, ROYALL (1757-1826). An American writer. Produced *The Contrast,* a drama which had much success. His masterpiece was *The Algerine Captive* (1797).

TYNDALE, WILLIAM (about 1490-1536). English translator of the Bible. [See Eng. Lit.].

UDALL, NICHOLAS (1505-1556). An English dramatist; born at Hampshire. From 1534 to 1543 he was master at Eton. In 1555 he became master of Westminster School; he wrote several plays for his pupils, one of which, *Ralph Roister Doister,* in five acts, is the earliest specimen of English comedy. It was written before 1541, and it marks the transition from the mysteries and interludes of the Middle Ages to the comedies of modern times.

UHLAND, JOHANN LUDWIG (1787-1862). A distinguished German poet; born at Tübingen. He wrote poetry which appeared in periodicals as early as 1806. His works include *Gedichte,* the dramas *Ernst von Schwaben* and *Ludwig der Bayer, Alte hoch- und niederdeutsche Volkslieder,* and *Schriften zur Geschichte der Dichtung und Sage.* His poems have been translated by Longfellow and by Alexander Platt, and his *Songs and Ballads* by W. W. Skeat.

URQUHART, DAVID (1805-1877). A Scotch writer and politician; secretary of the legation at Constantinople (1835-1836); wrote *Turkey and Its Resources, The Spirit of the East, The Mystery of the Danube,* and *Letters and Essays on Russian Aggressions.*

VANBRUGH, SIR JOHN (1664-1726). English dramatist. His plays include *The Relapse* (1697), *The Provok'd Wife* (1697), and *The Mistake* (1705).

VAN DYKE, HENRY (1852-). An American educator; born in Germantown, Pa. His publications include *The Reality of Religion, The Poetry of Tennyson, The Ruling Passion,* and *The Blue Flower.*

VEGA CARPIO, LOPE FELIX DE (1562-1635). Known as Lope; a Spanish dramatist; born in Madrid; served in the Armada; was secretary to the duke of Alva; took orders and became a priest; wrote a heroic pastoral entitled *Arcadia* at the instance of the duke, and *La Dragontea* over the death of Drake as the destroyer of the supremacy of Spain on the sea; was a man of fertile inventiveness, and is said to have written 1,500 plays and many verses, and was called by Cervantes a "prodigy of nature." He wrote also *San Isidro.* [See Sp. Lit.].

VERGIL (70-19 B. C.). A great Latin poet; born near Mantua; author in succession of the *Eclogues,* the *Georgics,* and the *Aeneid;* studied at Cremona and Milan, and at 17 was sent to Rome to study rhetoric and philosophy; lost property he had in Cremona after the battle of Philippi; went to settle in Rome. Here, in 37 B. C., he published his *Eclogues,* a collection of 10 pastorals, and gained the patronage of Maecenas, under whose favor he was able to retire to a villa at Naples, where in seven years he, in 29 B. C., produced the *Georgics,* in four books, on the art of husbandry, after which he devoted himself to his great work, the *Aeneid,* or the story of Aeneas of Troy, an epic in 12 books, connecting the hero with the foundation of Rome, and especially with the Julian family, and which was finished in 19 B. C. On his deathbed he expressed a wish that it should be burned, and left instructions to that effect in his will.

VERLAINE, PAUL (1844-1896). A French poet. Little is known of his early life. He was the greatest "Symbolist" poet of France. He wrote *Poèmes saturniens, Les fêtes galantes, La bonne chanson, Sagesse,*

Mes prisons, Mes Hôpitaux, Jadis et naguère, Romances sans paroles, Amour, Bonheur, Parallèlement, Chansons pour elle, Les poètes maudits, Confessions, and *Les hommes d'aujourd'hui.*

VERNE, JULES (1828-1905). A French novelist; born in Nantes. He studied law for some time, but afterward began writing short pieces for the stage. His more popular works are *Twenty Thousand Leagues Under the Sea, From the Earth to the Moon, Across Africa in a Balloon, Michel Strogoff, To the Center of the Earth, Round the World in Eighty Days, The Mysterious Island,* etc.

VIGNY (*veen-yee'*), **ALFRED, COMTE DE** (1799-1863). A French poet of the Romanticist school. He wrote *Poems* and *Poems Ancient and Modern* between 1821 and 1826. His strongest drama was *Chatterton,* published in 1835; wrote also *Cinq-Mars,* a long historic novel, and translated into French *Othello.*

VILLANI, GIOVANNI (about 1275-1348). An Italian historian. Wrote a chronicle of Florence to 1348 in twelve books, which was continued by his brother Matteo.

VILLARI, PASQUALE (1827-). An Italian historian. His works include *Lives of Savonarola* and of *Machiavelli;* and *The First Two Centuries of Florentine History* (1895).

VILLEHARDOUIN, GEOFFREY OF (about 1155-1213). A French chronicler; born near Troyes. His history of the conquest of Constantinople during the Fourth Crusade, in which he was prominent, is the earliest known history in French.

VILLON (*vee-lyon'*), **FRANCOIS** (1431-1484). The first and one of the greatest lyric French poets of the modern school. His writings are frank and form a highly colored but reliable picture of the time in which he lived, and include *Le petit testament, Le grand testament, a Codicille, Le jargon,* and a monologue, *Le franc archier de Bagnolet.*

VIZETELLY, FRANK HORACE (1864-). An Anglo-American author and lexicographer; born in London, England, and educated in England and France; managing editor of Funk and Wagnall's *Standard English Dictionary.*

VOLNEY, CONSTANTIN FRANCOIS CHASSEBOEUF COUNT DE (1757-1820). French writer of philosophy. His chief work is *Les ruines, ou méditations sur les révolutions des empires* (1791).

VOLTAIRE, FRANCOIS MARIE AROUET DE (1694-1778). A great French philosopher and man of letters; born in Paris; son of a lawyer; began his career as a satirist in the production of lampoons which cost him imprisonment in the Bastille. After a second imprisonment he left France in 1726 and went to England, where he stayed two years and got acquainted with the literary free-thinking society there. On his return to Paris he engaged in some profitable commercial speculations and published his *Charles XII.,* which he had written in England; retired to the Chateau of Cirey, where he lived 15 years with Madame du Châtelet, engaged in study and diligent with his pen; after her death made his famous visit to Frederick the Great, with whom he quarreled about three years later, and from whom he was glad to escape, making his headquarters eventually within the borders of France at Ferney; now and again visited Paris, where on his last visit he was received with such raptures of adulation that he was quite overcome, and had to be conveyed home, and died two months after. He was a man of superlative adroitness of faculty, of great clearness and wit as a writer, and more than any other the incarnation of the spirit of his time. [See Fr. Lit.].

WALLACE, LEWIS (1827-1905). An American military commander and author; born at Brookville, Ind. Practiced law in Indiana; governor of New Mexico (1878-1881); United States Minister to Turkey (1881-1885). His leisure moments were spent in writing, some of his works being *The Fair God* (1873), *Ben Hur* (1880), *The Prince of India* (1893), and *The Life of General Harrison* (1888).

WALLER, EDMUND (1606-1687). An English poet; born in Coleshill, Buckinghamshire; was educated at Eton and Cambridge; entered Parliament; detected in a royalist plot, was fined heavily and banished. Pardoned after seven years, he supported the commonwealth. Re-elected to Parliament (1661), he retained his seat until his death. In his poetry he reduced the "heroic" or rhymed pentameter verse to an art; is best known by his song *Go, lovely rose,* lines *On a Girdle,* and a few other perfect poems.

WALPOLE, HORACE, FOURTH EARL OF ORFORD (1717-1797). An English author; son of Sir Robert Walpole; born in London. After receiving an education at Eton and Cambridge he traveled in France and Italy. In 1741 he entered the House of Commons. In 1791 he succeeded his nephew in the peerage. He never took his seat in the House of Lords, and appears to have avoided using his title. The works of Horace Walpole are numerous; but his fame as a writer rests on his *Letters* and *Memoirs.* The former are held to be unsurpassed in the English language. His romance *The Castle of Otranto* is also well known.

WALTON, IZAAK (1593-1683). An English author; known as the father of angling; born in Stafford, England. Walton's fame is mainly based on his *Compleat Angler; or the Contemplative Man's Recreation,* first published in 1653. Few more popular books exist.

WARD, MRS. HUMPHRY, or **MARY AUGUSTA ARNOLD** (1851-). An English novelist; born in Hobart, Tasmania; is a niece of Matthew Arnold; translated Amiel's *Journal,* but is best known by her romance *Robert Elsmere.* She has written several later books, notably *Eleanor, Lady Rose's Daughter, The History of David Grieve, Marcella, The Story of Bessie Costrell, Sir George Tressady, Helbeck of Bannisdale,* and *Fenwick's Career.*

WARMAN, CY (1855-). An American journalist and author; born near Greenup, Ill.; wrote *Tales of an Engineer, The Express Messenger, Frontier Stories, The Story of the Railroad, The White Mail, Snow on the Headlight,* and *Short Rails.* Besides some popular verse, he wrote several songs, including the once popular *Sweet Marie.*

WARNER, CHARLES DUDLEY (1829-1900). An American editor and author; born in Plainfield, Mass.; was graduated from Hamilton College in 1851. He was the author of such well-known works as *Saunterings, Backlog Studies, Washington Irving, On Horseback,* and *Captain John Smith,* and editor of *A Library of the World's Best Literature.*

WARREN, SAMUEL (1807-1877). An English lawyer and author; member of Parliament; wrote *Ten Thousand a Year,* a novel which appeared in *Blackwood's Magazine* (1839) and has since gone through several editions. His collected works fill five volumes.

WATSON, JOHN, or **"IAN MACLAREN"** (1850-1907). Till 1893 Dr. Watson was known as a popular preacher and able minister, and in that year he acquired additional distinction and wider fame by writing a series of Scotch idyls for the *British Weekly,* under the title of *Beside the Bonnie Brier Bush.* They became widely popular in the United States and Great Britain. *The Days of Auld Lang Syne,* a second series of idyls, published in 1895, also reached a large circulation. A novel from Dr. Watson's pen, *Kate Carnegie and Those Ministers,* was published in 1896. *The Upper Room* and *The Life of the Master* are perhaps his best known religious works.

WATSON, WILLIAM (1858-). An English poet; born in Yorkshire. The first poem which procured him recognition was *Wordsworth's Grave.* Among his later productions the most important is a volume entitled *Odes and Other Poems;* has also written an admirable volume of essays, *Excursions in Criticism.*

WEBSTER, NOAH (1758-1843). An American lexicographer; born at Hartford, Conn.; bred to law; tried journalism; devoted 20 years to his *Dictionary of the English Language.*

WEYMAN (*way'man*), **STANLEY JOHN** (1855-). An English novelist. He was educated at Shrewsbury and Christ Church, Oxford. His first writings appeared in the *Cornhill Magazine* in 1883. Among his principal works are *The House of the Wolf, Francis Cludde, The New Rector, A Gentleman of France, Under the Red Robe, My Lady Rotha, The Red Cockade. From the Memoirs of a Minister of France, The Man in Black, Shrewsbury, The Castle Inn, Sophia,* and *In King's Byways.*

WHARTON, EDITH (JONES) (1862-). An American novelist; born in New York; wrote *The Greater Inclination, The Touchstone, Crucial Instances, The Valley of Decision, Sanctuary,* and *The House of Mirth.*

WHATELY, RICHARD (1787-1863). Archbishop of Dublin, and author; born in London. He did much to forward the cause of general education and to promote liberal views in the English church. Among his numerous works are *Historic Doubts Relative to Napoleon Bonaparte,* a burlesque aimed at the "destructive school" of criticism; *Essays on the Peculiarities of the*

Christian Religion. Elements of Logic, Elements of Rhetoric, Political Economy, Introduction to the Study of St. Paul's Epistles, English Synonyms, Rise, Progress, and Corruption of Christianity ; Miscellaneous Lectures and Reviews, and *Remains.*

WHITEING, RICHARD (1840-). An English novelist; born in London. As a journalist he wrote *Mr. Sprouts—His Opinions* for the London *Evening Star.* He was, later, a leader writer on several English dailies, including the London *Daily News;* wrote *The Democracy, The Island, No. 5 John Street, The Life of Paris,* and *The Yellow Van.*

WHITMAN, WALT (1819-1892). An American poet; born in West Hills, Long Island, N. Y.; became editor of the Brooklyn *Eagle. Leaves of Grass* and *Specimen Days and Collect* may be held to embrace the life work of Whitman as a writer. About the close of the war he received a subordinate clerkship under the government, and was summarily dismissed as the author of "an indecent book," though he fortunately obtained a similar post almost immediately. In 1874 he left Washington for Camden, N. J., where he resided till his death.

WHITNEY, WILLIAM DWIGHT (1827-1894). An American philologist and author; born at Northampton, Mass. He was graduated at Williams College in 1845 and studied three years in Germany. From 1854 he was professor of Sanskrit and from 1869 also of comparative philology in Yale College. As a Sanskrit scholar he has a European reputation.

WHITTIER, JOHN GREENLEAF (1807-1892). An American poet; born near Haverhill, Mass. The son of a poor farmer, who was also shoemaker, young Whittier obtained his education with that struggle which seems to foster genius, while the bodily frame, that so well served him till his decease, was developed and hardened by his healthy, outdoor life; was apprenticed to journalism. His poetry attracted the admiration of William Lloyd Garrison, who rode over from Newburyport to see Whittier when quite a lad, and became his lifelong friend. If Garrison may be called the preacher or prophet, Whittier must be wreathed the poet laureate, of abolition. Apart from this strenuous and heroic struggle there is nothing epoch making in Whittier's life, literary or personal. His chief poems are *Voices of Freedom, Snow Bound* (his best), *In War Times, The Tent on the Beach,* and *Poems of Nature.*

WIELAND, CHRISTOPH MARTIN (1733-1813). A German poet and novelist. His best work is a heroic poem entitled *Oberon.* He translated 22 of Shakespeare's plays and wrote *The Republic of Fools.* He is one of the most important of the writers in the classic period of German literature.

WILCOX, ELLA (WHEELER) (1855-). An American poet; born at Johnstown Center, Wis. She was educated at the University of Wisconsin. At an early age she began to write for newspapers and periodicals. She has published *Drops of Water, Maurine, Shells, Poems of Passion, Mal Moulée,* a novel; *Poems of Pleasure, A Double Life,* a novel; *How Salvator Won,* reciting poem; *Sweet Danger,* a novel; *Men, Women, and Emotion,* 45 chapters of advice to married folks; *Song of the Sandwich,* a comic poem, and *Was It Suicide?* a collection of stories.

WILDE, OSCAR FINGALL O'FLAHERTIE WILLS (1856-1900). A British poet; born at Dublin. He was the son of Sir William and Lady Wilde ("Speranza"). He was educated at Magdalen College, Oxford, where he took the Newdigate prize for English verse. He became known about 1881 as "the poet and apostle of æstheticism." In 1882 he came on a lecturing tour to the United States. He was for a time the manager of the *Woman's World* of London. He is the author of *Poems, The Happy Prince, and Other Tales; Dorian Gray,* a novel; and several plays, including *Lady Windermere's Fan* and *Salome.* He was imprisoned for two years (1895), during which he wrote *The Ballad of Reading Gaol.* After his release he wrote *De Profundis.*

WILKINS-FREEMAN, MARY ELEANOR (1862-). An American author; born in Randolph, Mass. Her works, studies of New England country life, are *The Adventures of Ann, A Humble Romance, A New England Nun, Young Lucretia, Jane Field, Giles Corey, Pembroke, Madelon, Jerome, A Poor Man; Silence and Other Stories, The Love of Parson Lord, Understudies, Portion of Labor, Wind in the Rose Bush.* She was married to Dr. Charles M. Freeman, January 1, 1902.

WILSON, AUGUSTA EVANS (1835-1909). An American author; born at Columbus, Ga. Her earlier novels were published under her maiden name of Evans. In 1868 she was married to L. M. Wilson of Mobile, Ala. Her novels include *Inez, Beulah, Macaria, St. Elmo, Vashti, Infelice, At the Mercy of Tiberius,* and *A Speckled Bird.*

WILSON, JOHN, or **"CHRISTOPHER NORTH"** (1785-1854). A Scottish writer; born in Paisley; son of a manufacturer, who left him a fortune of £50,000; lost his fortune and settled in Edinburgh, and wrote for *Blackwood's Magazine.* He wrote *Noctes Ambrosianæ,* full of humor and pathos, and his best work; *Lights and Shadows of Scottish Life, The Foresters,* and *The Trials of Margaret Lindsay.*

WISTER, OWEN (1860-). An American writer; born in Philadelphia, Pa.; wrote *The Modern Swiss Family Robinson, The Dragon of Wantley: His Tail; Red Man and White, Lin McLean, The Jimmyjohn Boss, U. S. Grant, a Biography; The Virginian, Oliver Wendell Holmes, Benjamin Franklin,* and, with G. B. Grinnell and Caspar Whitney, *The Bison, Musk-Ox, Sheep, and Goat Family.*

WOOD, ELLEN (PRICE) or **MRS. HENRY** (1820-1887). An English novelist; born in Worcestershire; her best novels, *The Channings* and *Mrs. Halliburton's Troubles,* though her most popular is *East Lynne.* She wrote some 30, all popular.

WOOLSEY, SARAH CHAUNCEY, or **"SUSAN COOLIDGE"** (1835-1905). An American writer of books for young people; born in Cleveland, Ohio; wrote *The New Year's Bargain, What Katy Did, Verses, A Guernsey Lily, Mischief's Thanksgiving, A Little Country Girl,* and *Ballads of Romance and History.*

WOOLSON, CONSTANCE FENIMORE (1848-1894). An American author; born in Claremont, N. H. She was the daughter of Charles Jarvis Woolson. From 1873 till 1878 she resided in Florida, Georgia, and the Carolinas, and in 1879 she went to Europe, where she afterwards resided. Her literary field includes sketches, poems, stories, and novels, which have appeared in *Harper's* and other magazines. Her books are *Castle Nowhere: Lake Country Sketches; Rodman the Keeper: Southern Sketches; Anne, For the Major, East Angels, Jupiter Lights, Two Women, The Old Stone House,* and *Horace Chase.*

WORCESTER, JOSEPH EMERSON (1784-1865). An eminent American lexicographer; author of the popular *Dictionary* bearing his name; born at Bedford, N. H. His was the first illustrated dictionary in English (1860).

WORDSWORTH, WILLIAM (1770-1850). An English poet; born in Cockermouth, Cumberland. He was the son of an attorney and in 1787 was sent to St. John's College, Cambridge. His best poems are *The Excursion,* odes on *Immortality* and to *Duty, The Prelude, Thanksgiving Ode,* and *White Doe of Rylstone.* [See Eng. Lit.]

YONGE, CHARLOTTE MARY (1823-1901). An English novelist; born in Otterbourne, Hampshire. Her works number more than 125 volumes, including *The Heir of Redclyffe, The Daisy Chain, The Dove in the Eagle's Nest, Forget-Me-Not, Catherine of Aragon and the Sources of the English Reformation, Life of Hannah More,* and *Life of the Prince Consort.*

YOUNG, EDWARD (1683-1765). An English poet; born at Upham, Hampshire; chaplain to the king (1728); wrote the famous *Night Thoughts on Life, Death, and Immortality.*

ZANGWILL, ISRAEL (1864-). An English-Jewish novelist; born in London. He began life as a London teacher; has written novels, essays, and poems; among his works are the *Bachelors' Club, Old Maids' Club, Children of the Ghetto, Dreamers of the Ghetto, The Master, Without Prejudice, The Grey Wig,* and *Merely Mary Ann.*

ZOLA, EMILE (1840-1902). A French novelist; born in Paris; the son of an Italian engineer. After working for Paris publishers and writing for the press he attempted fiction with success. During 1897 and 1898 he took up with splendid courage the cause of Captain Dreyfus, whom he declared to have been illegally condemned, and was in consequence of his action prosecuted by order of the French government and condemned to imprisonment. He escaped punishment by voluntary exile in England. Returning to Paris after the subsidence of the excitement caused by the Dreyfus case, he resumed his literary work; was accidentally killed by gas escaping from a coal fire.

ZSCHOKKE (*tshok'ke*), **JOHANN HEINRICH** (1771-1848). A German writer; born in Magdeburg; lived chiefly at Aarau, in Aargau, Switzerland, where he spent 40 years of his life and where he died; wrote histories and a series of tales, but is best known by his *Stunden der Andacht* or *Hours of Devotion.* His *Select Works* fill 40 volumes.

LITERARY PLOTS, CHARACTERS, AND ALLUSIONS.

AARON. A Moor, in Shakespeare's *Titus Andronicus*, whom Tamora, Queen of the Goths, loved. He is a hideous and unnatural character.

ABDALLA. (1) In Scott's *Ivanhoe*, a slave belonging to Bois-Guilbert. (2) A brother of Giaffer, killed by him, in Byron's *Bride of Abydos*. (3) Abdalla el Hadgi. A messenger sent by Saladin to the crusaders' camp in Scott's *Talisman*.

ABDALLAH. The father of Mohammed.

ABDIEL. In Milton's *Paradise Lost*, one of the seraphim who opposed Satan when he was trying to stir up a revolt among the angels.

ABENCERRAGES. A legendary Moorish race who struggled with the Zegris and were destroyed. This struggle forms the basis of Chateaubriand's novel, *Les aventures du dernier des Abencerages*.

ABONDE. The French Santa Claus.

A Born Gentleman. Dr. Samuel Johnson (1709-1784): "Adventitious accomplishments may be possessed by all ranks, but one may easily distinguish the born gentleman."

ABRAXAS. In Persian writings denotes a supreme being; in Greek, the number 365. In ancient romances Abraxas is supposed to preside over 365 virtues personified, one belonging to each day in the year. The Gnostic sect of Basilides used the term to represent the manifold revelations of the Supreme Being.

ABSOLUTE, SIR ANTHONY. A character in Sheridan's comedy, *The Rivals*. He is an irritable and overbearing person, yet warm-hearted.

A burglar of others' intellects. Benjamin Disraeli (Earl of Beaconsfield) (1804-1881): In a speech in the House of Commons, May 15, 1846, referring to Sir Robert Peel.

ACADIA. The original name of Nova Scotia, said to be derived from "Shubenacadie," one of its principal rivers, is now usually applied to that portion made famous by Longfellow's poem, *Evangeline*.

ACHATES. Usually called "fidus Achates," the devoted companion of Aeneas, in the *Aeneid*. In literature it is synonymous with "faithful friend."

ACRASIA. Intemperance personified, represented by Spenser, in his *Faerie Queene*, as a beautiful woman living on an island, and luring men to destruction in her enticing palace, the Bower of Bliss.

ACRES, BOB. In Sheridan's comedy, *The Rivals*, a country gentleman, who wished to be thought a man of fashion. He is noted for his blustering and his cowardice.

A Crowning Mercy. Oliver Cromwell (1599-1658): In a dispatch, dated September 4, 1561, announcing the preceding day's victory at Worcester: "The dimensions of this mercy are above my thoughts. It is, for aught I know, a crowning mercy."

ACTA DIURNA. The ancient Roman substitute for a daily paper. A written sheet containing an account of events; it was posted daily by the government in some public place for all to read, until 476.

Actors speak of things imaginary as if they were real, while you preachers too often speak of things real as if they were imaginary. Thomas Betterton (1635-1710): In reply to the Archbishop of Canterbury, who asked why actors were more successful than preachers in impressing their auditors.

ADAM. (1) Formerly a nickname for a sergeant or bailiff. (2) A character frequently mentioned in the Talmud. (3) A servant of Oliver and of Orlando in Shakespeare's *As You Like It*. (4) An officer in Shakespeare's *Comedy of Errors*.

ADAMASTOR. A frightful specter, the spirit of the Cape of Good Hope, described in the *Lusiad* by Camoëns, as predicting misfortune to all who shall follow the fleet of Vasco da Gama in similar expeditions to India.

ADAM BEDE. A story by George Eliot, homely in its incidents, masterly in its unfoldment of character. Adam Bede, the village carpenter, loves in his simple, manly way Hetty Sorrel, the pretty dairymaid, who has been brought up by her aunt, the inimitable Mrs. Poyser. Hetty is betrayed by Arthur Donnithorne, the son of the squire, and is condemned to death for child-murder, but is finally transported. Dinah Morris, a noble woman who has risen from the factory to a Methodist pulpit, comforts the unfortunate Hetty, and this solicitude endears her to Adam, whom she ultimately marries.

ADAMS, PARSON. An eccentric curate pictured by Fielding, in his *Joseph Andrews*, as good-hearted and learned, but ignorant of the ways of the world.

A delusion, a mockery, and a snare. Lord Denman (1779-1854): In giving judgment in the case of O'Connell and others *vs.* the Queen, in the House of Lords, September 4, 1844.

ADEMAR or ADEMARO. A warrior in Tasso's *Jerusalem Delivered*, who, having begged the pope to send him on the Crusades, was killed at Antioch; afterwards his spirit came to the aid of the besiegers at Jerusalem, with legions of angels.

Adieu, chère France! Je ne vous verrai jamais plus! (Adieu, dear France! I shall never see you more!) Farewell of Mary Stuart (1542-1587) to France. The lines—

> "Adieu, plaisant pays de France.
> O ma patrie
> La plus chérie!" etc.,

at one time attributed to her, were written by a journalist, G. Meusnier de Querlon (1702-1780), who published them as hers in 1765.

ADONAIS. A name coined by Shelley, and, in his elegy on the untimely death of Keats, applied by him to that poet, suggesting an analogy between the fate of Keats and that of Adonis.

ADRASTUS. An Indian Prince in the *Jerusalem Delivered* of Tasso, who aided the king of Egypt against the crusaders, and was killed by Rinaldo, being known by his garment, a serpent's skin.

AENEID. Vergil's Latin epic poem in twelve books founded on the traditional settlement of Italy by Aeneas and his Trojan followers who became the founders of the Roman state. It was written to glorify Rome and the Julian family.

AGAPIDA, FRAY ANTONIO. An imaginary monk, from whose chronicles Washington Irving pretended to obtain his material for the *Conquest of Granada*.

A Gentleman of the Press. Benjamin Disraeli (Earl of Beaconsfield) (1804-1881) thus styled himself in a speech in the House of Commons, on England's relations with France, February 18, 1853.

Age of Prose and Reason. The term applied by Matthew Arnold in his *Essays on Criticism* to the eighteenth century of English.

AGIB. The third Calendar in the story of "The Three Calendars" in the *Arabian Nights*.

AGNES. A young girl in Molière's *L'Ecole des Femmes*, whose guardian attempts to bring her up without any worldly knowledge. She proves less ingenuous than he had supposed.

AGRAMANTE or AGRAMANT. King of the Moors in Ariosto's *Orlando Furioso*.

AGUE-CHEEK, SIR ANDREW. A silly, stupid old fop in Shakespeare's *Twelfth Night*.

AHRIMAN. Considered by the ancient Persians the personification of the principle of evil.

A kiss from my mother made me a painter. Benjamin West (1738-1820).

AL ARAF. In the Mohammedan belief, a place where dwell people whose good and evil deeds are equal.

ALADDIN. Aladdin, the son of a poor widow in China, obtains a magic lamp and a magic ring. Accidentally rubbing the lamp, a genie appears who helps Aladdin to marry the Sultan's daughter, to build a magnificent palace, and to enjoy every luxury that untold wealth could give. He loses the lamp and his palace, princess, and all are transported to Africa. Then the genie of the ring appears and helps him to regain the lamp, whose power restores his possessions. (See also FATIMA.)

AL BORAK. A fabulous animal, on which the Koran represents Mohammed as performing a journey to the seventh heaven under the guidance of the angel Gabriel. This steed was of a milk white color, had glittering wings, and a human face, but the cheeks of a horse.

ALBRACCA. Boiardo's *Orlando Innamorato*. A castle in which Angelica (having retired in sorrow because of Rinaldo's indifference) is besieged by Agricane, king of Tatary, who is intent upon winning her, in spite of her refusals of his suit.

ALCESTE. The hero of Molière's comedy *Le Misanthrope*.

ALCINA. An enchantress mentioned in Boiardo's *Orlando Innamorato*, and in Ariosto's *Orlando Furioso*.

ALDA or ALDABELLA. The name by which the wife of Orlando and sister of Oliviero was known in Ariosto's *Orlando Furioso*.

ALDINE EDITION. A name now used to designate some elegant editions of English works. The originals were from the press of Aldus Manutius and are rare and highly prized. They are distinguished by an anchor entwined with a dolphin. The number of books issued was 908.

ALDINGAR, SIR. The title of a ballad in Percy's *Reliques*. Sir Aldingar, having impeached the honor of Eleanor, wife of Henry II. of England, submitted to combat, but an angel in the form of a child appeared and established her innocence.

ALEXANDRIAN CODEX. A manuscript of the Scriptures in Greek, now in the British Museum, supposed to have been written in Alexandria in the fifth century. It contains on parchment the Septuagint version (except the Psalms), a part of the New Testament, and the epistles of Clemens Romanus.

ALHAMBRA. The ancient Moorish palace in Granada, Spain, described by Washington Irving in his book called *The Alhambra*.

ALI BABA. A character in "The Forty Thieves," in the *Arabian Nights*, who overhears the magic words, "Open, Sesame," which give him entrance to the robbers' cave.

A l'Immortalité (To immortality). Motto of the French Academy, established under Richelieu in 1635. Hence the surname of "Immortels" applied to the members (40 in number).

ALLAN-A-DALE. The hero of an old ballad, whose betrothed is about to be wedded against her will to an old knight when Robin Hood and his men appear, and she marries Allan-a-Dale. In Scott's *Ivanhoe*, he is Robin Hood's minstrel.

All free governments are party governments. President J. A. Garfield (1831-1881): In an address on the death of O. P. Morton. He wrote also, "All free governments are managed by the combined wisdom and folly of the people"—in a private letter from him, dated April 21, 1880.

ALL 'S WELL THAT ENDS WELL. A comedy by Shakespeare, who took the plot from a translation of a story in Boccaccio's *Decameron*. As a reward for curing the king of France of a disease, Helena, a physician's daughter, is married to Bertram, Count of Roussillon. Bertram, who thinks himself superior to Helena, flees to Florence, but Helena finally wins his love.

All that is valuable in the United States Constitution is one thousand years old. Wendell Phillips (1811-1884): In a speech at Boston, Mass., February 17, 1861.

ALLWORTHY, SQUIRE. The foster father of Tom, in Fielding's *Tom Jones*, whose character was drawn from Fielding's friend, Ralph Allen.

ALMIGHTY DOLLAR. The supposed object of American worship personified. Washington Irving originated the phrase in *The Creole Village*.

ALPH. A river whose name was invented by Coleridge in his *Kubla Khan*.

ALQUIFE. A powerful wizard, who figures in the mediaeval stories of Amadis of Gaul.

AL RAKIM. The dog that guarded the "Seven Sleepers." Mohammedans consider him the keeper of letters in Paradise.

ALSIRAT. In the Mohammedan belief, a bridge narrower than the thread of a famished spider, extending from this world to Paradise over the abyss of hell. Those laden with sin fall from the bridge into the abyss.

AMADIS OF GAUL. The hero of a celebrated prose romance of chivalry, consisting of about thirty books, called in France *Le Roman des Romans*, the first four books of which are supposed to have been written by Vasco de Lobeira of Portugal, in the fourteenth century, the others being added by Spanish and French writers. There is an English translation of Amadis de Gaul, by Southey.

AMAIMON or **AMAYMON.** The ruler of one of the four provinces of the imaginary world of devils. He is mentioned in Shakespeare's *Henry IV.* and in *Merry Wives of Windsor*.

AMANDA. A character in Thomson's *Seasons* really intended for a Miss Young, and representing spring.

A man's best gift to his country—his life's blood. President William McKinley (1843-1901):—in a speech at San Francisco, May 23, 1901.

AMARYLLIS. A shepherdess or rustic beauty in the *Idyls* of Theocritus and the *Eclogues* of Vergil, mentioned also in Milton's *Lycidas*, and Spenser's *Colin Clout 's Come Home Again*.

AMELIA. The heroine of Fielding's novel of that name, considered by Dr. Johnson and Thackeray as the most pleasing character in English fiction. She is thought to be the portrait of Fielding's wife.

Am I not a man and a brother? Josiah Wedgwood (1730-1795): inscription on a medal (1768) representing a negro in chains, in a supplicating posture. Adopted as a seal by the Anti-Slavery Society of London.

AMINTE. A name assumed by a sentimental woman in Molière's comedy, *Les Précieuses Ridicules*, who dismisses her lover for proposing to marry her, scolds her uncle for not having the air of a gentleman, and finally marries a pretended nobleman who is really a valet.

AMORET. (1) In Spenser's *Faerie Queene*, the type of devoted affection. In spite of her imprisonment by an enchanter, she will not give up her love for Sir Scudamore, afterward her husband. (2) The heroine of Fletcher's pastoral drama, *The Faithful Shepherdess*.

AMYS AND AMYLION. The title of an ancient romance (of which an abstract is found in Ellis's *Specimens of Early English Metrical Romances*), and the names of two faithful friends,—the Damon and Pythias of feudal times.

ANCIENT MARINER. The hero of the *Rime of the Ancient Mariner*, a poem by Samuel Taylor Coleridge. The mariner, having shot an albatross, is made to undergo terrible penalties on the voyage. On his repentance, he is forgiven, but at times is driven by conscience to wander from land to land relating the story of his crime and its punishment, as a lesson of kindness to all created things.

Ancora Imparo! (I am still learning!) Inscription accompanying a favorite device of Michelangelo (1474-1563) of an old man in a go-cart, with an hourglass upon it.

ANDREWS, JOSEPH. The hero of a story of the same name by Fielding, written to ridicule Richardson's *Pamela*.

ANDROMAQUE. A tragedy, by Racine, founded on the story of Hector's wife, Andromache.

ANGELICA. In Boiardo's *Orlando Innamorato*, and Ariosto's *Orlando Furioso*.

ANGELIQUE. The name of a character in two of Molière's comedies—the heroine in *Le Malade Imaginaire*, and the wife of George Dandin in the comedy of that name.

ANGELO. The duke's deputy, and Mariana's betrothed, in Shakespeare's *Measure for Measure*.

ANNE OF GEIERSTEIN. The heroine of a story of the fifteenth century by Sir Walter Scott.

ANNUS MIRABILIS. The year of wonders, 1666; the English naval victories over the Dutch, the plague, and the great fire being the most notable. Dryden wrote a famous poem of the same name.

ANTIGONUS. See PAULINA.

ANTONIO. The name of several characters in Shakespeare. (1) In *Merchant of Venice*, the merchant who nearly loses his life because of Shylock's hatred. (2) In *Two Gentlemen of Verona*, the father of Proteus. (3) In *Twelfth Night*, a sea captain who saves the wrecked Sebastian. (4) In *The Tempest*, the usurping duke of Milan, and uncle of Miranda. (5) In *Much Ado About Nothing*, the brother of Leonato.

ANTONY AND CLEOPATRA. A historical tragedy in five acts, by Shakespeare, portraying the love of Mark Antony, the Roman triumvir, for Cleopatra, the fascinating queen of Egypt, and their death.

AONIAN MOUNT. An appellation of Mt. Helicon in Greece, the haunt of the Muses. Mentioned in the opening of Milton's *Paradise Lost*.

APEMANTUS. A cynical character in Shakespeare's *Timon of Athens*.

A precedent embalms a principle. Benjamin Disraeli (Earl of Beaconsfield) (1804-1881): In a speech in the House of Commons on the expenditure of the country, February 22, 1848.

Après nous le déluge! (After us the deluge!) Mme. de Pompadour (1721-1764) to Louis XV. after the battle of Rossbach (1757), to console the king. *A qui bon vous tourmenter et vous rendre malade? Après nous le déluge!* (What is the use of worrying and making yourself ill? After us the deluge!)

ARCHIMAGO. A wizard in Spenser's *Faerie Queene* who can assume any form he chooses. He deceives Una, and also the Red Cross Knight, but his deceit is finally exposed.

ARCITE. See PALAMON AND ARCITE.

ARDEN, ENOCH. In Tennyson's poem of that name, a sailor who is wrecked on a desert island. On his return home, after many years, finding his wife (who believed him dead) happily married to his old friend and rival he goes away without revealing his identity and dies broken-hearted.

ARGALUS. The unhappy lover of Parthenia in Sidney's *Arcadia*.

ARGAN. The hypochondriac hero of Molière's comedy *Le Malade Imaginaire*, who loves to take medicine, but dislikes to spend his money for it.

ARIEL. (1) In the demonology of the Kabbala, a water sprite. (2) In mediaeval fables, a spirit of the air. (3) In Shakespeare's *Tempest*, a tricksy spirit, the servant of Prospero, able to assume any form or to make himself invisible. (4) In Milton's *Paradise Lost*, one of the rebellious angels. (5) In Pope's *Rape of the Lock*, a fairy, guardian of Belinda.

ARIODANTES. The lover of Ginevra in Ariosto's *Orlando Furioso*.

ARMIDA. In Tasso's *Jerusalem Delivered*, a beautiful enchantress, who lures the Crusaders, Rinaldo among them, away from their duty to her Bower of Bliss, but her enchantment is overcome by a talisman, and she is converted to Christianity by Rinaldo, who becomes her knight.

ARONDIGHT. The sword of Sir Lancelot, the strongest and bravest of the Knights of the Round Table.

ARSINOE. An ugly old woman, who is a hypocrite and a mischief maker, in Molière's comedy *Le Misanthrope*.

ARTEGAL. (1) A knight in Spenser's *Faerie Queene*, who is the personification of justice, and is loved by Britomart. (2) The hero of Wordsworth's poem, *Artegal and Elidure*, based on the *Chronicle of Geoffrey of Monmouth* and on Milton's *History of Britain*. He is a legendary king of Britain, who was driven into exile, but was finally restored to the crown.

ARTFUL DODGER. In Dickens's *Oliver Twist*, the nickname of John Dawkins, a youthful pickpocket whose expertness earned the name.

ARTHURIAN ROMANCES, THE. A series of romances, having for their principal theme the deeds of Arthur, legendary king of Britain, and his knights of the Round Table: San Graal, The Merlin, The Lancelot, The Quest of the San Graal, Morte d'Arthur, and Sundry Tales, especially the adventures of Sir Tristan. They were first collected by Geoffrey of Monmouth, to which Walter Mapes added the "Romance of the Death of Arthur." Sir Thomas Malory's *La Morte d'Arthur* was one of the earliest ones printed by Caxton. Tennyson's *Idylls of the King* is the most modern version.

ARTHUR'S DRINKING HORN. One who would drink from this horn must be faithful and pure.

ARUNDEL. The favorite steed of Sir Bevis of Southampton, in Drayton's *Polyolbion*, given him by his wife, Josian.

ARVIRAGUS. In Shakespeare's *Cymbeline*, a son of Cymbeline, called Cadwal, supposed to be a son of Belarius.

ASCAPART. A giant whose effigy is to be seen on the city gates of Southampton. In the old romances, he is said to have been thirty feet high, and to have carried Sir Bevis, his wife, and horse under his arm, though finally conquered by Sir Bevis. Shakespeare, Drayton, and other Elizabethan writers allude to him.

ASMODEUS. Called in the Talmud "the king of devils," a demon of vanity. In Le Sage's *The Devil on Two Sticks*, occurs Asmodeus's flight. In the book of Tobit, he causes the death of Sara's seven successive husbands. Milton calls him Asmodai or Asmadai, one of the rebel angels.

ASPATIA. In *The Maid's Tragedy*, by Beaumont and Fletcher, the unhappy heroine, affianced to Amintor, who forsakes her for Evadne.

Assassination has never changed the history of the world. Benjamin Disraeli (Earl of Beaconsfield), (1804-1881): In a speech in the House of Commons, May, 1865, on the death of President Lincoln (1809-1865), who was assassinated on April 15.

ASTOLAT. The town of Guildford in Surrey in the *Arthurian Romances*. Elaine is called the "lily maid of Astolat," in Tennyson's *Idylls of the King*.

ASTOLPHO. Represented to be a cousin of Orlando in the romantic tales of Charlemagne and his court, a great boaster. In Ariosto's *Orlando Furioso*, he cures Orlando of insanity by bringing his wits back from the moon in a vial. He possesses a wonderful book giving any information he wishes for, and a magic horn which frightens men and beasts.

AS YOU LIKE IT. A comedy by Shakespeare. A feudal duke of France, deposed by his brother Frederick, goes with a few followers to live in the forest of Arden, leaving his daughter, Rosalind, at the usurper's court as a companion to Celia, her cousin. Falling in love with Orlando, an enemy of Duke Frederick, Rosalind is banished from court. Dressed as a youth, she goes to the forest of Arden, accompanied by Celia, disguised as a shepherdess. Orlando, ill-treated by his brother Oliver, also betakes himself to the forest, where he meets the maidens. The play ends with the marriage of Rosalind to Orlando and of Celia to Oliver, and the restoration of the banished duke.

ATALA. The heroine of a romance of that name by Chateaubriand, the scene being laid in North America. Atala, an Indian girl brought up as a Christian, falls in love with Chactas, chief of another tribe, a prisoner. She rescues him and flies with him, but, faithful to her resolves to become a nun, poisons herself in despair.

ATALANTA IN CALYDON. A tragedy by Algernon Charles Swinburne, founded on the classical story of the Calydonian Hunt.

ATALIDE. See BAJAZET.

ATHALIE. One of Rachel's greatest roles in Racine's tragedy of that name. Athaliah, daughter of Ahab and Jezebel, seized the throne of Judah, and was put to death.

ATKINS, TOMMY. A term applied to the British soldier.

ATLANTES. An enchanter who becomes the tutor of Rogero, in Boiardo's *Orlando Innamorato*, and Ariosto's *Orlando Furioso*.

ATLANTIS, THE NEW. In an allegory of that name by Lord Bacon, an island in the middle of the Atlantic, where there was an association for the study of natural science.

ATTICUS. The most finished scholar of the Romans. (1) A poetical name given by Pope to Addison in his *Prologue to the Satires*. (2) A name given by Lord Chesterfield to George Faulkner in his series of ironical letters under this title. (3) A name for Reginald Heber, in Dibdin's *Bibliomania*. By the Romans the name was applied to any one distinguished for learning.

AUBURN. Under this name Goldsmith in his poem *The Deserted Village* has immortalized his native village, Lissoy, in Ireland.

AUDREY. An awkward country wench, in Shakespeare's *As You Like It*, who jilts William for Touchstone.

AULD ROBIN GRAY. A ballad whose author, Lady Anne Lindsay, concealed her authorship for over forty years.

AURORA LEIGH. A narrative poem by Elizabeth Barrett Browning. Aurora, an orphan sent from Italy to live with an aunt in England, loves Romney Leigh, a social reformer, but will not marry him until he loses his eyesight and needs her.

AUTOLYCUS. A witty peddler in Shakespeare's *Winter's Tale*.

Autorität, nicht Majorität (Authority, not majority): F. J. Stahl (1802-1861) at the 11th sitting of the Volkshause of the Erfurt Parliament, April 11, 1850.

AVALON or **AVILION.** In Celtic lore, the fabled land of the blessed, where heroes lived after death. In mediaeval romance, the name of a castle, and of the island on which it stood, where lived Arthur, Oberon, and Morgaine la Fée. In Tennyson's *Passing of Arthur*, the burial place of King Arthur. Glastonbury is supposed to be the place so designated.

AVARE, L'. One of Molière's comedies, based on the *Aulularia* of Plautus. A miser, Harpagon, and his son are both in love with Mariane, but when the son digs up a pot of gold which his father had lost, and gives him the choice between Mariane and the gold, Harpagon chooses the gold. Another father and son are also rivals for the hand of the miser's daughter.

AYMER, PRIOR. In Scott's *Ivanhoe*, the jovial and worldly monk at the head of Jorvaulx Abbey.

AYMON. The duke of Dordona, father of Rinaldo, Guicciardo Alardo, and Ricciardetto, who figure in various Italian and French romances and poems, among which are Tasso's *Jerusalem Delivered*, Boiardo's *Orlando Innamorato*, and Ariosto's *Orlando Furioso*.

AZAZEL. Milton, in *Paradise Lost*, makes him the standard bearer of Satan's host. Arabic writers say that he is one of the genii who lived on the earth before man, and who, refusing to bow down to Adam, was changed to a devil, named Eblis, and cast out.

AZRAEL. In Mohammedan and Jewish writings, the angel of death.

BAB BALLADS. A book of comic ballads by William S. Gilbert.

BAB, LADY. A servant in Townley's farce comedy, *High Life Below Stairs*, who so apes her mistress, Lady Bab, that she is called Lady Bab by the servants.

BAILLIE, HARRY. The jovial landlord of the Tabard Inn, in Chaucer's *Canterbury Tales*, where the pilgrims assemble, and who proposes the telling of stories.

Baiser Lamourette (Lamourette kiss). Saying used to express a short-lived reconciliation, derived from

the impression made by a speech of the Abbé Adrien Lamourette (1742-1794), July 7, 1792, causing political opponents to embrace each other. Three days after, however, the opposing parties were as great enemies as ever.

BAJAZET. The hero of Racine's tragedy of that name; the brother of the sultan, who is obliged to choose between the throne with Roxane and death with Atalide, the maiden of his choice.

BALDWIN. (1) In Tasso's *Jerusalem Delivered*, the duke of Bologna, brother of Godfrey of Bouillon. (2) A character in Scott's *Count Robert of Paris*. (3) The name of the ass in *Reynard the Fox*.

BALIN AND BALAN. Two brothers in the *Idylls of the King*, renowned for prowess, who fought and killed each other by mistake.

BALISARDA. An enchanted sword, in *Orlando Furioso*, which would cut through enchanted substances.

BALTHAZAR. (1) A merchant in Shakespeare's *Comedy of Errors*. (2) A servant of Don Pedro in *Much Ado About Nothing*. (3) A name assumed by Portia as a "doctor of law" in *Merchant of Venice*. (4) Servant, in *Romeo and Juliet*. (5) One of the three magi who came to worship the Christ-child. (6) A character in Gen. Lew Wallace's *Ben-Hur*.

BARBER'S POLE. The spiral red stripe on a barber's pole is said to symbolize the winding of a ribbon or bandage around the arm of a patient upon whom the barber had operated in the capacity of surgeon. In former times, when the operation of bleeding was extensively practised, blood-letting formed a part of the duties of a barber.

BARBIER DE SEVILLE, LE. A comedy by Beaumarchais. The barber of Seville, Figaro, assists Count Almaviva to outwit Dr. Bartholo, who wishes to marry his ward, Rosine.

BARDELL, MRS. The landlady of Mr. Pickwick, in Dickens's *Pickwick Papers*, who brings against Mr. Pickwick a ridiculous suit for breach of promise of marriage.

BARKIS. In Dickens's *David Copperfield*, a bashful carrier, who proposes to Clara Peggotty, by sending the message, "Barkis is willin'."

BARMECIDE'S FEAST, THE. Any tantalizing illusion, derived from the famous feast in *Arabian Nights*.

BAS BLEU. A blue-stocking; a name formerly applied to a woman who assumed to be learned or to write for publication. The term originated from certain literary societies of Venice in the fifteenth century, in which the members of both sexes wore blue stockings. It appeared in Paris in 1590 and in England in 1790, where it continued till 1840.

BASILE. A bigot, slanderer, and miser in Beaumarchais's *Le Barbier de Seville* and the other comedies of the trilogy.

BASILISCO. A foolish knight and braggart, in an old play, named *Solomon and Perseda*, so popular that his name became proverbial.

BASSANIO. See MERCHANT OF VENICE.

BAVIECA. The Cid's horse, which no one was allowed to mount after the death of the Cid.

BAYARD. (1) The Boiardo of *Orlando Innamorato* and *Jerusalem Delivered*, a wonderful horse said to have been given by Charlemagne to the four sons of Aymon, all of whom Bayard could carry at once, at enormous speed, by lengthening his body. (2) A horse formerly belonging to Amadis de Gaul, and rescued from a dragon's cave by Rinaldo's cousin, a wizard knight, and given to Rinaldo, as told in the old romances. (3) The name of Fitz-James's "gallant steed" in Scott's *Lady of the Lake*.

BEATRICE. (1) The name of Dante's friend, who in his *Divina Commedia* guides him through Paradise. (2) The heroine of Shakespeare's *Much Ado About Nothing*.

BEATRICE CENCI. Subject of a tragedy, *The Cenci*, by Shelley. The account accepted for years was that Beatrice, the beautiful young daughter of a Roman nobleman of the sixteenth century, was accused of helping to murder her brutal father, and that, protesting her innocence, she was executed. Later researches throw considerable doubt upon the story.

BEATRIX. Beatrix Esmond, daughter of Lord Castlewood, in Thackeray's *Henry Esmond;* a heartless beauty who nearly spoils Henry Esmond's life.

BEAUTY AND THE BEAST. A celebrated fairy tale from the French of Madame Villeneuve.

BEDIVERE, SIR. "First made and latest left of all knights" of the Round Table.

BELARIUS. An exiled noble, disguised under the name of Morgan, in Shakespeare's *Cymbeline*.

BELCH, SIR TOBY. In Shakespeare's *Twelfth Night*, the reckless, jolly uncle of Olivia.

BELINDA. (1) The name given in Pope's *Rape of the Lock* to Arabella Fermor, from whose head Lord Petre cut a lock of hair in jest. This was the cause of such a coolness between the two families that Pope wrote his poem in the attempt to reconcile them. (2) One of the two heroines in Miss Edgeworth's *Belinda*.

BELL, ADAM. The hero of several old ballads, a famous outlaw and archer, who lived before Robin Hood's time.

BELLE DAME SANS MERCI, LA ("The Fair Lady without Mercy"). (1) The subject of a poem by Alain Chartier. (2) The title of a poem by John Keats.

BELL-MAN. The watchman in Milton's *L'Allegro*, who repeated bits of religious poetry, to ward off evil, as he went his rounds and called the hours.

BELLS, THE. (1) Poem by Edgar Allan Poe. (2) Poem by Thomas Bailey Aldrich. (3) A play founded on Erckmann-Chatrian's *The Polish Jew*.

BELPHOEBE. The twin sister of Amoret in Spenser's *Faerie Queene*, a character intended to represent Elizabeth the woman, as Gloriana represented Elizabeth the queen.

BENEDICK. In Shakespeare's *Much Ado About Nothing*, a witty young nobleman of Padua, who has vowed to live a single life, but, after a courtship which is a war of wits, finally marries Beatrice. The name is often applied to a newly-married man, and is usually written Benedict.

BENVOLIO. An irritable, quarrelsome man, Montague's nephew and Romeo's friend, in Shakespeare's *Romeo and Juliet*.

BEOWULF. An Anglo-Saxon epic poem of the sixth century. Beowulf, a Gothic warrior, slew the terrible monster, Grendel. In the first combat he caused the monster to flee, in the second he killed the mother of Grendel, and finally destroyed Grendel with the aid of a magic sword which appeared on the waves.

BERTRAM. (1) See ALL 'S WELL THAT ENDS WELL. (2) The surname of a family in Scott's *Guy Mannering*. (3) A conspirator against Venice who divulges the plot in Byron's *Marino Faliero*. (4) A minstrel in Scott's *Castle Dangerous*. (5) Count Bertram, an outlaw and chief of a band of robbers, in Maturin's tragedy, *Bertram*. It was one of Kean's favorite roles.

BIANCA. (1) Cassio's lady-love in Shakespeare's *Othello*. (2) The sister of Kate in *The Taming of the Shrew*, who marries Lucentio. (3) In Milman's tragedy *Fazio*.

BIRON. A jovial nobleman in the suite of the king of Navarre in Shakespeare's *Love's Labour's Lost*.

BLACKEYED SUSAN. Sweetheart of William the mariner in Gay's ballad, *Sweet William's Farewell to Blackeyed Susan;* one of Dibdin's sea songs.

BLACK KNIGHT, THE. A term given to several characters of romance. (1) In the *Arthurian Romances*, one of the four knights, Sir Pereas, who guarded Castle Perilous. (2) In *Amadis of Gaul*, the son of Amadis and Oriana. (3) In Scott's *Ivanhoe*, Richard Coeur de Lion in disguise.

BLATANT BEAST, THE. The personification of slander, a horrible being, with a hundred tongues and a sting, in Spenser's *Faerie Queene*, "The Voice of the People."

BLEAK HOUSE. A novel by Charles Dickens, the purpose of which was to show the defects in the English Court of Chancery, two of the characters, Ada Clare and Richard Carstone, being wards in Chancery in the famous case of Jarndyce *vs.* Jarndyce. The story is named from Bleak House at Broadstairs, on the coast of Kent.

BLESSED DAMOZEL, THE. A poem by Dante Gabriel Rossetti, setting forth in beautiful phrase the love and longing for the beloved left on earth by one who has reached heaven.

Bloated Armaments. Benjamin Disraeli (Earl of Beaconsfield), in a speech (1862) during the American Civil War. He advocated "putting an end to these bloated armaments which naturally involve states in financial embarrassment."

BLOWZALINDA. A country maiden in Gay's pastoral, *The Shepherd's Week*.

BLUEBEARD. The chief character in Perrault's fairy tale, *La Barbe Bleue*, who marries Fatima.

BLUE KNIGHT, THE. Sir Persaunt of India, one of the four brothers who defended Castle Perilous; in the *Arthurian Romances*, Tennyson calls him "Phosphorus."

BLUE LAWS. A term first used in the eighteenth century to designate certain enactments of extreme Puritanism, which were supposed to have been enforced in the New Haven Colony in Connecticut. Among these laws were the following: (1) The governor and mag-

istrates convened in general assembly are the supreme power, under God, of the independent dominion. From the determination of the assembly no appeal shall be made. (2) No one shall be a freedman or have a vote unless he is converted and a member of one of the churches allowed in the dominion. (3) Each freeman shall swear by the blessed God to bear true allegiance to this dominion and that Jesus is the only king. (4) No dissenter from the essential worship of this dominion shall be allowed to give a vote for electing magistrates or any officer. (5) No food or lodging shall be offered to a heretic. (6) No one shall cross a river on the Sabbath but authorized clergymen. (7) No one shall travel, cook victuals, make beds, sweep houses, cut hair, or shave on the Sabbath Day. (8) No one shall kiss his or her children on the Sabbath or feasting days. (9) The Sabbath Day shall begin at sunset Saturday. (10) Whoever wears clothes trimmed with gold, silver, or bone lace above one shilling per yard shall be presented by the grand jurors and the selectmen shall tax the estate £300. (11) Whoever brings cards or dice into the dominion shall pay a fine of £5. (12) No one shall eat mince pies, dance, play cards, or play any instrument of music except the drum, trumpet, or jewsharp. (13) No gospel minister shall join people in marriage. The magistrate may join them, as he may do it with less scandal to Christ's Church. (14) When parents refuse their children convenient marriages, the magistrate shall determine the point. (15) A man who strikes his wife shall be fined £10. (16) A woman who strikes her husband shall be punished as the law directs. (17) No man shall court a maid in person or by letter without obtaining the consent of her parents; £5 penalty for the first offense; £10 for the second, and for the third, imprisonment during the pleasure of the court.

BOBADIL, CAPTAIN. In Ben Jonson's *Every Man in His Humor*, a braggart who passes himself off as a hero.

BOIS-GUILBERT, BRIAN DE. The haughty and wicked Templar and Crusader in Scott's *Ivanhoe*, who was an adherent of Prince John and a defender of Front de Boeuf's castle.

BOLUS, DR. A would-be literary apothecary, in a poem, *The Newcastle Apothecary*, by George Colman the Younger; he wrote his prescriptions in rhyme, the best known being "When taken, To be well shaken," which resulted in the patient being shaken to death by his servant.

BONIFACE. The well-fed, jovial landlord of the Lichfield Inn, Farquhar's *The Beaux' Stratagem*, whose name has become a synonym for innkeeper.

BONNIVARD, FRANCOIS DE. See CHILLON, PRISONER OF.

BOTTOM, NICK. In Shakespeare's *Midsummer Night's Dream*, an ignorant, conceited, but good-natured and witty weaver, who wears the ass's head as Pyramus in the interlude *Pyramus and Thisbe*, which forms a part of the comedy.

BOUNTIFUL, LADY. A kind-hearted, philanthropic woman, who is always trying to make people happier, in Farquhar's comedy, *The Beaux' Stratagem*.

BOURGEOIS GENTILHOMME, LE. A comedy by Molière. The hero, Mr. Jourdain, a tradesman, tries to imitate the manners, learning, and dissolute life of a man of quality, and to marry his daughter, Lucile, to a title.

BOWER OF BLISS. (1) In Tasso's *Jerusalem Delivered*, Armida's beautiful pleasure garden. (2) In Spenser's *Faerie Queene*, the witch Acrasia's home on a floating island.

BOWLING, TOM. A celebrated naval character in Smollett's *Roderick Random*.

BRADWARDINE, BARON. A character in Scott's *Waverley*, chivalrous, but delighting to display his learning.

BRAG, JACK. (1) The hero of a novel of that name by Theodore Hook. He illustrates the wiles of a pretender, employed in insinuating himself into aristocratic society. (2) Sir Jack Brag is an appellation of General Burgoyne in an old ballad by that title.

BRAGGADOCIO. In Spenser's *Faerie Queene*, the personification of cowardice, who is always bragging and boasting, but is stripped of his borrowed plumes and disgraced when he is proved a sham.

BRAN. Bran and Luath are the dogs of Fingal, king of Morven, in Ossian's *Fingal*, and among Highlanders typical of the best in dog nature.

BRASS, SAMPSON. Quilp's legal adviser, in Dickens's *Old Curiosity Shop*, noted for his trickery, obsequiousness, and pretended sentimentality.

BREECHES BIBLE. An edition of the Bible printed in 1557 and so called because in it, Genesis iii, 7 reads, "and they sewed figge-leaves together and made themselves breeches."

BRENTFORD, TWO KINGS OF. Two characters in the duke of Buckingham's farce, *The Rehearsal*, who look, dress, and act alike, always doing the same things together, whether walking, dancing, or singing. They are typical of people who, having cordially hated each other, afterwards profess to be warm friends.

BRIANA. In Spenser's *Faerie Queene*, a maiden whose followers oblige every knight who passes her strong castle to give his beard, and every lady her hair, so that she may win Sir Crudor, who will not marry her till she provides him with a cloak "with beards of knights and locks of ladies lined"; Sir Calidore refuses to pay toll, captures the castle, and compels Sir Crudor to marry Briana.

BRICK, MR. JEFFERSON. A ranting American politician in *Martin Chuzzlewit*.

BRIDE OF THE SEA. A poetical name for Venice, originating in the annual custom of wedding the city to the Adriatic, which lasted from 1177 to 1797.

BRIDE, THROWING A SHOE AFTER. This custom is thought to typify the assault of the outstripped pursuers in the days of carrying away a bride by force. Some regard it as a likeness to a Jewish custom mentioned in the Bible (Ruth iv. 7, 8; Deut. xxv. 9).

BRIGLIADORO. A horse belonging to Orlando, famous in romance.

BROOK FARM. An association of literary men and women including Nathaniel Hawthorne, A. Bronson Alcott, George Ripley, and Charles A. Dana, formed at West Roxbury, Mass., with the hope of "establishing a college for agricultural, literary, and scientific study." It continued only six years.

BROOK, MASTER. A name taken by the jealous Ford, in Shakespeare's *Merry Wives of Windsor*, in order to dupe Sir John Falstaff, who is in love with Ford's wife.

BUCEPHALUS. A celebrated horse which would never allow any one but his master, Alexander the Great, to mount him.

BULL, JOHN. A name for the English nation, first used in Arbuthnot's satire, *The History of John Bull*.

BUMBLE. In Dickens's *Oliver Twist*, the hard-hearted, self-important beadle of the workhouse where Oliver was born and reared.

BUNGAY. (1) Friar Bungay, a famous conjurer in the sixteenth century, mentioned in literature, sometimes with Friar Bacon. He is introduced in Bulwer's *The Last of the Barons*. (2) A bookseller and publisher in Thackeray's *Pendennis*.

BURCHELL, MR. A character in Goldsmith's *Vicar of Wakefield*, who, although really Sir William Thornhill, represents himself to be a poor man. His favorite ejaculation was "Fudge!"

BUZFUZ, SERGEANT. In Dickens's *Pickwick Papers*, the pompous counsel for Mrs. Bardell, who was insolent and bullying to Mr. Pickwick's witnesses.

BYCORNE AND CHICHEVACHE. Two monsters in a pageant referred to by Chaucer in *The Clerk's Tale*. The first feeds upon obedient husbands, the other upon patient wives, Bycorne being overfed, while Chichevache is half-starved.

CADMEAN VICTORY. A victory won with great loss of life. This alludes to the armed men who sprang from the dragon's teeth, sown by Cadmus, and fell upon each other, all but five being killed.

CAERLEON. The principal residence of King Arthur, in the *Arthurian Romances*, situated in Wales on the Usk.

CAIUS. (1) In Shakespeare's *King Lear*, the name taken by the earl of Kent to conceal his identity when he attends the king. (2) Dr. Caius, in the *Merry Wives of Windsor*, is a French physician, a lover of Anne Page.

CALANDRINO. The hero of one of Boccaccio's stories in his *Decamcron*, whose mishaps are laughable.

CALEPINE, SIR. A knight, in Spenser's *Faerie Queene*, who is rescued from Sir Turpine by a Salvage Man, and whose lady, Serena, is saved from the Blatant Beast by Sir Calidore.

CALIBAN. (1) Prospero's deformed and savage slave, in Shakespeare's *Tempest*. Caliban has become a synonym for uncouthness. (2) In Renan's satirical drama entitled *Caliban*, he is represented as a socialist who overthrows Prospero and takes his place, and thus comes to sympathize with him. (3) In Robert Browning's poem *Caliban upon Setebos*, Caliban soliloquizes concerning his god, Setebos, making him out a god in spite of caprice.

CALIPOLIS. A beautiful woman in *The Battle of Alcazar*, a play supposed to have been written by George

Peele. She is referred to in Shakespeare's *Henry IV.*, and in Scott's novels.

CALYDON. A forest referred to in the *Arthurian Romances*, and supposed to be in the northern part of Great Britain.

CAMACHO. In Cervantes's *Don Quixote*, a character who, after making elaborate preparations for his wedding, is cheated out of his bride by a trick.

CAMBALLO or **CAMBALLUS.** The son of King Cambuscan and brother of Canace in Chaucer's *Squire's Tale.*

CAMBUSCAN. A king of Sarra in Tatary, in Chaucer's *Squire's Tale*, who has, on his birthday, four magical presents: a mirror to disclose any treachery or disaster; a brazen horse to carry him to the ends of the earth in a day; a sword to cleave any substance, while curing a wound; and a ring for his daughter Canace, which gives her power to understand the birds' language, and properties of plants.

CAMBYSES, KING. A noisy, boisterous character in Thomas Preston's tragedy of that name, whose manner is alluded to by Falstaff in Shakespeare's *Henry IV.*, as "King Cambyses' Vein," and so quoted by Scott and Carlyle.

CAMILLA. (1) The first woman warrior, the queen of the Volscians, famous for her fleetness of foot, who is on the side of Turnus against the Trojans, in Vergil's *Aeneid.* She is mentioned by Pope. (2) The heroine of a novel of that name by Madame d'Arblay.

CAMILLE. (1) The sister of the three Horatii, in Corneille's tragedy, *Les Horaces*, whose lover, one of the Curiatii, is killed by her brothers. (2) The title and heroine of the English version of Alexandre Dumas's novel and drama, *La Dame aux Camelias.*

CANACE. See CAMBALLO.

CANDIDE. The hero of Voltaire's novel of that name, who stoically endures all kinds of disappointments, sorrows, and disasters.

CANDOUR, MRS. In Sheridan's comedy, *The School for Scandal*, a gossip who slanders every one with such pretended amiability that her name has become a synonym for scandalmonger.

CAPULET. In Shakespeare's *Romeo and Juliet*, a noble family of Verona.

CARADOC. One of the knights of the *Round Table*, famous as the husband of the only one among the queen's ladies who could wear the mantle of matrimonial fidelity.

CARDUEL. A name given to the city of Carlisle, in the *Arthurian Romances.*

CASA GUIDI WINDOWS. A poem by Elizabeth Barrett Browning, named from the house in Florence where she lived for some time.

CASCA. In Shakespeare's *Julius Caesar*, a blunt man, one of the assassins of Caesar.

CASELLA. An old friend of Dante, a musician, whom the poet immortalizes in his *Divine Comedy.*

CASSANDRA. In Shakespeare's *Troilus and Cressida*, the daughter of Priam, a prophetess in whom no one believed.

CASSIB'ELAN. In Shakespeare's *Cymbeline*, a great-uncle to Cymbeline, who granted £3,000 to Caesar annually.

CASSIO, MICHAEL. See OTHELLO.

CASSIUS. A discontented man in Shakespeare's *Julius Caesar*, who cunningly urges Brutus to be one of the conspirators.

CASTLES IN SPAIN. Imaginary projects; taken from the French *Chateaux en Espagne.*

CASTLEWOOD, LADY RACHEL. The mother of Beatrix, who marries Henry Esmond after Lord Castlewood's death, and accompanies him to Virginia.

CAUDLE LECTURES. A series of humorous papers by Douglas Jerrold, published in *Punch*, purporting to be the lectures delivered by Mrs. Margaret Caudle to her patient husband, Job Caudle, between the hours of ten at night and seven in the morning.

CAULINE, SIR. The hero of an ancient ballad in Percy's *Reliques.* He was cup-bearer to the king of Ireland, and won the heart of the king's daughter, Christabel.

CAVALL. "King Arthur's hound of deepest mouth," in Tennyson's *Enid.*

CAVE OF MAMMON. In Spenser's *Faerie Queene*, the dwelling place of the god of wealth.

CAVE OF MONTESINOS. A cavern in Spain celebrated as the abode of Montesinos, a legendary hero of the romances of chivalry. Cervantes made it famous by Don Quixote's visit to it.

CECILIA, ST. The patroness of music, and the subject of odes by Dryden and by Pope.

CELADON. A general name for a rustic lover. In Thomson's *Seasons*, the lover of Amelia.

CELIA. (1) See AS YOU LIKE IT. (2) The mother of Faith, Hope, and Charity in Spenser's *Faerie Queene.*

CERIMON. A noble of Ephesus, who restores Thaisa to life, in Shakespeare's *Pericles.*

C'est le commencement de la fin! (It is the beginning of the end!) Attributed to Talleyrand (1754-1838) by Sainte-Beuve, alluding to the disasters of the Russian campaign, in 1812.

C'est magnifique, mais ce n'est pas la guerre. (It is magnificent, but it is not war.) General Bosquet (1810-1861), afterwards marshal of France, referring to the charge of the Light Brigade at Balaklava, Oct. 28, 1854.

CHANTICLEER. The name of the cock in *Reynard the Fox*, and in the *Nun's Priest's Tale* in Chaucer's *Canterbury Tales.*

CHARMIAN. In Shakespeare's *Antony and Cleopatra*, a kind-hearted but simple-minded attendant of Cleopatra.

CHAUVIN. The principal character in Scribes' *Soldat Laboureur*, a veteran soldier of the First Empire, a blind idolator of Napoleon.

CHILLINGWORTH, ROGER. The revengeful husband of Hester Prynne, in Hawthorne's *Scarlet Letter.*

CHILLON, PRISONER OF. Poem by Lord Byron founded on the story of François de Bonnivard, a Swiss patriot, who was confined for six years in the castle of Chillon, near Lake Geneva.

CHLOE. See DAPHNIS AND CHLOE.

CHRIEMHILD or **CHRIEMHILDA.** See KRIEMHILD.

CHRISTABEL. (1) The heroine of the old romance of *Sir Eglamour of Artois.* (2) See CAULINE, SIR. (3) The heroine of the fragmentary poem by Samuel Taylor Coleridge.

CHRISTOPHER, ST. (CHRIST-BEARER). A giant who carried a child (Christ) over a river (the river of death). Complaining of his peril and weakness, the child answered, "Thou hast borne all the world and its sins likewise."

CHRONICLES OF THE CANONGATE, THE. A series of tales by Sir Walter Scott, including *The Two Drovers, The Surgeon's Daughter, The Highland Widow*, and *The Fair Maid of Perth.*

CHRONONHOTONTHOLOGOS. A burlesque tragedy by Henry Carey. The hero of the same name and king of Queerummania is killed by his general, Bombardinian. It has been described as "the most tragical tragedy ever yet tragedized."

CHRYSAOR. In Spenser's *Faerie Queene*, the sword of Artegal, so called because its blade was inlaid with gold.

CIMMERIANS. A people whom Homer describes in the *Odyssey* as dwelling in a land where the sun never shone.

CINDERELLA. A very old fairy story translated into English from Perrault's fairy tales.

CIPANGO. A marvelous island, described by Marco Polo in his *Voyages*, for which Columbus and other navigators sought without success. It is supposed to be Japan.

CIRCUMLOCUTION OFFICE. A term used by Dickens, in his *Little Dorrit*, to ridicule the tedious delays and careless indifference of officials. The name is now synonymous with governmental routine or "red tape."

CITY MOUSE AND COUNTRY MOUSE. A poem by Matthew Prior, written to satirize Dryden's *Hind and Panther.*

CITY OF DIS. In Dante's *Inferno*, the sixth, seventh, and eighth circles of hell.

CLARCHEN. In Goethe's *Egmont*, a woman of wonderful constancy and devotion.

CLAUDIO. (1) See MEASURE FOR MEASURE. (2) See MUCH ADO ABOUT NOTHING.

CLAUDIUS. See HAMLET.

CLAVILEÑO ALIGERO. A celebrated wooden steed in Cervantes's *Don Quixote*, by means of which Don Quixote and his squire freed the Dolorida Dueña and her companions in misery from their enchantment.

CLEANTE. (1) In Molière's *Tartuffe*, the brother-in-law of Orgon. (2) In Molière's *Le Malade Imaginaire*, a shrewd and successful lover of Angèlique.

CLEISHBOTHAM, JEDEDIAH. The "parish clerk and schoolmaster of Gandercleugh," the pretended editor of the *Tales of my Landlord*, by Sir Walter Scott. This series includes *The Black Dwarf, Old Mortality*, and *The Heart of Midlothian.*

CLEMENTINA, LADY. An accomplished and lovely Italian who becomes insane from her hopeless love for Sir Charles Grandison in Richardson's novel of that name.

CLEON. (1) In Shakespeare's *Pericles*, the governor of Tarsus, who, with his wife, Dionyza, is burned to death by the citizens to avenge the attempted murder

of Marina, daughter of Pericles. (2) The personification of glory in Spenser's *Faerie Queene*.

CLEOPATRA. See ANTONY AND CLEOPATRA.

CLIFFORD, PAUL. In Bulwer-Lytton's novel of that name.

CLINKER, HUMPHRY. The hero of Smollett's novel, *The Expedition of Humphry Clinker*, is introduced as a destitute, shabby workhouse lad who, after serving in various capacities, becomes a servant to Matthew Bramble. He succeeds in converting the Squire's sister and the maid, whom he marries. His identity as the natural son of the squire is established.

CLOTEN. In Shakespeare's *Cymbeline*, the son of the queen by a former husband, the rejected lover of Imogen.

COCK, THE. A tavern in Fleet street, London, made famous by Tennyson in *Will Waterproof's Lyrical Monologue*.

COCLES, HORATIUS. Hero of one of Macaulay's *Lays of Ancient Rome*, who "kept the bridge" against Porsena and the Etruscan army, until the other Romans had broken down the end behind him, when he swam back across the Tiber to safety.

COELEBS. The hero of a novel by Hannah More, *Coelebs in Search of a Wife*. A satire on impossible ideals of womanhood.

COLADA. One of the Cid's two swords, golden hilted, and dazzling to the eye.

COLIN CLOUT. (1) A poem by John Skelton, patirizing the clergy. (2) Edmund Spenser's name for himself in *The Shepherd's Calendar*, *The Ruins of Time*, and *Colin Clout's Come Home Again*. (3) In Gay's *Pastorals*.

COLOGNE, THREE KINGS OF. The three magi, Gaspar, Melchior, and Balthazar, who paid their homage to the infant Saviour. Their bodies were said to have been brought from the East to Constantinople by the empress Helena, and from there moved to Milan and later to Cologne, where they were placed in a golden reliquary in the Cathedral.

COMEDY OF ERRORS. A comedy by Shakespeare. Twin brothers of exact likeness, named Antipholus, and twin servants, named Dromio, equally similar, are involved in many complications. The brothers are lost at sea with the Dromios and rescued by different vessels. There are more entanglements until the parties face each other and satisfactory explanations follow.

CONRADE. (1) A follower of Don John in *Much Ado About Nothing*. (2) Marquis of Montserrat, in Scott's *Talisman*, a wily schemer, murdered in his tent by the Templar.

COOK'S TALE, THE. One of Chaucer's *Canterbury Tales*.

COPHETUA, KING. A character in an old ballad in Percy's *Reliques*, represented as an African king who loves and marries a beggar maid, Penelophon. Shakespeare mentions her several times as Zenelophon, and Tennyson's *Beggar Maid* repeats the story.

CORDELIA. See KING LEAR.

CORINNE. The heroine of a novel by Madame de Staël.

CORIOLANUS. A tragedy by Shakespeare, based on Livy's story of Caius Marcius Coriolanus, who, banished from Rome, returns, leading an army of Volscians, and is kept from destroying the city only by the entreaties of his mother and his wife.

Corporations have no souls. Sir Edward Coke (1552-1633).

CORSICAN BROTHERS, THE. A drama by Dion Boucicault, adapted from Dumas's novel *Les Frères Corses*.

CORYDON. A name used by Theocritus, Vergil, Spenser, and other writers of pastoral poetry, for a shepherd or rustic swain.

CORYPHAEUS. The leading man or spokesman in the Greek chorus. From it is derived the French Coryphée, a ballet dancer.

COSTARD. A clown in Shakespeare's *Love's Labour's Lost*.

COUNT OF MONTE CRISTO. A famous novel by Alexandre Dumas. The hero, Edmond Dantes, unjustly imprisoned for years, escapes to find his father dead and his betrothed married to another. Becoming possessed of enormous wealth from a treasure buried on the island of Monte Cristo, of the existence of which he has learned from the Abbé Faria, a fellow prisoner, he devotes the rest of his life to revenge.

COUSIN MICHAEL. A nickname for a German or for the German nation, indicating the proverbial slowness and credulity, as the name Michael is often used in Germany to designate any stupid, uncouth peasant.

COVERLEY, SIR ROGER DE. Represented by Addison, in a series of papers by that name, published in the *Spectator*, as a delightful English country gentleman of Queen Anne's time, amiable and hospitable, though eccentric.

CRAB. A dog belonging to Launce which figures in Shakespeare's *Two Gentlemen of Verona*.

CRANE, ICHABOD. In Irving's *Legend of Sleepy Hollow*, a tall, lank, homely schoolmaster whose designs on Katrina Van Tassel are frustrated by his rival, Brom Van Brunt, who frightens Ichabod away by impersonating the "Headless Horseman."

CRANES OF IBYCUS, THE. A poem by Schiller based on the story that Ibycus, a Greek poet, attacked by robbers near Corinth, called a flock of cranes passing by, to avenge his death. By means of the cranes and the guilty conscience of one of the murderers, the assassins were detected.

CRAPAUD, JEAN or JOHNNY. A name applied to a Frenchman or the French people, as "John Bull" is to the English. It originated in the belief that the frog (crapaud) was once on the coat of arms of France, instead of the fleur-de-lis.

CRAWLEY, CAPTAIN RAWDON. A dragoon and man of the world, who married Becky Sharp, in Thackeray's *Vanity Fair*. With few brains and many faults, yet he loved the faithless Becky.

CREAKLE, MR. In Dickens's *David Copperfield*, the master of the school to which David's stepfather sends him; a "Tartar," who speaks only in a whisper.

CYMBELINE. A mythical king of Britain, the hero of Shakespeare's play of that name. The plot of the story turns on a wager concerning the faithfulness of Imogen, and a banished lord, who has stolen her brothers.

DAGONET, SIR. The attendant fool or jester of King Arthur.

DAMOCLES, SWORD OF. Dionysius, king of Syracuse, was enjoying a magnificent banquet when he saw above his head a sword suspended by a single horsehair, which filled him with anxious dread.

DAMOETAS. A herdsman in Theocritus and Vergil; hence a poetical name for any herdsman.

DAMON. A poetical name for a goatherd or other rustic, first used by Vergil.

DAMON AND PYTHIAS. Two noble Pythagoreans of Syracuse, renowned for their friendship. Pythias, having been condemned to death by Dionysius I., obtained leave to go home to arrange his affairs, Damon pledging his life for his friend's return. Pythias returned just in time to save Damon from death. The tyrant, moved by such a rare friendship, pardoned Pythias.

DANDIN. (1) The title of a comedy by Molière, and the name of the hero who married above his rank, but is constantly blaming himself. (2) Name of a mock judge in Rabelais.

DAPHNIS AND CHLOE. A pair of lovers in a Greek pastoral love story, supposed to have been written in the fourth or fifth century, by Longos.

DARBY AND JOAN. A married couple said to have lived in Yorkshire, over a century ago, a long and happy life, for which they have become the type of conjugal felicity.

Das deutsche Heer ist das deutsche Volk in Waffen (the German army is the German people in arms). Prince Regent Wilhelm of Prussia (William I.) (1797-1868), in the speech from the throne at the opening of the Diet, January 12, 1860.

DAVID COPPERFIELD. By Charles Dickens. The story treats of the sad experiences of David Copperfield, his youth at school, his struggles for a livelihood, and leaves him a young man prosperous and happily married. The other characters in the book, Micawber, Mr. Gummidge, Barkis, Little Em'ly, Traddles, the Peggottys, and Uriah Heep, are household words as types of human qualities.

DAVY. In Shakespeare's *King Henry IV.*, Shallow's "good varlet."

DAVY JONES. A humorous name given by sailors to an evil spirit supposed to stir up storms and make trouble for ships. "Davy Jones's locker" is the bottom of the sea, and to go there is to die.

DAW'FYD. One-eyed chief in Scott's *The Betrothed*.

DEFARGE, MME. In Dickens's *Tale of Two Cities*, a strange ghoulish-natured woman of the lower classes, who sits calmly knitting as she watches with satisfaction the guillotine accomplish its awful work, all the time secretly helping to add more victims.

DELLA CRUSCAN SCHOOL. A small coterie of English poets, including Mrs. Piozzi, Mrs. Hannah Cowley, James Boswell, Robert Merry, and Colman the Younger, who met about 1785 in Florence. Their affected and sentimental style and extravagant praises of each other brought ridicule upon them.

DELPHIN CLASSICS. An edition of the Latin classics, made by order of Louis XIV., for the Dauphin, Louis.

DEMOSTHENES'S LANTERN. A monument originally surmounted by the "tripod" or prizes awarded to every one in Athens who produced the best drama or choral piece. Demosthenes's Lantern was full of tripods.

DEMPSTER, JANET. The heroine of *Janet's Repentance* in George Eliot's *Scenes from Clerical Life.* A woman of generous impulse, led to drink by the brutality of her husband, but rescued by a clergyman to a life of noble service.

DE PROFUNDIS. The 130th Psalm, called so from the Latin version of the first two words.

DERONDA, DANIEL. A strong character in George Eliot's novel of that name. When he discovers that he is of Jewish parentage, he resolves to restore to his race the position it once held among the nations.

Der Starke weicht einen Schritt zurück. (The strong man retreats a step.) Baron Th. von Manteuffel, Minister for Foreign Affairs (1805-1882), at the eighth session of the Prussian Second Chamber, December 3, 1850.

DESDEMONA. See OTHELLO.

Desperate diseases require desperate remedies. Guido (Guy) Fawkes (1570-1606), when taken before King James I.

DHU, RODERICK. An outlaw and highland chief, a suitor of Ellen Douglas in Scott's *Lady of the Lake.*

DIANA. In Shakespeare's *All's Well that Ends Well,* the fair and honorable lady who would not listen to Bertram's suit, but assisted Helena, his wife, to win his love.

Die Presse ist nicht die offentliche Meinung (The press is not public opinion). Prince Bismarck (1815-1898) in the Budget Commission of the Prussian Chamber of Deputies, September 30, 1862.

DIES IRAE. A famous hymn on the last judgment composed probably by Thomas of Celano (1255). Used by Scott in the *Lay of the Last Minstrel.*

Dieu est toujours pour les gros bataillons. (God is always on side of the big battalions.) Attributed to Turenne (1611-1675) by Joseph de Maistre.

DIGGON, DAVIE. In Spenser's *Shepherd's Calendar,* a shepherd who professes to have been surprised and pained by the luxury he had observed during his travels in foreign lands.

DIGGORY. In Goldsmith's *She Stoops to Conquer,* an awkward, chattering servant "taken from the barn to make a show at the side-table."

DIMMESDALE, ARTHUR. A Puritan minister, in Hawthorne's *Scarlet Letter,* who is reverenced as a saint, but whose conscience drives him to a public confession of his sin.

Diviser, pour regner (Divide, to reign). Machiavelian maxim put in practice by Catherine de' Medici (1519-1589) and by Louis XI. (1423-1483).

DOCTOR SYNTAX. The simple-minded hero of Coombe's poems, *Tour of Dr. Syntax in Search of the Picturesque, A Tour in Search of Consolation,* and *A Tour in Search of a Wife,* a parson who mounts his horse Grizzle, and leaves his home to undertake the various quests.

DODS, MEG. In Scott's *St. Ronan's Well,* the robust landlady "with a voice that could match a choir of fishwomen," but whose cookery was excellent.

DOGBERRY. In Shakespeare's *Much Ado About Nothing,* a talkative night constable, who uses large words in an absurdly wrong way.

DOLLA MURREY. A woman pictured in Crabbe's *Borough* as dying at the card table.

DOLLY VARDEN. The pretty but roguish daughter of Gabriel Varden in Dickens's *Barnaby Rudge,* who married Joe Willet and with him kept the Maypole Inn. Her dress of the Watteau style set the fashion for the Dolly Varden garments of 1875-1876.

DOMINIC, FRIAR. The leading character in Dryden's play, *The Spanish Friar,* written to ridicule the vices of the priesthood.

DOMINIE SAMPSON. One of Scott's best characters, an awkward, but learned man, Harry Bertram's tutor in *Guy Mannering.* He is fond of quoting Latin, and his favorite exclamation is "Prodigious!"

DON ADRIANO de ARMADA. A pompous Spaniard in Shakespeare's *Love's Labour's Lost,* who uses large words out of all proportion to the importance of the thought.

DON JUAN. (1) A celebrated character in literature, the type of a polished libertine. The original is supposed to have been Don Juan Tenorio, a nobleman of Seville, who killed the governor in a duel caused by Tenorio's insulting the governor's daughter. (2) An incomplete poem by Lord Byron, the hero of which, in trouble with Donna Julia, is sent off by his mother, Donna Inez, to travel. His wanderings in foreign lands form the theme of the poem.

DON PEDRO. In Shakespeare's *Much Ado About Nothing,* the Prince of Arragon, who devised a scheme for making Benedick and Beatrice fall in love with each other.

DON QUIXOTE. A celebrated Spanish romance by Cervantes. Don Quixote, a gaunt, long-limbed gentleman of La Mancha, whose head was turned by reading romances, decided to become a knight-errant, and rides forth dressed in armor, on his horse Rosinante, with his esquire, Sancho Panza, a short, fat countryman, ignorant but shrewd, on his mule Dapple. The knight takes windmills for giants, flocks of sheep for armies, inns for castles, and galley slaves for oppressed gentlemen. After many absurd adventures, the two are taken back to their native village, where Don Quixote is finally restored to sanity.

DOORM. The brutal robber earl, in Tennyson's *Idylls of the King,* who insulted Enid, and was killed by Geraint.

DORASTUS AND FAWNIA. In Greene's *Pandosto and the Triumph of Time,* the hero and heroine, upon whose story Shakespeare founded his *Winter's Tale.*

DOTHEBOYS HALL. In Dickens's *Nicholas Nickleby,* a school in Yorkshire, mismanaged by a brutal, tight-fisted man named Squeers, who half-starved and ill-treated his pupils.

DOUSTERSWIVEL, HERMAN. In Scott's *Antiquary,* a German adventurer who pretends to be an astrologist and able to discover treasure by a divining-rod.

DRAGON OF WANTLEY, THE. The subject of an ancient comic ballad in Percy's *Reliques.* This fearful monster, having ravaged the country around Wantley (Warncliff in Yorkshire), More of More Hall, clad in armor studded with sharp spikes, concealed himself in a well, and when the dragon came to drink, slew him by kicking him in the mouth, his only vulnerable point.

DRAWCANSIR. In the duke of Buckingham's *Rehearsal,* a swaggering, bullying character, represented as killing all the combatants on both sides in a battle, and then bragging of his exploit. His name has become a synonym for braggart or bully.

DROMIO. See COMEDY OF ERRORS.

DRYASDUST, THE REV. DR. A learned but prosy writer, who, Sir Walter Scott pretends, is responsible for some of the letters that preface his novels. His name is a synonym in literature for dullness and tediousness.

DUESSA. (that is "double-minded"). In Spenser's *Faerie Queene,* a hateful witch, typifying falsehood, who, under the name of Fidessa, pretending to be a lovely woman in trouble, lures the Red Cross knight into the House of Pride, where he is attacked, defeated, and imprisoned by the giant Orgoglio. Duessa has been thought to represent Mary Queen of Scots, and also the Roman Catholic Church.

DUKE HUMPHREY. A name used in an old phrase, "To dine with Duke Humphrey." i. e., to have no dinner at all. This expression arose either from the report that Duke Humphrey, the ill-fated son of Henry IV., was starved to death, or from the custom of people of gentility without means to walk near his tomb in old St. Paul's in the hope of receiving an invitation to dinner.

DULCINEA DEL TOBOSO. A buxom country maiden, the object of Don Quixote's romantic devotion. Her real name was Aldonza Lorenzo, but Quixote, dissatisfied with so plebeian a cognomen, invents for her a new name. Dulcinea has become the synonym for lady-love or sweetheart.

DUNDREARY, LORD. A character made famous by E. H. Sothern's acting in Taylor's play, *Our American Cousin.* He is a combination of empty-headedness, indolence, and haughtiness, drawling his half-expressed utterances, and imagining that every one who differs from him is insane.

DURANDAL, DURANDANA, DURENDA. In the old romances, the sword of Orlando, fashioned for the fairies, and powerful enough to cleave the Pyrenees at a blow.

DURANDARTE. In Spanish romances a mythical hero, represented as the cousin of Montesinos, and a peer of France, who dies at Roncesvalles requesting his heart to be carried to his lady love Bellerma. In Cervantes's *Don Quixote,* he figures in the adventure in the Cave of the Montesinos.

DURDEN, DAME. (1) The heroine of an old English glee, described as a notable housewife with

many servants. (2) In Dickens's *Bleak House*, a pet name of Mr. John Jarndyce for Esther Summerson.

DURWARD, QUENTIN. The hero of Scott's novel of that name, an archer and member of the Scottish Guards of Louis XI., of France, who marries the Countess Isabelle, having been tended by her when he was wounded by De la Marck. Other historical characters brought into the story are Philip de Comines, Prince Louis of Bourbon, the Dauphin, and Charles the Bold, Duke of Burgundy.

Ecrasez l'infâme! (Crush the infamous thing!) Phrase often used by Voltaire (1694-1778) at the end of his letters, especially in the year 1762 and after. Sometimes he abbreviated it to "Ecr. l'inf."

EDGAR. In Shakespeare's *King Lear*, the son of the earl of Gloucester, who, dispossessed of his inheritance by his illegitimate brother, the villainous Edmund, wanders around disguised as Poor Tom, a witless beggar.

EDITH, LADY. In Scott's *Ivanhoe*, the mother of Athelstane "the Unready," thane of Coningsburg.

EDITH PLANTAGENET, LADY. In Scott's *Talisman*, the kinswoman of Richard I. She was an unwitting accomplice in a practical joke played by Queen Berengaria upon her and Sir Kenneth, whom Edith finally married, although Saladin sued for her hand.

EDITH, THE MAID OF LORN. In Scott's poem, *The Lord of the Isles*, the heroine whose nuptials with Lord Ronald are delayed by the arrival of the Bruce.

EGEUS. See MIDSUMMER NIGHT'S DREAM.

EGLAMOUR. In Shakespeare's *Two Gentlemen of Verona*, the worthy old gentleman who assisted Silvia in her escape from her home.

EGLAMOUR, SIR. (1) The hero of a humorous ballad by Rowlands. (2) One of the valiant knights celebrated in the *Arthurian Cycle*.

EGLANTINE. (1) In *Valentine and Orson*, the daughter of King Pepin, who marries her cousin Valentine, dying soon after. (2) Madame. In Chaucer's *Canterbury Tales*, the prioress, who was unworldly in manners and dress, but lively, and spoke French "after the scole of Stratford-atte-Bowe."

EGYPTIAN THIEF, THE. Mentioned in *Twelfth Night*, it refers to Thyamis, the robber thief. In love with Chariclea, his captive, and aware that he must die, he runs his sword through her that she may accompany him to the land of shadows.

ELAINE. (1) In the *Arthurian Romances*, the daughter of King Pelles, and mother of Sir Galahad. (2) In Tennyson's *Lancelot and Elaine*, the "lily maid of Astolat," who dies for hopeless love of Sir Lancelot.

ELBERICH. See OBERON.

ELBOW. In Shakespeare's *Measure for Measure*, a simple-minded constable.

EL DORADO. An imaginary country full of gold and precious stones, in South America, so named by the Spanish in the sixteenth century. A name applied now to any rich new country.

ELECTRA. The heroine of tragedies by Sophocles and Euripides. Daughter of Agamemnon and Clytemnestra.

ELIM. In Klopstock's *Messiah*, the guardian angel of Lebbæus, one of the apostles, who died of grief at the death of Jesus.

ELISSA or **ELISA.** (1) The real name for Dido. (2) In the *Faerie Queene*, one of the three sisters who were never able to agree on any subject. Elissa, the eldest, was niggardly and mean; Medina, prudent and thrifty, but generous, while Perissa was prodigal and reckless.

ELOPS. The dumb serpent, which gives no warning when approaching, mentioned by Milton.

ELVIRA. (1) In Dryden's *Spanish Friar*, married to Gomez, a wealthy old banker, she has a love affair with Lorenzo, who turns out to be her brother. (2) In Sheridan's *Pizarro*, she sacrifices all for love of Pizarro, whom she endeavors to influence for good, but in vain.

EMELYE. Wife of Palamon, the sister-in-law of "Duke of Theseus." (Chaucer's *Canterbury Tales*.) (See PALAMON AND ARCITE.)

EMILIA. (1) In *Othello*, wife of Iago and waiting woman to Desdemona; a brave, spirited woman who unwittingly helped to bring about her mistress's death by giving Desdemona's handkerchief to Iago, by whom she was killed for telling the truth. (2) In *Winter's Tale*, an attendant of Hermione. (3) In Smollett's *Peregrine Pickle*, the beloved of Peregrine.

ENGLISH BARDS AND SCOTCH REVIEWERS. A satirical poem written by Lord Byron because of the unfavorable criticism a volume of his early poems received from the *Edinburgh Review*.

ERL-KING. A ballad by Goethe having for its subject the goblin which is said to haunt the Black Forest, and to take especial delight in doing mischief to children. The poem has been set to music by Schubert.

ERMELINE. Reynard's wife, in the tale of *Reynard the Fox*.

ERMINIA. The heroine of *Jerusalem Delivered*.

ESCALUS. In Shakespeare's *Measure for Measure*, an old noble, kind-hearted but not very shrewd, who is Angelo's deputy during the duke of Vienna's pretended absence from his realm.

ESMERALDA. In Victor Hugo's *Notre Dame de Paris*, a beautiful gypsy, who goes about the streets with her goat, dancing and playing a tambourine. She is executed as a witch.

ESTOTILAND. An imaginary country supposed to be situated in the northern part of North America, mentioned by two Venetians named Zeno, and introduced by Milton and Irving in their writings.

EUGENE ARAM. A character taken from life in a play of the same name by W. G. Willis; in Thomas Hood's poem *Eugene Aram's Dream*, and in a novel by Bulwer-Lytton. He was a school teacher much respected and of kindly nature, who under peculiar conditions committed a murder. His deed so haunted him that he committed suicide.

EULALIE, ST. A virgin martyr, who cast down the idols set up by Diocletian, for which she suffered torture.

EULENSPIEGEL (Owl Glass), **TYLL.** The hero of a number of German popular tales, a peasant who became a wandering Jack-of-all-trades, and played mischievous pranks on everybody.

EUPHRASY. The herb, eye-bright, used by Michael to purge Adam's eyes, so that he might see into the future. (Milton's *Paradise Lost*.)

EUPHUES or **THE ANATOMY OF WIT.** A novel by John Lyly. The principal character, Euphues, an Athenian of remarkable wit and elegance of speech and manner, is given to roving and love-making. He represents the style of courtiers of Queen Elizabeth's reign, but uses such stilted and extravagant speech abounding in far-fetched similes, that from this work came two words, euphuism and euphuist.

EVANS, SIR HUGH. In Shakespeare's *Merry Wives of Windsor*, a Welsh parson and school teacher, ignorant but pedantic, who has a ludicrous quarrel with Dr. Caius.

EXCALIBUR. In the *Arthurian Romances*, the famous sword which no one but King Arthur could draw from the stone where it was imbedded, thus proving his right to the throne. At Arthur's death he compelled Sir Bedivere to cast the sword into the lake, when a hand caught it and drew it beneath the water.

Facing the music. Saying said to be of military origin, one of the difficulties in training horses for the army being to get them to "face" the regimental band.

FADLADEEN. In Moore's *Lalla Rookh*, the grand chamberlain of the harem, who considers himself competent to criticise anything "from the penciling of a Circassian's eyelids" to the most profound subject in science or literature.

FAIR ROSAMOND. The heroine of many plays and poems, and mentioned in Scott's *Woodstock;* a fanciful name given to Jane Clifford, the mistress of Henry II. The story that Queen Eleanor discovered, by means of a thread, the clue to the labyrinth which ended in the bower built for "Fair Rosamond" by the king, and compelled her to take poison, is not true according to history.

FAKENHAM GHOST. A ballad by Robert Bloomfield, in which the ghost is a donkey.

FALKLAND. (1) In *The Rivals*, the jealous lover of Julia. (2) The title of Bulwer-Lytton's first novel.

FALSTAFF, SIR JOHN. A famous character in Shakespeare's comedy *The Merry Wives of Windsor*, where he is a fat, greedy boaster, making love confidently to Mistress Ford, who fools him and makes him ridiculous. In the historical drama, *King Henry IV.*, he is a soldier and wit, always ready with a lie, the same old braggart and glutton, the boon companion of Prince Hal.

FANG. (1) A sheriff's officer in Shakespeare's *King Henry IV.* (2) In Dickens's *Oliver Twist*, Mr. Fang is the magistrate who was just about to convict Oliver wrongfully, when Mr. Brownlow interposed.

Fango che sale. (Dregs which rise to the top.) Giuseppe Colombo, Minister of Finance, at a conference at Milan, November 7, 1889, referring to the administrative elections: "La popolazione bassa approfitta di questa inerzia, e il fango sale, sale e sale."

(The lower orders of the population take advantage of this indulgence, and the dregs rise, rise, and keep rising.)

FARIA, ABBE. See COUNT OF MONTE CRISTO.

FATA MORGANA. In the *Arthurian Cycle*, the sister of King Arthur. She is also called Morgan and Morgue le Fee. In *Orlando Innamorata*, she is called Fortune.

FATIMA. (1) See BLUEBEARD. (2) In the *Arabian Nights*, the mother of Prince Camaralzaman. (3) In *Aladdin, or The Wonderful Lamp*, a holy woman of China who cured headaches by laying her hand on the person.

FEAST OF LIGHTS. Christmas—so called in the Latin Church because more lights are used then.

FELL, DR. Dr. Fell (1625-1686), dean of Christ Church, expelled Tom Brown from school, but remitted sentence on condition that Brown translate the 33d "Epigram of Martial":—

"Non amo te, Zabidi, nec possum dicere quare;
Hoc tantum possum dicere, non amo te."

Translated by Brown thus:—

"I do not love thee, Dr. Fell,
The reason why I cannot tell;
But this I know and know full well,
I do not love thee, Dr. Fell."

FENTON. A lover who wooes Anne Page for money, but discovers virtues in her which change him. (Shakespeare's *Merry Wives of Windsor*.)

FERDINAND. (1) In Shakespeare's *Tempest*, the son of Alonzo, king of Naples, and the lover of Miranda. (2) In *Love's Labour's Lost*, the king of Navarre, who signs a compact with three young lords to study three years, during which time they are not to see any women; but the princess of France coming on an embassy, he breaks the vow and falls in love.

FERRERS. Hero of *Endymion*, by Disraeli.

FIAMMETTA. The subject of Boccaccio's tale, *Amarosa Fiammetta*, and the name given by him to his lady love, Maria, supposed to be the daughter of the king of Naples.

FIDELE. In Shakespeare's *Cymbeline*, the name assumed by Imogen when, dressed in boy's clothes, she comes to the cave of Belarius on her way to Milford Haven to meet her husband.

FIDESSA. See DUESSA.

FIGARO. In Beaumarchais's comedies, *The Barber of Seville* and *The Marriage of Figaro*, a celebrated character who outwits every one by his shrewdness and cunning, appearing in the first as a barber, in the second as a valet.

FIRMIN, PHILIP. The hero of Thackeray's novel of that name, which exemplifies the parable of the Good Samaritan.

FLAMBOROUGHS, THE. In Goldsmith's *Vicar of Wakefield*, neighbors, between whom and the vicar's family there had long been "a sort of rivalry in point of taste."

FLIBBERTIGIBBET. (1) In Shakespeare's *King Lear*, a friend mentioned by Edgar, who says he "squints the eye, makes the hare-lip and mildews the white wheat." (2) The nickname of Dicky Sludge, in Scott's *Kenilworth*, who helped Smith deceive the villagers, and stole the letter which decided Amy's fate.

FLORA McFLIMSEY. The subject of the poem, *Nothing to Wear*, by William Allen Butler. Her name is used to represent any woman who thinks she has no gown suitable to wear.

FLORIMEL. In Spenser's *Faerie Queene*, a virtuous lady who cherishes an unrequited love for Sir Marinel. He, however, after releasing her from the dungeon of Proteus, takes pity on her and marries her.

FLUE. In *Midsummer Night's Dream*, the bellows-mender who takes the part of Thisbe in the interlude.

FLUELLEN. In Shakespeare's *Henry V.*, an amusing Welsh captain, who loves to talk and to air his small stock of learning.

Fold up the map of Europe! William Pitt (1759-1806), after his return from Bath to his house at Putney (January, 1806), just after the battle of Austerlitz (December 2, 1805), observing a map of Europe unrolled, turned to his niece and said: "Roll up that map: it will not be wanted these ten years."

FORTINBRAS. In Shakespeare's *Hamlet*, a prince of Norway who hopes to gain by the misfortunes of Denmark.

FORTUNATUS. The hero of an old story which is found in many languages. He is likely to starve, when Fortune, in the guise of a lady, offers him his choice of wisdom, strength, riches, health, beauty, or long life. Choosing wealth, he is given an inexhaustible purse, which ultimately proves the ruin of himself and his family. The sultan also gives him a wishing cap, which enables him to be transported immediately to any place he desires.

FOUR MARYS, THE. Four young ladies who accompanied Mary Queen of Scots to France, where she was educated, and became her ladies in waiting when she grew up. They were Mary Bethune, Mary Levison, Mary Fleming, and Mary Seton.

FOXLEY, SQUIRE MATTHEW. The justice who granted Redgauntlet the warrant to imprison Darsie Latimer; a plethoric person whose air of importance was out of all proportion to his legal knowledge.

FRANKENSTEIN. A romance by Mrs. Shelley. Frankenstein, a medical student, collects from graveyards and the dissecting room materials from which he fashions a being having the semblance of life, but without a soul. This monster, avoided by all and realizing his defects, seeks revenge by committing various crimes, and killing Frankenstein, when he comes to an end in the northern seas.

FRIAR JOHN. (1) The roistering, profane friar, in Rabelais's *Pantagruel*. (2) The unsuccessful messenger of Friar Laurence in *Romeo and Juliet*.

FRIAR LAURENCE. See ROMEO AND JULIET.

FRIAR TUCK. In Scott's *Ivanhoe*, the jolly monk who belongs to Robin Hood's band, and who can fight as well as pray. He is also known as the Holy Clerk of Copmanhurst. In the old ballads and romances, the chaplain and confessor of Robin Hood.

FROU-FROU. A French play by Meilhac and Halévy, which was named from the soft rustling sound made by the dress of the heroine as she walked.

GADSHILL. A companion of Falstaff. (Shakespeare's *King Henry IV.*)

GALAHAD, SIR. In the *Arthurian Romances*, the perfect knight, son of Lancelot and Elaine. In Tennyson's *Idylls of the King* and his beautiful poem *Sir Galahad*, a knight in white armor, the purest of the knights of the Round Table.

GAMELYN, THE TALE OF. An old story, relating the woes of Gamelyn, who, ill-treated by his brothers, flies to the woods and becomes king of the outlaws. This tale was the basis of a romance by Thomas Lodge, entitled *Rosalynde*, from which Shakespeare derived material for *As You Like It*.

GAMP, SAIREY. In Dickens's *Martin Chuzzlewit*, a fat monthly nurse, famous for her bulky umbrella and continual reference to Mrs. Harris, a mythical personage, whose opinions confirmed her own.

GANYMEDE. The name taken by Rosalind in Shakespeare's *As You Like It*, when, dressed as a boy, she goes forth into the forest of Arden.

GARETH AND LYNETTE. One of Tennyson's *Idylls of the King*. Sir Gareth, a knight of the Round Table, who was a scullion in Arthur's kitchen. He became the champion of Lynette and with her rescued her sister Lyonors from Castle Perilous.

GARGAMELLE. The mother of Gargantua in Rabelais's *Gargantua*.

GARGANTUA AND PANTAGRUEL. A celebrated satire by Rabelais, in which he spares neither king nor court, popes, statesmen, monks nor priests. Gargantua, a giant with a phenomenal appetite, has been supposed to represent the church. Pantagruel, the son of Gargantua and Badebec, is quite as wonderful as his father, Gargantua.

GAWAIN, SIR. In the *Arthurian Romances*, a nephew of King Arthur and the second knight of the Round Table created by the king.

GELLATLEY, DAVIE. In Scott's *Waverley*, a half-witted fellow in charge of Bradwardine's hounds.

GENEVIEVE. (1) The heroine of a ballad by Coleridge. (2) The heroine (under the name Genoveva) of a German legend, in which the wife of Count Palatine Siegfried of Mayenfeld was by reason of false accusations ordered by him to be put to death. The servant intrusted with this order left the countess in the woods of Ardennes, where she stayed until her husband found her by accident, and established her innocence.

GERALDINE. The Fair—the Lady Elizabeth Fitzgerald, who married the Earl of Lincoln, and who is the subject of sonnets by Henry Howard, Earl of Surrey. Scott introduces her into Fitztraver's song, in the *Lay of the Last Minstrel*.

GERUSALEMME LIBERATA (Jerusalem Delivered). An epic poem in twenty books by Tasso. It is a story of the capture of Jerusalem by the Crusaders under Godfrey de Bouillon from the unbelievers. Rinaldo, who has withdrawn from the army, has to be brought back from Armida's enchanted island, before the city can be taken from the Mohammedans, and the Christians achieve a triumphant entry into the city.

GESTA ROMANORUM. A collection of old

romances, compiled by Pierre Boucheur, the source of much of our best literature.

GIL BLAS DE SANTILLANE. A French romance by Le Sage. The hero, Gil Blas, very unsophisticated at first, is duped and deceived by every one, until he finally gains experience enough to act the schemer himself.

GLORIANA. The "greatest glorious queen in fairyland"; in Spenser's *Faerie Queene*, Queen Elizabeth.

GLUMDALCA. Queen of the giants in King Arthur's Court. (Fielding's *Tom Thumb*.)

GOBBO, LAUNCELOT. In Shakespeare's *Merchant of Venice*, a servant of Shylock, who leaves him to enter Bassanio's service.

GOBBO, OLD. Launcelot's father, who had lost his eyesight but not his wit.

God and Liberty. Voltaire (1694-1778): Said in English when blessing Franklin's grandson (1778).

GODIVA. A poem by Tennyson. Lady Godiva, wife of Leofric, the hard-hearted earl of Mercia, besought her husband to remove the heavy tax upon the poor. To prove her sincerity she rode naked through the town, according to the earl's agreement, and removed the tax.

GOLDEN LEGEND. A collection of lives of the saints, valuable for the picture it gives of the Middle Ages. Longfellow has a song of the same name.

GONERIL. See KING LEAR.

GONZALO. See TEMPEST, THE.

GRACIOSO. A character in Spanish pantomime and comedy, noted for his buffoonery, and answering to the Italian harlequin and the English clown.

GRATIANO. (1) In Shakespeare's *Merchant of Venice* a friend of Bassanio, a merry talkative fellow, who "speaks an infinite deal of nothing." He marries Nerissa, Portia's waiting woman. (2) In *Othello*, brother to Brabantio.

Great objects can only be seen at a distance. James Northcote (1746-1831).

GREEN-EYED MONSTER. A term originally used in Shakespeare's *Othello* by Iago, and now commonly used to typify jealousy.

GREMIO. In Shakespeare's comedy, *The Taming of the Shrew*, a rich old "graybeard" who is one of Bianca's suitors.

GRUB STREET. A street in St. Giles, Cripplegate, London (renamed Milton street in 1830), where formerly resided several small authors, writers of cheap pamphlets and broadsides.

GRUMIO. In Shakespeare's *Taming of the Shrew*, a facetious and rather impertinent servant of Petruchio.

GRUNDY, MRS. A character in Morton's comedy, *Speed the Plough*, who is frequently mentioned but never appears on the stage. Another character continually asks, "What will Mrs. Grundy say?" a saying often repeated in modern times.

GUINEVERE or **GUINEVER.** In the *Arthurian Romances*, the daughter of Leodegrance, king of Cameliyard, "the fairest woman in the world," Arthur's queen. On her way to be his bride she and Sir Lancelot, by whom she was conducted, fell in love with each other, and their love so demoralized the court that the Round Table was eventually dissolved, Arthur passed away, and Guinevere retired to a convent.

GUMMIDGE, MRS. In Dickens's *David Copperfield*, a "lone, lorn creetur," befriended by Daniel Peggotty.

GUY MANNERING, or **THE ASTROLOGER.** A novel by Scott which has been dramatized. The hero, Henry Bertram, son of the laird of Ellangowan, stolen when a child, is restored to his inheritance through a gypsy, Meg Merrilies. He marries Julia, daughter of Guy Mannering, and his sister, Lucy, marries Charles Hazelwood, son of Sir Robert.

GUYON, SIR. In Spenser's *Faerie Queene*, a character who impersonates temperance or self-government.

HALLOWE'EN. October the 31st, the eve of All Saints' Day. Superstitiously regarded as the night of all others when supernatural influences prevail. Celebrated by fireside merrymaking and divinations of the future.

HAMLET. The hero of one of Shakespeare's most famous tragedies. Hamlet's father, the king of Denmark, has been secretly murdered by his brother, Claudius, who takes the kingdom and marries the queen. Hamlet, aroused to action by the ghost of his father, feigns madness, and gives up his love for Ophelia, the daughter of Polonius, the grand chamberlain, to avenge the king's death. Ophelia goes mad, her brother Laertes stabs Hamlet with a poisoned rapier, and is himself killed by the same weapon. Hamlet stabs his Uncle Claudius, his mother drinks the poison the king had intended for Hamlet, and all die.

HANS VON RIPPACH. A mythical personage for whom German students used to inquire, as a joke.

HANSWURST. In old German comedy, a fat and awkward clown, who was a huge eater and drinker, a practical joker, and a cowardly boaster. He was intended as a caricature of Harlequin.

HARRIS, MRS. See GAMP, SAIREY.

HELENUS. In Shakespeare's *Troilus and Cressida*, a son of Priam who has the gift of prophecy.

HERMEGYLD. In Chaucer's *Canterbury Tales*, a woman who was converted to Christianity through the efforts of Constance. She had the power of restoring sight to the blind.

HERMIA. See MIDSUMMER NIGHT'S DREAM.

HERMIONE. In Scott's *Fortunes of Nigel*, Lady Erminia, Heriot's ward, and the wife of Dalgarno.

He serves his party best who serves the country best. President Rutherford B. Hayes (1822-1881) in his Inaugural Address, delivered March 5, 1877.

HIAWATHA, THE SONG OF. A poem by Longfellow, founded on the Indian tradition that a being of miraculous birth was sent among them to clear the forests and teach them the arts of peace.

HIGH HEELS AND LOW HEELS. In *Gulliver's Travels*, two factions in Lilliput, one of which had high heels to their shoes and the other low heels. It was a satire on the High Church and Low Church parties in England, or Tories and Whigs.

HIGHLAND MARY. A poem by Robert Burns, referring to Mary Campbell, who was betrothed to the poet, but died in 1786.

HILDA. In Hawthorne's *Marble Faun*, a beautiful character who was called "the Dove" by her fellow artists. She was a young girl from New England, who went to Rome to study art, living at the top of the tower, where she kept the virgin's lamp burning and fed the doves. She was a friend of Miriam and of the sculptor Kenyon, whom she finally married.

HILDESHEIM. A monk, doubting how a thousand years could be as one day with God, listened to a bird for three minutes, as he thought, but the time consumed was 300 years. Longfellow tells this story in the *Golden Legend*.

HIPPOLYTA. In *Midsummer Night's Dream*, queen of the Amazons, betrothed to Theseus, Duke of Athens.

HOBSON'S CHOICE. A proverbial expression which really denotes no choice at all. It originated from the custom of one Tobias Hobson of Cambridge, England, a stable-keeper, who compelled each customer to take the horse next to the door.

HOLOFERNES. A character found in old Italian comedy, intended to satirize a pedantic schoolmaster. In Shakespeare's *Love's Labour's Lost* he is said to have "been at a great feast of languages and stolen the scraps," and is thought by some to be a caricature of Florio, an Italian teacher and dictionary maker in London.

HOLY GRAIL, THE. One of Tennyson's *Idylls of the King*, which relates the quest of the Grail by the knights of the Round Table, and Sir Galahad's success. The Holy Grail, in mediaeval legend, was supposed to be the cup made of emerald used at the Last Supper by Christ, and by Joseph of Arimathaea to catch the last drops of Christ's blood. Joseph was said to have carried it to Britain, where it remained until King Arthur's time, when its guardian, careless of his trust, sinned, and the holy cup disappeared.

HORATIO. In *Hamlet*, a noble character, Hamlet's most intimate companion.

HORTENSIO. In Shakespeare's *Taming of the Shrew*, one of the unsuccessful suitors of Bianca, who comes to teach her music under the name of Licio.

HOYDEN, MISS. A character in Vanbrugh's *The Relapse*, and also in Sheridan's comedy *A Trip to Scarborough*, a pert, ignorant country romp, daughter of Sir Tunbelly Clumsy. She is expected to marry Lord Foppington, but his young brother, Tom Fashion, personates his lordship and marries her.

HUGH OF LINCOLN. A boy eight years old, who is said to have been crucified in 1255 by the Jews of Lincoln, as a part of their religious ceremonies, and thrown into a pit. This story is found in the Chronicles of Matthew of Paris, in Percy's *Reliques*, and in the "Prioress's Tale" in the *Canterbury Tales*.

Hunde, wollt ihr ewig leben? (Hounds, would ye live forever?): Frederick the Great to his wavering troops at Kolin, June 18, 1757, wishing to make them charge for the seventh time.

HYPOCRITES' ISLE. An island described in one of Rabelais's satires, where sham saints, spiritual comedians, and other "sorry rogues" live.

I awoke one morning and found myself famous. Lord Byron (1788-1824): After the publication of the first two cantos of *Childe Harold*.

IBYCUS. See CRANES OF IBYCUS, THE.

IGNARO. In Spenser's *Faerie Queene*, the father of Orgoglio, who looked one way and walked another.

Il est mort guéri. (He died cured.) Delon a medical mesmerist, with regard to one of his patients who had died, when reminded of the promise he had made to cure him.

Il reviendra! (He will return!) Popular cry, dating from end of May, 1887, when General Boulanger (1837-1891) left the Ministry of War. In 1814, Napoleon being at Elba, the soldiers used to console themselves by repeating *"Il reviendra!"*

IMOGEN. See CYMBELINE.

INEZ. The subject of tragedies and novels in several languages, Camoëns introducing her story into his *Lusiad*. As lady in waiting to the wife of Dom Pedro, son of Alfonso IV., of Portugal, her beauty captivated Dom Pedro, and on his wife's death he secretly married her. Their stolen interviews in a convent were discovered, and the king determined that Inez should die. When Dom Pedro came to the throne he reinterred the body of Inez with the pomp and ceremony due to a queen.

ION. (1) A play by Euripides, the subject of which is Ion, son of Apollo and Creusa, who became the founder of the Ionian race, the scene being laid at the entrance of the Temple of Apollo at Delphi. Racine's *Athalie* is adapted from this. (2) A dramatic poem by Thomas Talfourd, the scene being laid in Argos. Ion, the king's son, offers himself as a sacrifice to stay a pestilence sent to punish the misgovernment of the reigning family.

IRAS. (1) Character in *Ben-Hur*. (2) One of Cleopatra's attendants in Shakespeare's *Antony and Cleopatra*.

IRON HAND, THE. In Goethe's historical drama, *Götz von Berlichingen*, the surname of the German baron, the hero from whom the drama is named, who loses his right hand and has an iron one fitted to his arm.

ISABELLA. In Shakespeare's *Measure for Measure*, Claudio's sister, whose gentle goodness wins the heart of Vincentio, duke of Vienna.

ISLAND OF ST. BRANDAN or **SAN BORANDAN.** A wonderful flying island mentioned in mediæval legends, which was sometimes suddenly visible, but always eluded search.

ISLE OF LANTERNS. In Rabelais's *Pantagruel*, an island where the Lanternois, people who pretended to be very learned, lived.

ISRAFIL. In the *Koran*, the angel who makes music in Paradise for the faithful, and who will sound the trumpet for the resurrection at the Day of Judgment.

ITHURIEL. In *Paradise Lost*, an angel sent by Gabriel with Zephon to find Satan in the Garden of Eden.

IVANHOE. The hero of Scott's historical romance of the same name.

IVAN IVANOVITCH. A nickname for a Russian as John Bull is for an Englishman.

IVORY GATE OF DREAMS. Mentioned in Vergil's *Aeneid*. Dreams which delude pass through the ivory gate, this poetical conceit arising from a pun on two Greek words.

I will die in the last ditch. William III. (1650-1702) to the duke of Buckingham: "There is one certain means by which I can be sure never to see my country's ruin—I will die in the last ditch."

I would rather be right than be president. Henry Clay to Mr. Preston of Kentucky, when told that the measures which he advocated would injure his chances of becoming president.

Jamais l'Italie ne s'emparera de Rome! (Never shall Italy take possession of Rome!) Eugene Rouher (1814-1884) at the time that Garibaldi threatened Rome, said Dec. 5, 1867): " . . . . l'Italie ne s'emparera pas de Rome! Jamais." (Italy shall not take possession of Rome! Never.) Often alluded to as the "jamais de Rouher." (Rouher's "never.")

JANUARY AND MAY. A poem by Alexander Pope, taken from the "Merchant's Tale" in the *Canterbury Tales*. May is a young girl who marries January, an aged lord.

JAQUENETTA. A country damsel in Shakespeare's *Love's Labour's Lost*, to whom both Costard, the clown, and Don Adriano, the Spaniard, make love.

JAQUES. In Shakespeare's *As You Like It*, one of the attendants on the exiled duke, a philosopher who has been a man of the world, but now delights in melancholy.

JARLEY, MRS. In Dickens's *Old Curiosity Shop*, the kind-hearted proprietress of "Jarley's wax-work show," who hires Little Nell to exhibit the figures.

JARNDYCE, JOHN. In Dickens's *Bleak House*, guardian of Esther Summerson, and one of the parties in the celebrated Chancery suit of "Jarndyce vs. Jarndyce."

JAVERT. A strange character in Victor Hugo's *Les Miserables*, a stern, hard official who hounds Jean Valjean without mercy, even though he knows his blameless and beneficent life in later years. When compelled by common decency, in return for Valjean's saving his life, to finally spare him, he drowns himself in the Seine.

JEANNOT or **JANOT.** A name used by the French proverbially, to denote a simpleton.

JEAN POTAGE. A character in French comedy similar to that of Hanswurst in German.

JEKYLL, DR. See STRANGE CASE OF DR. JEKYLL AND MR. HYDE.

Je ne lis plus, Monsieur, je relis. (I no longer read, sir; I reread.) Remark made by P. P. Royer-Collard (1763-1845) to A. de Vigny (1797-1863), a candidate for the French Academy.

JENKINS. A term applied to a society reporter of a newspaper, particularly one who flatters the wealthy or those of high social or official rank. *Punch* first used the name.

JESSICA. The "wise, fair, and true" daughter of Shylock, the Jew, in Shakespeare's *Merchant of Venice*.

JOYEUSE. The sword of Charlemagne.

JOYEUSE-GARDE or **GARDE-JOYEUSE.** In the *Arthurian Romances*, the castle given by King Arthur to Lancelot, as a reward for avenging Sir Mador's insult to the queen.

JULIET. See ROMEO AND JULIET.

JULIUS CAESAR. One of Shakespeare's finest tragedies, the plot of which hinges on the assassination of Caesar, and the civil war in which Brutus and Cassius were killed. Casca, Antony, Calpurnia, and Portia are other important characters.

KADR, AL. The night on which the Koran is supposed to have been sent down to Mohammed.

KALEVALA. Finland's national epic, composed of ancient popular songs forming a poem of fifty cantos.

KATHARINE. See TAMING OF THE SHREW.

KETCH, JACK. The popular name for a hangman probably derived from John Ketch, an odious executioner in James II.'s reign.

KILKENNY CATS. The famous cats which fought and fought till there was nothing left but their tails.

KILMANSEGG, MISS. In Hood's poem, *A Golden Legend*, an heiress with great expectations and an artificial leg of solid gold.

KING LEAR. Shakespeare's tragedy. A legendary king of Britain, who has three daughters, plans, as age advances, to divide his property among them, but is persuaded by two of them (Goneril and Regan) to give it to them, disinheriting the third daughter (Cordelia) who is a "perfect woman." These two daughters drive the king mad by their conduct, which is the theme of Shakespeare's tragedy.

KLAUS, PETER. The Rip Van Winkle of German tradition.

KNECHT RUPRECHT. The patron saint of children in Germany, who brings them Christmas gifts.

KNIGHT OF THE SWAN. Lohengrin, so-called because he journeyed in a boat drawn by a swan.

KOPPENBERG HILL. The mountain into which the children followed the piper, in Browning's *Pied Piper of Hamelin*.

KRIEMHILD or **CHRIEMHILD.** The heroine of the Nibelungenlied, the sister of Gunther, king of the Burgundians, and the wife of Siegfried, after his death marrying Etzel, king of the Huns. She is the Gudrun of the *Volsunga Saga* and the *Edda*.

KUBLA KHAN. A fragment of a poem by Samuel Taylor Coleridge, which he is said to have written from recollections of a dream after reading a description of Khan Kubla's palace.

Kulturkampf (War of civilization). Professor Virchow claims that this word, which has met with such wide adoption as describing the conflict between Church and State in Germany, was invented by him. (*Speech in Madgeburg*, Oct. 16, 1876.) Virchow, however, had been anticipated by Ferdinand Lassalle, the Socialist, who made use of the term in an essay entitled *Gotthold Ephraim Lessing*, published in 1861.

L'abime de Pascal. (Pascal's abyss.) Saying, meaning an imaginary gulf, derived from an accident that happened to Blaise Pascal (1623-1662) near the Seine, from which he narrowly escaped with his life. After the accident Pascal was haunted by the idea that there was always an abyss by his side ready to swallow him.

LACEDAEMONIAN LETTER, THE. The smallest of all letters, the Greek "iota."

LADY DAY. The 25th of March. The day of the Annunciation.

LADY OF LYONS, THE. A play by Bulwer-Lytton, the heroine of which is Pauline Deschappelles, whose father is a wealthy merchant. In her pride she refuses the suits of Beauseant, Glavis, and Claude Melnotte. The three plot to humble the lady. Claude, under the name of the prince of Como, marries Pauline, and when he takes her to his mother's humble home, flies from her indignant protests, and joins the French army. After two years, he returns a colonel, finds Pauline about to marry Beauseant in order to help her father out of financial difficulties, pays all the debts, and wins the once haughty lady to be his loving wife.

LADY OR THE TIGER, THE. A tantalizing story by Frank R. Stockton, in which the reader is left to guess at the fate of the hero, whether he opened the door behind which is a lovely maiden, or the one where a tiger lies in wait.

LAERTES. See HAMLET.

LAKE POETS, LAKE SCHOOL, LAKERS, or LAKISTS. Terms originally given in ridicule by the *Edinburgh Review* to Wordsworth, Coleridge, Southey, and some minor poets who lived in the lake district of Cumberland, England, and who were friends.

L'alphabet est à tout le monde. (The alphabet belongs to everybody.) Jacques Casanova (1725-1803), when his title of De Seingalt was questioned.

LAMIA. A poem by Keats founded on the myth of Lilith. A young man finds that his beautiful bride is really a lamia, a monster with the head and breast of a woman, but the body of a serpent.

LANCELOT, or LAUNCELOT, SIR. Sometimes called Lancelot du Lac, because Vivian, Lady of the Lake, stole him from his father, King Ban of Brittany, and brought him up. He was considered the strongest, bravest, and handsomest knight of the Round Table, and performed many wonderful deeds, but caused the breaking up of the Round Table and retired to a monastery.

LAND OF WISDOM. Normandy of France, noted for its just and wise laws.

LAUNCE. In *Two Gentlemen of Verona*, a servant of Proteus and owner of the dog Crab.

LAVINIA. (1) In the *Aeneid*, the daughter of Latinus, betrothed to Turnus. Her father gave her to Aeneas, and Turnus was conquered by Aeneas in the war which ensued. (2) In Shakespeare's *Titus Andronicus*, the daughter of Titus and the betrothed of Bassianus. (3) In Thomson's *Seasons*, the daughter of Acasto, the former patron of Palemon. When Lavinia's father becomes poor, Palemon, seeing her gleaning in his fields, discovers her identity and marries her.

LAY OF THE LAST MINSTREL, THE. A poem by Sir Walter Scott, in which an old minstrel relates the story of one of the frequent border contests.

LEATHERSTOCKING TALES, THE. A series of five stories by James Fenimore Cooper, so called from Leatherstocking, otherwise Natty Bumppo, who appears in each. They are *The Deerslayer*, *The Last of the Mohicans*, *The Pathfinder*, *The Pioneer*, and *The Prairie*.

Le cléricalisme, voilà l'ennemi! (Clericalism, there's the enemy!) Concluding words of L. Gambetta's (1838-1881) speech in the French Chamber, May 4, 1877, quoting the phrase as being that of his friend Peyrat—Alphonse Peyrat, a journalist, who died in 1891.

LEGEND OF THE CENTURIES, THE. A collection of epic poems by Victor Hugo.

LEG OF MUTTON SCHOOL. A term given by Lockhart to a class of minor writers and critics, who, in their writings, flattered their wealthy patrons in hope of hospitality.

LENORE. (1) A famous German poem by Burger, based on a Dutch ballad. Lenore's dead lover appears to her, and takes her with him, on horseback, to the graveyard where their marriage is celebrated among goblins and ghosts. (2) The title of one of Poe's poems, and alluded to in his *Raven*.

LEONATO. In Shakespeare's *Much Ado About Nothing*, the governor of Messina and father of Hero, who is too easily led to believe the accusations against his daughter.

LEONINE. In Shakespeare's *Pericles*, the attendant of Dionyza to whom she deputed the murder of Marina, and who was saved from the crime only by the interference of pirates.

LITTLE DORRIT. A novel by Dickens. Much of the story centers around the Marshalsea prison, where Amy (Little Dorrit) was born, her father, a poor debtor, being imprisoned for so many years that he is called the "Father of the Marshalsea."

LITTLE ILIAD, THE. A Greek epic poem in four books, supposed to have been written by Lesches, a Lesbian. It relates the events after the death of Hector to the introduction of the wooden horse into Troy.

LOCKSLEY. The name which Robin Hood assumed at the tournament, in Scott's *Ivanhoe*.

LORELEI. In German poetry and romance, a siren supposed to haunt the Lurlenberg rock on the Rhine, and lure sailors and fishermen to destruction. She is the subject of a beautiful ballad by Heine.

LORNA DOONE. A novel by R. D. Blackmore. The scene is laid in Exmoor. John Ridd, a young giant, tells the story of his rescue of Lorna (really Lady Lorna Dugal), from the Doones, a family of robbers and outlaws, who had their stronghold in an almost inaccessible place in the Doone Valley, his breaking up of the band, and his marriage to Lorna.

LUCENTIO. In Shakespeare's *Taming of the Shrew*, the successful suitor of Bianca, who, having come to Padua to study, falls in love with Bianca at first sight, and to win her becomes her instructor in Latin under the name of Cambio.

LYCIDAS. (1) A shepherd in the third Eclogue of Vergil. (2) An elegiac poem by John Milton, written on the death of his college friend, Edward King, who was drowned while crossing to Ireland.

MAB, QUEEN. The name given by the English poets of the fifteenth and succeeding centuries to the imaginary queen of the fairies. In *Romeo and Juliet*, Shakespeare gives a famous picture of Queen Mab.

MABINOGION. A collection of Welsh fairy tales and legends, several of which relate to King Arthur and the Round Table and were taken from a manuscript volume of the fourteenth century called the *Red Book of Hergest*, preserved in the library of Jesus College, Oxford.

MACABER, or THE DANCE OF DEATH. In the Middle Ages in order to remind people that all must die, there was represented in poetry and painting a dance in which young and old participated, with the skeleton Death as partner.

MACBETH. A tragedy by Shakespeare, in which a king of Scotland is immortalized. Three witches predict that Macbeth shall be king, and, urged by his ambitious and wicked wife, he proceeds to bring the prophecy to pass by killing King Duncan, his guest, and seizing the crown. He slays Banquo and the family of Macduff, who has gone to England for help, and then feels at ease, since the witches say that none born of woman shall kill him, nor shall he die till Birnam Wood shall come to Dunsinane, his castle. But one day he is told that Birnam Wood is coming, and he goes forth to meet Macduff and his soldiers bearing great branches to conceal their numbers. Macduff puts an end to Macbeth, fulfilling the prophecy of the moving wood.

MACDUFF. See MACBETH.

MACHEATH, CAPTAIN. A gay, bold ruffian, hero of *The Beggar's Opera* by Gay.

MAGNANO. In Butler's *Hudibras*, one of those who assaulted Hudibras at a bear-baiting.

MAID OF ATHENS. The heroine of a song by Lord Byron. She is said to have been Theresa Macri, with whom Byron became acquainted in Athens.

MAID OF THE MIST. An appellation of Anne of Geierstein.

Mais nous avons changer tout cela. (But we have changed all that.) From *Le Medicin malgré lui*, by Molière.

MALAGIGI. In the *Charlemagne Romances*, a hero who was the cousin of Rinaldo, and, being brought up by a fairy, became a famous enchanter.

MALBECCO. In Spenser's *Faerie Queene*, a crabbed old earl, wealthy but stingy, who has married a young wife, and lives in a constant state of suspicion as to her affection for him.

MALEBOLGE. In Dante's *Inferno*, a place in the eighth circle, which was divided into ten pits, each apportioned to a different class of criminals.

MALECASTA. In Spenser's *Faerie Queene*, the owner of Castle Joyous, and the personification of lust.

MALEGER. In Spenser's *Faerie Queene*, the son of the Earth, who became stronger whenever he touched her, so that Arthur had to cast him into a lake in order to overcome him.

MALENGIN. In Spenser's *Faerie Queene*, the personification of guile.

MALKIN. A clown who personated Maid Marian in the May Day revels.

MAMBRINO. In Italian and Spanish poetry and romance, a Moorish king who possesses a golden helmet by which he is rendered invisible and invulnerable. In Boiardo's *Orlando Innamorato*, and Ariosto's *Orlando Furioso*, it was eagerly sought for by Charlemagne's knights, and Rinaldo was said to have won it.

In *Don Quixote* the knight wears a barber's basin and calls it Mambrino's helmet.

Manners makyth man. William of Wykeham, bishop of Winchester and Lord High Chancellor of England (1324-1404): Motto inscribed on buildings founded by him at Oxford and Winchester.

MARIA. (1) In Shakespeare's *Twelfth Night*, Olivia's waiting woman, shrewd and witty, who captures Sir Toby Belch through her cleverness in arranging a practical joke upon Malvolio. (2) In *Love's Labour's Lost*, one of the three lively attendants of the princess, whose theme for praise is Longaville.

MARION DELORME. (1) A play by Victor Hugo. (2) In Bulwer-Lytton's *Richelieu*, a character who betrays to Richelieu all the plans of the conspirators, who meet at her house.

MARKSMAN. In *Fortunio*, that one of Fortunio's seven servants, who had such keen sight that he had to blindfold his eyes, in order to temper his sight.

MARTEXT, SIR OLIVER. A vicar in Shakespeare's *As You Like It*.

MARTIN CHUZZLEWIT. The hero of a novel of the same name by Charles Dickens.

MASSEY, BARTLE. In George Eliot's *Adam Bede*, a schoolmaster who had a great contempt for all womankind.

MAUPRAT, ADRIEN DE. In Bulwer-Lytton's *Richelieu*, the "wildest gallant and bravest knight of France," who marries Julie de Mortimar.

MAUTHE DOG. Note at beginning of Scott's *Peveril of the Peak*. A "specter hound" which haunted the castle of Peel town, Isle of Man, at night in the guard room, in whose presence all soldiers forbore profanity.

MEASURE FOR MEASURE. A comedy by Shakespeare. The duke of Vienna, Vincentio, desiring to improve the morals of his city, makes Angelo his deputy with injunctions to enforce the laws, and, pretending to go on a journey, disguises himself as a friar, and watches his subjects. Claudio is sentenced to death by Angelo, and when his sister Isabella goes to intercede for his life she finds that Angelo, hitherto the pattern of virtue, is really as bad as her brother, his price for Claudio's pardon being Isabella's honor. Vincentio, in his role as a friar, learns everything, saves Claudio's life, outwits Angelo, and then marries Isabella.

MEDECIN MALGRE LUI, LE. (The Doctor in spite of himself.) A comedy by Molière. Sganarelle, a fagot maker, called in by Geronte to cure his daughter, Lucinde, of dumbness, discovers that the girl is pretending to be dumb, to avoid a marriage with Horace, who has been chosen by her father. He recommends Leandre, her lover, as an apothecary, and a cure is soon effected.

MEJNOUN AND LEILAH. Typical lovers in Oriental literature, as "Pyramus and Thisbe" are in classical writings.

MELANTIUS. In Beaumont and Fletcher's *Maid's Tragedy*, the brother of Evadne, a brave soldier, trusting and unsuspecting of evil, but swift to punish an evil doer when discovered.

MELIBEE. A shepherd, in Spenser's *Faerie Queene*, the supposed father of Sir Calidore's wife, Pastorella. Melibee is supposed to be intended for Sir Francis Walsingham, and Calidore for Sir Philip Sidney.

MELIBOEUS. (1) The name of a shepherd in the first Eclogue of Vergil. (2) in Chaucer's *Tale of Meliboeus*, the husband of Prudence, who was noted for her meek and forgiving spirit.

MELISSA. (1) In *Orlando Furioso*, an enchantress who lived in Merlin's cave. (2) A character in Tennyson's *Princess*.

MERCHANT OF VENICE. A comedy by Shakespeare. Antonio, a kind-hearted merchant of Venice, in order to lend his friend Bassanio some money, has to borrow of Shylock, the Jew, who requires him to sign a bond that he will forfeit a pound of flesh if the money is not forthcoming in three months. Bassanio, well-equipped with this money, wins the fair Portia's hand, but on the marriage day, receives word that Antonio's ships and money have not arrived, and Shylock demands the pound of flesh. Bassanio hastens to the rescue, and Portia, too, disguised as a judge, appears on the scene, tries the case, and decides that Shylock may have his pound of flesh,—provided that he take not one drop of blood, on peril of his life. Shylock is outwitted, and all are happy except him.

MERCHANT'S TALE, THE. Chaucer. The story of an old man's betrayal by his young wife. Variously treated.

MERCUTIO. In Shakespeare's *Romeo and Juliet*, the lively friend of Romeo, who, Romeo says, "loves to hear himself talk." He is killed in a street quarrel, by Tybalt, a Capulet.

MERCY. In Bunyan's *Pilgrim's Progress*, a young maiden who accompanies Christiana and her children on the journey to the Celestial City.

MERLIN. In the *Arthurian Romances*, a powerful wizard, the counselor of King Arthur, who was reputed to have made the Round Table, and to have brought the stones of Stonehenge from Ireland.

MERRY WIVES OF WINDSOR, THE. A comedy by Shakespeare. Mrs. Ford and Mrs. Page are the merry but honest wives who make Falstaff, their would-be lover, a laughing stock, playing one trick after another on the old rascal, who escapes the wrath of the jealous Ford by being carried out in the soiled clothes by the servants and dumped into the Thames. At last, keeping a midnight appointment at Herne's oak, he is surrounded by pretended fairies who burn him with their tapers and pinch him black and blue for his sins.

MICAWBER, MR. WILKINS. One of the best known of Dickens's characters, with whom David Copperfield lodged at one time.

MIDSUMMER NIGHT'S DREAM. A comedy by Shakespeare, the plot of which turns upon a law of Athens that a daughter refusing to marry the man of her father's choice may be put to death. Egeus has promised his daughter Hermia to Demetrius, but she loves Lysander, and flees with him to the forest. Demetrius pursues her and is followed by Helena, who loves him. All fall asleep in the forest and are bewitched by the fairy Puck, directed by Oberon, king of the fairies, who plays pranks upon his queen Titania. After every one has fallen in love with the wrong person for a time, Puck anoints the second time with better success, and finally Demetrius marries Helena, and Egeus gives Hermia to Lysander.

MIGNON. In the first part of Goethe's *Wilhelm Meister*, a beautiful and petite Italian girl, daughter of an old harper, who falls in love with Wilhelm. Unable to endure unrequited love, she becomes insane and dies.

Mind is the great lever of all things. Daniel Webster (1782-1852): In an address at the laying of the corner stone of the Bunker Hill Monument, June 17, 1825. Followed by "Human thought is the process by which human ends are alternately answered."

MIRANDA. In Shakespeare's *Tempest*, the sweet-natured, innocent daughter of Prospero.

MISERERE. The fifty-first Pslam, "the psalm of mercy."

MORRIS or MORRICE (MOORISH) DANCE. A dance formerly common in England, frequently given in connection with pageants or May Day festivities.

MORRIS, DINAH. See ADAM BEDE.

MORTE D'ARTHUR. A poem by Tennyson, which is called "The Passing of Arthur," in the *Idylls of the King*. It relates the last battle of Arthur and his knights with Sir Modred and his followers, the casting of Excalibur into the lake by Sir Bedivere, and the embarkation of the king on the dusky barge which sailed away with him and the three queens.

MOTH. In *Love's Labour's Lost*, a pert, witty page who served De Armado, the Spaniard.

MOTHER BUNCH. (1) A celebrated ale-wife who lived in the sixteenth century, mentioned in Dekker's *Satiromastix*, and in a book entitled *Pasquil's Jests Mixed with Mother Bunch's Merriments*, published in 1604. (2) The imaginary author of a book entitled *Mother Bunch's Closet Newly Broke Open*, containing "Rare Secrets of Art and Nature," etc., published in 1760.

MUCH ADO ABOUT NOTHING. A comedy by Shakespeare, the scene of which is laid in Italy. Hero, the daughter of Leonato, the governor, is repudiated at the altar, by Claudio, her bridegroom, who has been convinced by the vicious Don John that Hero has had clandestine meetings with him. Hero faints and is reported dead. Then the maid, who has been bribed by Don John, confesses that she has impersonated her mistress, and Claudio and Hero are united.

MULVANEY. In Kipling's *Soldiers Three*, an Irish private in the army of India, reckless, good-tempered, and witty, the chief of a triad of adventuresome spirits who remind us of Alexandre Dumas's *Three Musketeers*.

MUTUAL ADMIRATION SOCIETY. A nickname given in Paris to the *Société d' Observation Medicale*, and used in English literature to designate people who compliment each other and who apparently warmly admire each other's works.

NATHAN DER WEISE (NATHAN THE WISE). A poetical drama by Lessing, the chief personage of which is Nathan, a noble and persecuted Jew, a character said to have been drawn from Moses Mendelssohn, the noted philosopher and grandfather of Mendelssohn-Bartholdy, the famous composer.

Necessity is the argument of tyrants; it is the creed of slaves. William Pitt, in a speech on the Indian bill, November 18, 1783, in the House of Commons. "Necessity is the plea for every infringement of human freedom. It is the argument of tyrants; it is the creed of slaves."

NEPENTHE, NEPENTHES (removing all sorrow). A drug mentioned in ancient literature as relieving pain, and producing exhilaration of spirits.

NEWCOME, COLONEL. One of the most lovable characters in literature. He is the father of Clive Newcome, the hero in Thackeray's novel, *The Newcomes*.

NEW ENGLAND PRIMER. A small primer published first in Boston, Mass., near the close of the seventeenth century, and reprinted yearly for many years, with some changes, for use in the schools.

NEW ENGLAND TRAGEDIES, THE. The third part of the trilogy *Christus*. The first tragedy, entitled *John Endicott*, deals with the Quaker persecutions in Massachusetts; the second, *Giles Corey*, with the witchcraft delusion in Salem.

NIBELUNGS. Whoever possessed the Nibelungs' hoard were called Nibelungs, the original ones being a race of dwarfs in Norway, so-called from their king Nibelung.

NICHOLAS NICKLEBY. The hero of Dickens's novel of that name.

NINE ORDERS. In a treatise entitled *The Celestial Hierarchy*, probably of the fifth century, the angels are classified into nine orders: Seraphim, Cherubim, Thrones, Dominions, Virtues, Powers, Principalities, Archangels, Angels.

NINE SPHERES. According to the ancient astronomy before the time of Copernicus the heavens were divided into circles or spheres. It was supposed that the moon, Mercury, Venus, the sun, Mars, Jupiter, and Saturn moved in spheres around the earth, the eighth being that of the fixed stars, and the ninth the Primum Mobile, which revolves once every twenty-four hours, and gives motion to all the inner spheres. Outside of the ninth was the Empyrean, or Heaven of Heavens, which was immovable. Dante based his *Paradise*, and Milton his *Paradise Lost*, on this hypothesis.

NINE WORTHIES. Joshua, David, and Judas Maccabaeus, three Jews: Hector, Alexander, and Julius Caesar, three pagans; Arthur, Charlemagne, and Godfrey of Bouillon, three Christian knights. Often classed together in allusions.

NUCTA. The miraculous drop which falls in Egypt on St. John's Day in June, believed to stop the plague. Moore's *Paradise and the Peri*.

NUT BROWN MAID, THE. An old English ballad supposed to have been written in the fifteenth century.

NYM. One of Sir John Falstaff's followers, in Shakespeare's *King Henry V.*, and also in the *Merry Wives of Windsor*. He is a rogue and sharper, his name, "nym," meaning, in the language of thieves, to steal.

OBERON. In literature, the king of the fairies, whose queen is sometimes Mab, sometimes Titania. In old German tales, Oberon is the powerful elfin dwarf Elberich or Alberich. In *Huon de Bordeaux*, he is called Oberon the Fay.

OLD GLORY. A popular name for the American flag, given it by the Union soldiers in the Civil War.

OLD GRIMES. (1) A tale in verse by Crabbe, an English poet. (2) A popular ballad by Albert Greene, an American poet, which is sometimes sung to the tune of "Auld Lang Syne."

OLD MAN OF THE MOUNTAIN. (1) A title given to the grand master of a Persian secret military and religious order who established themselves in the mountains of Lebanon in Syria. The Arabic "Hashashin," (hashish smokers), by which they were known, became "Assassin" in the European languages. (2) A name given to a formation of rock in the White Mountains, which resembles the profile of an old man, and was made the subject of one of Hawthorne's tales.

OLD MAN OF THE SEA. (1) In Greek poetry, Nereus, a wise old man living at the bottom of the sea who could appear to mortals under different guises, and could foretell events. In the *Odyssey*, Proteus is thus described. (2) In *Sindbad the Sailor*, a tale of the *Arabian Nights*, he is a monster who leaps upon Sindbad's back, and is not dislodged until Sindbad gets him intoxicated.

OLIVANT. The wonderful horn of Roland which could be heard for twenty miles.

OLIVIA. In Shakespeare's *Twelfth Night*, the rich countess who falls in love with Viola dressed as a page, and finally marries Sebastian, her twin brother.

One, on God's side, is a majority. Wendell Phillips (1811-1884): In a speech at Brooklyn, on John Brown, November 1, 1859.

OPHELIA. See HAMLET.

ORGOGLIO. See DUESSA.

ORIANA. (1) In the romance *Amadis de Gaul*, the wife of Amadis. (2) A title given to Queen Elizabeth by the poets of her time. (3) The title of a ballad by Tennyson, in which the name is repeated after the first, second, fifth, and sixth lines of every one of the six-lined stanzas.

ORLANDO. See AS YOU LIKE IT.

ORMULUM. A paraphrase of Scripture in Anglo-Saxon verse; called from Orm or Ormin, the author (thirteenth century).

ORPHEUS AND EURYDICE. A beautiful story told by Vergil and Ovid, and the subject of many poems, among them *The Power of Music*, by Wordsworth; *Eurydice to Orpheus*, by Browning; *Orpheus and the Sirens*, by William Morris, and *Eurydice*, by James Russell Lowell.

ORSINO. See TWELFTH NIGHT.

OTHELLO. A tragedy by Shakespeare. Othello, general of the Venetian army, though a Moor, wins the heart of Desdemona, daughter of Brabantio, because of his art in telling stories. Sent to Cyprus against the Turks, he takes his bride with him, and promotes Cassio, his messenger in the courtship, to be lieutenant, thus arousing the anger and spite of an older officer, Iago. This wily schemer insinuates to Othello that Desdemona loves Cassio, and the jealous Moor, beside himself with anger, smothers his loving wife. When Cassio, who barely escaped Iago's hired assassin, proves his innocence, Othello, filled with remorse, falls upon his sword in despair, and Iago is sentenced to death by torture.

OXENFORD, CLERK OF. In Chaucer's *Canterbury Tales*, one of the pilgrims, a true scholar, glad to learn, and glad to teach.

PACOLET. (1) In *Valentine and Orson*, a dwarf with a wonderful winged horse on which he carries away Valentine, Orson, and Clerimond from the dungeon of the giant Ferragus. "To ride Pacolet's horse" means to go very swiftly. (2) In the *Tatler*, the name of a familiar spirit.

PAGE, ANNE. In Shakespeare's *Merry Wives of Windsor*, a young girl who has seven hundred pounds left her. Three suitors appear, Slender, approved by her father; Dr. Caius, encouraged by her mother, and Fenton, whom she chooses and ultimately marries.

PALAMON AND ARCITE. The heroes of the *Knight's Tale*, in Chaucer's *Canterbury Tales*. Rivals for the hand of Emelye.

PALEMON. (1) See LAVINIA. (2) In Falconer's *Shipwreck*, a man in love with the daughter of the ship's commander.

Panat fait tache dans la boue (Panat makes even mud dirtier). Saying of Rivarol (1753-1801) alluding to the untidy appearance of the Chevalier de Panat.

PANGLOSS, DR. A character in Colman the Younger's comedy *The Heir at Law*, intended as a satire on the tutors of the day. In Voltaire's *Candide*, Dr. Pangloss is the tutor of Candide.

PANJANDRUM, THE GRAND. A character invented by Samuel Foote, and introduced into some disconnected and senseless lines written to test the memory of an actor. It is now used facetiously for any high local official.

PANTAGRUELIAN LAW CASE. Rabelais. (Lord Busqueue *vs.* Lord Suckfist.) As all the Parisian judges were nonplused by this case, Lord Pantagruel's decision was requested. After long unintelligible testimony by both parties, the bench referred to Lord Pantagruel, who gave sentence; his judgment was as obscure as the case itself, so all were satisfied.

PARADISE OF FOOLS. A place in the world once popularly believed to be the abode of fools, idiots, and madmen. It is mentioned in Milton's *Paradise Lost*.

PARIAN CHRONICLE. A chronological record of the chief events of Grecian mythology and history found engraved on Parian marble.

PARIAN VERSE. Ill-natured satire: so named from Archilochus, a native of Paros.

PARIS. (1) In Greek poetry, the son of Priam, king of Troy, who eloped with Helen, wife of the king of Sparta, and thus caused the Trojan War. He is introduced into Shakespeare's *Troilus and Cressida*. (2) In *Romeo and Juliet*, a kinsman of the prince, and

the suitor of Juliet whom her parents favor. He is killed by Romeo at Juliet's tomb.

PARTINGTON, MRS. An amusing character in the *Life and Sayings of Mrs. Partington* by B. P. Shillaber. She makes ridiculous blunders in her conversation, using large words in a totally wrong connection. The name may have been suggested by the anecdote related by Sidney Smith in a famous speech, of the Mrs. Partington who in a storm tried to sweep back the Atlantic with her mop.

PARTLET. The hen in Chaucer's *Nun's Priest's Tale*, and in *Reynard the Fox;* so-called from the frill of feathers about the neck.

Passiver Widerstand. (Passive resistance.) Von Unruh, President of the National Assembly, November 10, 1848, at Berlin, when the national guard and the guilds of Berlin offered armed protection to the National Assembly. *Ich werde entschieden der Meinung dass hier nur passiver Widerstand geleistet werden könne.* ("I am decidedly of opinion that only passive resistance should be rendered in this case.")

PASTORELLA. In Spenser's *Faerie Queene*, a shepherdess beloved by Corydon, but she returns Sir Calidore's love. She was intended for Frances, daughter of Sir Francis Walsingham, and Sir Philip Sidney's wife.

PAULINA. In Shakespeare's *Winter's Tale*, the wife of Antigonus, and the brave, quick-witted, and warm-hearted friend and champion of Hermione.

PAULINE. See LADY OF LYONS, THE.

PAUL PRY. A comedy by John Poole, in which the hero is an idle, impudent, meddlesome fellow, who is always interfering with other people's affairs, so that his name has become the term by which meddlers are designated.

PAWNBROKER'S SIGN, ORIGIN OF. It is generally held that the three golden balls used by pawnbrokers as a sign were adopted from the armorial bearings of the Medici family of Italy by the Lombard merchants, among whom were several representatives of that family. This sign was used in London in very early times by some of those merchants who had emigrated from Italy and established the first money-lending establishments in England.

PEASEBLOSSOM. In *Midsummer Night's Dream*, a fairy attending Queen Titania.

PEDRO, DON. In Shakespeare's *Much Ado About Nothing*, the prince of Aragon, who contrives a plan to make Beatrice think Benedick in love with her, at the same time leading him to think that she is hiding her love for him under her blunt speeches.

PEG WOFFINGTON. A novel and a play by Charles Reade, the heroine of which is Margaret Woffington, a celebrated actress in the time of George III.

PERCIVAL, SIR. In the *Arthurian Romances* and Tennyson's *Idylls of the King*, the third son of Pellinore, and one of the few knights who were privileged to behold the Holy Grail.

PERICLES. Prince of Tyre, in Shakespeare's play of the same name.

PETRUCHIO. See TAMING OF THE SHREW.

PHILLIS, or PHYLLIS. A common name in Vergil, Spenser, Milton, and in all pastoral poetry, for a country maiden.

PHILTRA. In Spenser's *Faerie Queene*, a woman of wealth who cared more for money than for love, and because Bracidas, her lover, became poor, spurned him for his wealthier brother, Amidas.

PIETRO. In Browning's *The Ring and the Book*, the man who claimed Pompilia as his child in order to retain possession of certain property.

PISTOL. A character in Shakespeare's *Merry Wives of Windsor*, in the second part of *King Henry IV.*, and in *King Henry V.*, who is one of the boon companions of Falstaff, and an ale-house braggart. He marries Mistress Quickly.

Piu santi che uomini da bene. (More holy than good men themselves.) Florentine saying—applied to hypocrites who affect outward holiness of life, but are in their hearts worse than other men.

POLYDORE. In Shakespeare's *Cymbeline*, the name by which Guiderius was known while he was with Belarius.

POLYEUCTE. A tragedy in French by Corneille, from which several operas have been made. The plot is founded on the persecutions of the Christians under the Roman Empire.

POOR RICHARD'S ALMANAC. An almanac published first in 1732, by Benjamin Franklin, under the name of Richard Saunders, and continued for twenty-five years. It contained maxims, proverbs, and good advice illustrated by anecdotes; "Poor Richard's Sayings" became universally popular.

POOR ROBIN'S ALMANAC. An English almanac begun in 1661 and continued until 1828.

POPULAR NAMES OF CITIES. The nicknames given to the various prominent cities in the United States are as follows: Baltimore, Monumental City; Boston, Hub of the Universe; Brooklyn, N. Y., City of Churches; Buffalo, Queen City of the Lakes; Chicago, Garden City, Windy City; Cincinnati, Queen City; Cleveland, Forest City; Columbus, O., Arch City; Detroit, City of the Straits; Hannibal, Bluff City; Indianapolis, Railroad City; Keokuk, Gate City; Louisville, Falls City; Lowell, City of Spindles; Minneapolis, Flour City; Nashville, City of Rocks; New Haven, City of Elms; New Orleans, Crescent City; New York, Gotham, Empire City; Philadelphia, Quaker City, City of Brotherly Love; Pittsburg, Iron City; Portland, Me., Forest City; Rochester, Flower City; St. Louis, Mound City; San Francisco, City of the Golden Gate; Springfield, Mass., City of Homes; Springfield, O., Flower City; Washington, D. C., City of Magnificent Distances; Worcester, Faithful City, Heart of the Commonwealth.

PORTHOS. In Dumas's *Three Musketeers*, the tallest and largest of the three, whose mighty strength performed wonders for his friends as he followed them with a simple devotion.

PORTIA. (1) See MERCHANT OF VENICE. (2) One of Shakespeare's noblest women. In *Julius Caesar*, the wife of Brutus, who shows herself a true helpmeet.

PORTMANTEAU. A term first used by Lewis Carroll in *Alice in Wonderland*, for a word formed by telescoping, as it were, two words into one, thus combining the two meanings, e. g., "slithy," a portmanteau, of lithe and slimy; "frumious," from fuming and furious; "brunch," a late riser's breakfast and lunch combined.

Pourtant j'avais quelque chose là! (Yet I had something there!) Words uttered by the poet A. Chénier on the scaffold, July 25, 1794. Chénier said to his friend, the poet J. A. Roucher (1745-1794), who was executed the same day, *Je n'ai rien fait pour la postérité* (I have done nothing for posterity), and, striking his forehead, added the above words.

POYSER, MRS. In George Eliot's *Adam Bede*, the shrewd and capable wife of a farmer on Squire Donnithorne's estate. Her many wise and clever observations have become proverbial.

PROTEUS. (1) See OLD MAN OF THE SEA. (2) One of the two gentlemen in Shakespeare's *Two Gentlemen of Verona.*

PRUDENCE. The meek and forgiving wife of Meliboeus in Chaucer's *Tale of Meliboeus.*

PUFF, MR. In Sheridan's farce *The Critic*, a hack writer, who, having failed at other occupations, tries criticism for a living, and is a "professor of the art of puffing."

PYRAMUS AND THISBE. In Ovid's *Metamorphoses*, two lovers of Babylon, who lived in adjoining houses, and used to converse secretly through a chink in the wall. Once they agreed to meet at the tomb of Ninus. Thisbe, on arriving, beheld only a lioness that had killed an ox, and fled, leaving her mantle. The lioness stained the mantle with blood, and when Pyramus came, thinking the lion had eaten Thisbe, he stabbed himself under a mulberry tree, whose white berries afterwards became red. Thisbe, returning and finding Pyramus dead, killed herself with his sword. This story is burlesqued in *Midsummer Night's Dream.* (See BOTTOM, NICK.)

PYTHIAS. See DAMON AND PYTHIAS.

QUAVER. A singing master who courts Lucy by promising to give her singing lessons. (Fielding's *The Virgin Unmasked.*)

Que diable allait-il faire dans cette galère? (What the devil was he doing in that galley?) A celebrated question from *Les Fourberies de Scapin*, by Molière.

QUEEN'S MARYS. See FOUR MARYS, THE.

QUICKLY, MISTRESS. In Shakespeare's *King Henry IV.* and *King Henry V.*, the landlady of the Boar's Head Tavern, frequented by Falstaff and his followers. In *Merry Wives of Windsor*, the housekeeper of Dr. Caius and a gossip and meddler who is sure she knows Anne Page's mind.

QUIDNUNKIS. In Gay's *Quidnunkis*, a monkey that serves to point a moral. Climbing higher than its companions, it falls into a river and is lost.

QUILP, DANIEL. In Dickens's *Old Curiosity Shop*, a hideous dwarf, who was an object of dread to his pretty wife, Betsey, and to all who fell into his power. He came to his end by falling into the Thames while striving to avoid arrest.

QUINTUS FIXLEIN. The principal character in and title of a romance by Jean Paul Richter.

QUIRK, GAMMON AND SNAP. In Warren's *Ten Thousand a Year*, a firm of rascally lawyers who discover a flaw in the title of an old and wealthy family.

QUISADA. Same as DON QUIXOTE.

RABY, AURORA. In Byron's *Don Juan*, a young English girl, rich and an orphan, who visited at Lady Amundeville's when Don Juan was there.

RADIGUND, or **RADIGONE.** In Spenser's *Faerie Queene*, the queen of the Amazons.

RALPH ROISTER DOISTER. The first English comedy, by Nicholas Udall. Ralph is a vain, hare-brained fellow, who runs after Dame Christian Custance, a rich widow affianced to Gawin Goodluck. Her trifling with Ralph nearly causes a rupture between her and her lover, but all ends happily.

RAPHAEL. In literature, generally one of the seven archangels. In Milton's *Paradise Lost*, he is the messenger sent from heaven to admonish Adam and to warn him of his enemy. In Longfellow's *Golden Legend*, he is called the "Angel of the Sun."

RATTLIN, JACK. A sailor and noted character in Smollett's *Adventures of Roderick Random*.

RAYMOND. In *Jerusalem Delivered*, by Tasso, the Nestor of the Crusaders, who slew the king of Jerusalem, and set up the Christian standard upon the tower of David.

REBECCA. In Scott's *Ivanhoe*, the beautiful Jewess, daughter of Isaac of York.

Reptilienfonds (Reptile funds, referring to Secret Service money): Said by Prince Bismarck in an answer to the president of the Reichstag, January 30, 1869.

Responsible government. Phrase first used in 1829 in a petition presented to Parliament from Upper Canada.

RINALDO. In the mediæval romances, one of the four sons of Aymon, cousin of Orlando and nephew of Charlemagne, also known as Renaud and Regnault. In *Orlando Furioso*, Rinaldo is the rival of Orlando for the hand of Angelica, although she is indifferent to him. In *Gerusalemme Liberata*, he is the Achilles of the Christian army at the siege of Jerusalem.

RING AND THE BOOK, THE. A dramatic story in 12 books by Robert Browning, the story being that of the famous Franceschini case which involved two families at Arezzo, the Comparini and the Franceschini.

RODERIGO. In *Othello*, a rejected suitor of Desdemona, who is the tool of Iago in his designs against Cassio. Iago gets his jewels away from him on the pretense of gaining Desdemona's favor with them, and then kills him.

ROGER. The narrator of the "Cook's Tale" in Chaucer's *Canterbury Tales*, who could "roste, sithe, broille, and frie, make mortreux and wel bake a pye."

ROGERO or **RUGGIERO.** In Ariosto's *Orlando Furioso*, a young Saracen knight who falls in love with the Christian amazon Bradamante, and, after many vicissitudes, marries her.

ROLAND FOR AN OLIVER, A. To give blow for blow, or to be equally matched. Roland and Oliver, two of the most famous of the 12 paladins of Charlemagne, once fought five hours without either gaining the advantage; hence the saying.

ROMEO AND JULIET. A tragedy by Shakespeare. The Capulets and Montagues, two noble families of Verona, have a feud of long standing; Romeo, a Montague, goes to a masked ball at the Capulets one night and falls in love with Juliet, Lord Capulet's daughter. Friar Laurence, thinking that the deadly enmity between the two families may be healed, consents to marry them secretly the next day. Scarcely have they parted before Romeo kills Tybalt, a Capulet, in a street brawl, and is banished from the city. Juliet's father arranges an immediate marriage for her with Paris, a young nobleman. Friar Laurence gives Juliet a potion which will put her into a trance and meanwhile sends word to Romeo. Juliet apparently dies, and is placed in the tomb to which at night Romeo comes to mourn, having missed the friar's message. There he meets Paris, kills him in self-defense, and, taking poison, dies. Juliet awakens and beholding Romeo dead stabs herself.

ROSALIND. See AS YOU LIKE IT.

ROSALINE. (1) In *Romeo and Juliet*, Juliet's cousin, mentioned as the cold and indifferent object of Romeo's affection before he met Juliet. (2) In *Love's Labour's Lost*, one of the ladies in waiting of the princess of France. She is a lively maiden, of a merry, nimble, stirring spirit, being more than a match in raillery for Biron, who surrenders to her charm.

ROSCRANA. In Ossian's *Temora*, the daughter of Cormac, king of Ireland, who married Fingal and became the mother of Ossian.

ROSENCRANTZ and **GUILDENSTERN.** In Shakespeare's *Hamlet*, two courtiers, once schoolmates and friends of Hamlet, who are hired by the king to spy upon the prince, and to take him to England to be made way with.

ROUND TABLE. See ARTHURIAN ROMANCES, THE.

ROWENA. A character in Scott's *Ivanhoe*.

RUACH. The Isle of Winds visited by Pantagruel and his fleet, where the people live upon nothing but wind or flattery. *Rabelais.*

RUBEZAHL, called also **NUMBER NIP.** In German tales a sprite similar to the English Puck.

RUMPELSTILZCHEN. In German nursery tales, a dwarf who spins straw into gold for a miller's daughter.

RUY BLAS. A drama by Victor Hugo.

SACRIPANT, KING. In *Orlando Furioso*, king of Circassia. A noisy, hectoring braggart in *The Rape of the Bucket*.

SAMIAN LETTER, THE. The letter Y, used as an emblem of the narrow path of virtue, by Pythagoras.

SANDALS OF THERAMENES. A proverb applied to a "trimmer," one who is constantly changing. Theramenes was so named because he could not be depended upon.

SANSFOY, SANSJOY, and **SANSLOY.** Three brothers, in Spenser's *Faerie Queene*.

SANTA CLAUS, or **KLAUS.** The Dutch name for St. Nicholas, the patron saint of children.

SANTIAGO. Saint Iago means St. James. This was adopted as the war cry of Spain because St. James rendered great service to the king of Spain in a battle against the Moors.

SCARAMOUCH. A character in old Italian comedy taken from the Spanish; a buffoon whose distinguishing traits were cowardice and boastfulness.

SCHLEMIHL, PETER. In Chamisso's tale of that name, the person who sold his shadow to the devil. A synonym for any one who makes a silly or desperate bargain.

SCHNEIDER. Rip Van Winkle's dog, in Boucicault's dramatized version of Irving's *Rip Van Winkle*, "Wolf" being the name of the dog in the story.

SCOURGE OF GOD. (1) *Attila*, king of the Huns; so called in the Hungarian Chronicles. (2) *Genseric*, king of the Vandals.

SEBASTIAN. (1) In Shakespeare's *Tempest*, the ignoble brother of the king of Naples, who, urged by Antonio, plans to gain the throne by the murder of the king. (2) In Shakespeare's *Twelfth Night*, the twin brother of Viola, who so closely resembles her that strange complications arise, out of which results his sudden marriage to Olivia. (3) The name taken by Julia in *Two Gentlemen of Verona*, when she assumes masculine attire to seek her recreant lover, Proteus.

See, there is Jackson standing like a stone wall! Rally on the Virginians! General Bernard E. Bee, during the battle of Bull Run near Washington (June 21, 1861). The origin of the sobriquet "Stonewall," applied to General T. Jonathan Jackson (1824-1863).

SELITH. One of the two guardian angels of the Virgin Mary and St. John, the Divine. (Klopstock's *Messiah.*)

SEMPRONIUS. (1) In Shakespeare's *Timon of Athens*, a flatterer of Timon, who excuses himself from lending Timon money on the ground that others had been asked first.

SERBONIAN BOG. In *Paradise Lost*, the name given to the Lake of Serbon in Lower Egypt.

SERENA. In Spenser's *Faerie Queene*, a maiden carried off in the Blatant Beast's mouth while picking flowers in a meadow, but rescued by Sir Calidore.

SESAME. In the *Arabian Nights*, the magic word which opens and shuts the entrance to the cave of the Forty Thieves.

SEVEN AGES OF MAN, THE. (1) In Shakespeare's *As You Like It*, Act III. (2) The successive phases of man's life as characterized by Jacques: the mewling infant, the whining schoolboy, "the lover sighing like a furnace," the rough soldier, the plethoric middle-aged justice, grave and wise, the age of spectacles and "the lean and slippered pantaloon," and, last of all, second childhood, "sans teeth, sans eyes, sans taste, sans everything."

SEVEN CHAMPIONS OF CHRISTENDOM. In old ballads and romances, the seven saints each adopted by a different people as a national hero: St. George by England, St. Patrick by Ireland, St. Andrew by Scotland, St. David by Wales, St. Denis by France, St. James by Spain, and St. Anthony by Italy. An account of them is given in Richard Johnson's *Famous Historie of the Seven Champions of Christendom.*

SEVEN CHIEF VIRTUES, THE. (1) Faith, (2) Hope, (3) Charity, (4) Prudence, (5) Temperance, (6) Chastity, (7) Fortitude.

SEVEN DEADLY SINS. (1) Pride, (2) Covetousness, (3) Lust, (4) Anger, (5) Gluttony, (6) Envy, (7) Sloth.

SEVEN LAMPS OF ARCHITECTURE, THE. A work on architecture by John Ruskin. The lamps are certain rules which he intends shall make plain the path of the student and guard him against error. They are "Sacrifice," "Truth," "Power," "Beauty," "Life," "Memory," and "Obedience."

SEVEN LAMPS OF SLEEP. In Johnson's *Seven Champions of Christendom*, seven lamps in the house of the Knights of the Black Castle. Every one near them slept while these lamps were burning, and awoke only when they were extinguished by water from an enchanted fountain.

SEVEN SAGES, THE. Seven men in ancient Greece distinguished for their wisdom, sometimes called the "Seven Wise Men of Greece." They are Bias, Chilo, Cleobulus, Periander, Pittacus, Solon, and Thales, of the sixth and seventh centuries B. C.

SEVEN SLEEPERS OF EPHESUS, THE. In early Christian legend, seven noble youths who hid themselves in a cave to escape the persecution under the emperor Decius. They fell asleep, and on waking, two or three hundred years later, were surprised to find that the empire had become Christian.

SEVEN WONDERS OF THE WORLD, THE. The most famous structures of the ancients; The Pyramids of Egypt, the Mausoleum at Halicarnassus, the Hanging Garden of Babylon, the Temple of Artemis at Ephesus, the Colossus of Rhodes, the statue of Olympian Zeus, and the Pharos of Alexandria.

SGANARELLE. A favorite name with Molière, found in several of his comedies. (1) See MEDECIN MALGRE LUI, LE. (2) In *Le Mariage Forcé*, the rich old man compelled to marry Dorimene after he has discovered that she is marrying him for his money.

SHANDY, TRISTRAM. The nominal hero of Sterne's novel, *Tristram Shandy*.

SHARP, BECKY. In Thackeray's *Vanity Fair*, an unprincipled adventuress, one of the most famous characters in fiction.

SHYLOCK. See MERCHANT OF VENICE.

Si Dieu n'existait pas, il faudrait l'inventer. (If God did not exist, it would be necessary to invent him.) Voltaire, *A l'auteur du livre des Trois Imposteurs*.

SIGURD. A hero of the *Volsunga Saga*.

SIMON PURE. In Mrs. Centlivre's comedy, *A Bold Stroke for a Wife*, a young Quaker who seeks to marry the heiress, Anne Lovely, being approved by Obadiah Prim, one of her guardians; but Colonel Feignwell, who loves Anne, disguising himself as Simon, obtains Obadiah's consent to his marriage and Simon, too late, proves that he is the real Simon Pure. The name is now commonly applied to anything real or genuine.

SIR ROGER DE COVERLEY. A popular dance tune in England, from which Addison is said to have taken the name for his famous squire.

SLICK, SAM. In Haliburton's stories, a shrewd Yankee peddler and clock maker, whose wit and droll sayings make him an amusing character.

SLOP, DOCTOR. An irascible and opinionated physician in Sterne's *Tristram Shandy*.

SLOUGH OF DESPOND. In Bunyan's *Pilgrim's Progress*, a deep miry bog, into which Christian falls, and from which Help assists him to rise.

SOFRONIA. In Tasso's *Gerusalemme Liberata*, a Christian maiden of Jerusalem, who with her lover, Olindo, is condemned to death by Aladine, king of Jerusalem. Moved by Clorinda's solicitation, the king spares them, and they are happily married.

Songez que du haut de ces pyramides quarante siècles vous contemplent! Remember that forty centuries are looking down at you from the summit of these pyramids!) Napoleon's words to his soldiers (July 21, 1798) after landing in Egypt.

SPANKER, LADY GAY. In Boucicault's *London Assurance*, a lively woman, devoted to horses and hunting.

SPEED. In Shakespeare's *Two Gentlemen of Verona*, the quick-witted servant of Valentine, who is fond of punning.

SPENLOW, LAVINIA and **CLARISSA.** Dora's maiden aunts, two prim, formal little old ladies, with whom she lived before her marriage. (Dickens's *David Copperfield*.)

SQUIRE OF DAMES. In Spenser's *Faerie Queene*, a knight in love with Columbell. She decreed that he must serve for one whole year before she would be his bride. This knight proved to be Britomart (*q. v.*). The term is now often applied to a man who is fond of ladies' society.

STELLA. The name given by Swift in his writings to Esther Johnson, whom it is supposed he secretly married.

STENTOR. In Homer's *Iliad*, a Greek herald in the Trojan War, whose voice when he shouted was equal to that of fifty men. From his name the word stentorian is derived.

STEPHANO. (1) In Shakespeare's *Tempest*, a drunken butler, who plots with Caliban and Trinculo to seize the island and make himself king. (2) In *Merchant of Venice*, servant to Portia.

STRANGE CASE OF DR. JEKYLL AND MR. HYDE. A novel by Robert Louis Stevenson, setting forth with startling clearness the warring elements in man's nature. The hero of the story becomes at will (by taking a certain drug), Dr. Jekyll, a noble-minded physician, or Mr. Hyde, a villain, but in the end the evil triumphs over the good, Mr. Hyde commits a murder, Dr. Jekyll disappears forever, and Mr. Hyde destroys himself.

STREPHON. In Sir Philip Sidney's *Arcadia*, a shepherd, whose name is frequently used by poets to denote a lover.

STRONGBACK. In *Fortunio*, one of Fortunio's servants, who could carry any weight upon his back without feeling it.

SUMMER, ST. MARTIN'S. Shakespeare, in *Henry VI.*, calls it "halcyon days." From November 11 for thirty days it continues.

SWITHIN, ST. The legendary saint and tutor to King Alfred, who, at his death, desired to be buried in the churchyard. Wishing to honor him, the monks set a date to remove the body. It rained for forty days so that the project was given up; hence the famous rhyme:—

> "St. Swithin s day, gif ye do rain,
> For forty days it will remain;
> St. Swithin's day, an ye be fair,
> For forty days 'twill rain nae mair."

TABARD INN. An old inn, formerly in Southwark, London, which took its name from its sign, a sleeveless coat or tabard. The pilgrims of Chaucer's *Canterbury Tales* assembled there to start on their journey together.

Take it; thy necessity is greater than mine. Sir Philip Sidney (1554-1586) to a wounded soldier at the battle of Zutphen (September 22, 1586), who looked wistfully at some water which had been obtained with difficulty for Sir Philip, who was himself mortally wounded.

TAMING OF THE SHREW. A comedy by Shakespeare, relating the method by which Petruchio changed Katharine, a somewhat willful, imperious maiden, into a meek, obedient wife.

TAMMANY HALL. Powerful Democratic organization in New York City. The name was adapted from that of an Indian chief, Tammanund.

TAMORA. In Shakespeare's *Titus Andronicus*, the savage and detestable queen of the Goths.

TARGUM. A name given to the Chaldean or Aramaic version of the Old Testament.

TARTUFFE. One of Molière's best known comedies. Tartuffe is a hypocrite who, by pretending to be very religious, gets a man of wealth so completely under his influence that he nearly succeeds in ruining him financially.

TEAZLE, LADY. One of the principal characters in Sheridan's comedy, *The School for Scandal*.

TEMPEST, THE. One of Shakespeare's latest plays. The scene is laid on a haunted island in the Mediterranean. Prospero, the rightful duke of Milan, and Miranda, his daughter, having been set adrift in a boat, landed on this island to find Caliban, a deformed aborigine, and the powerful sprite Ariel. Gonzalo, Prospero's friend, had put into the boat some books of magic by whose aid men's spirits and the elements were subject to his wand. Antonio, who had supplanted Prospero, and his son Ferdinand, were shipwrecked near this island, but all were saved.

TESSA. In George Eliot's *Romola*, the peasant girl whom Tito Melema deceives into a mock marriage.

THEAGENES AND CHARICLEIA. The hero and heroine of a famous Greek romance in prose, entitled *Aethiopica*, by Heliodorus. The lovers meet in the Temple of Apollo at Delphos, and after many wonderful adventures on land and sea are united to rule over Ethiopia.

The atrocious crime of being a young man. William Pitt, earl of Chatham, in a speech on March 10, 1740, beginning: "The atrocious crime of being a young man, which the honorable gentleman (Horace Walpole) has with such spirit and decency charged upon me, I shall

neither attempt to palliate nor deny, but content myself with wishing that I may be one of those whose follies may cease with their youth, and not of that number who are ignorant in spite of experience."

The blue ribbon of the turf. Benjamin Disraeli (Earl of Beaconsfield) to Lord George Bentinck, referring to the Derby race.

The great unwashed. Lord Brougham (1779-1868).

THERESA. In Byron's *Mazeppa*, the daughter of the count Palatine, beloved by Mazeppa.

THERSITES. In Homer's *Iliad*, a Greek, deformed and squinting, who delighted in vexing the chiefs by criticising and ridiculing them, especially Ulysses and Achilles, who finally slew him. He is also introduced in Shakespeare's *Troilus and Cressida*.

The schoolmaster is abroad. Lord Brougham (1779-1868), in a speech in the House of Commons, January 29, 1828. Followed by: "and I trust more to him, armed with his primer, than I do to the soldier in full military array, for upholding and extending the liberties of his country."

The unspeakable Turk. Thomas Carlyle, in a letter written to a meeting at St. James's Hall, London, in 1876, convened to discuss the Eastern question. "The unspeakable Turk should be immediately struck out of the question, and the country be left to honest European guidance."

THISBE. See PYRAMUS AND THISBE.

THOPAS, SIR. In Chaucer's *The Rime of Sir Thopas*, an archer, wrestler, and runner, who resolves to marry an elf-queen; a burlesque account of the wanderings of a knight-errant.

THREE SISTERS. The Fates—Clotho, Lachesis, and Atropos.

THUNDERER, THE. A popular name for the London *Times*, given because of a contribution by Captain Sterling beginning, "We thundered forth the other day an article on the subject of social and political reform."

THYESTEAN BANQUET. A term used in Milton's *Paradise Lost*, in referring to the atrocious deed of King Atreus, who, in revenge for an injury done him by his brother Thyestes, serves to him at a feast the flesh of the latter's own two sons.

THYRSIS. (1) In the *Idylls* of Theocritus, a herdsman. (2) In one of Vergil's *Eclogues*, a shepherd who has a poetical contest with Corydon; hence, in modern poetry, any rustic or shepherd. (3) A monody by Matthew Arnold, in memory of his friend, the poet Arthur Hugh Clough.

TIMIAS. In Spenser's *Faerie Queene*, Prince Arthur's squire, the soul of chivalrous honor, intended for Sir Walter Raleigh.

TOPSY. In Mrs. Stowe's *Uncle Tom's Cabin*, a comical little negro whom Miss Ophelia undertook to train according to New England ideas. In answer to questions she said, "Never was born; never had no father nor mother; I 'spect I growed."

TOUCHSTONE. In *As You Like It*, a jester at the court of Duke Frederick. His famous seven degrees of a lie are: (1) The retort courteous, (2) The quip modest, (3) The reply churlish, (4) The reproof valiant, (5) The countercheck quarrelsome, (6) The lie circumstantial, (7) The lie direct.

Toute nation a le gouvernement qu'il mérite. (Every nation has the government it deserves.) Count J. de Maistre (1753-1821) in a letter from St. Petersburg, dated August 27, 1811, apropos of the new constitutional laws of Russia.

TRANIO. In Shakespeare's *Taming of the Shrew*, the clever servant of Lucentio, who takes his master's place, and plays the part well, while Lucentio wooes Bianca in the guise of a teacher.

TRIBOULET. A nickname for the court jester of Louis XII. of France, Francis Hotman. He is a character in Rabelais's *History of Gargantua and Pantagruel*, and in Victor Hugo's *Le Roi S'Amuse*.

TRIM, CORPORAL. In Sterne's *Tristram Shandy*, Uncle Toby's servant.

TROIS MOUSQUETAIRES, LES (The Three Musketeers). A novel, by Alexandre Dumas, the first and most famous of a series of historical stories by the same author. The scene is laid mostly in Paris in the time of Richelieu. D'Artagnan is the hero, and the musketeers and close friends of the hero are Athos, Porthos, and Aramis. It is crowded with thrilling adventures, and is said to be historically accurate, the story being founded on a manuscript in the National Library, Paris, "Memoirs of D'Artagnan."

TUBAL. In Shakespeare's *Merchant of Venice*, a Jew who is a friend of Shylock, and comes back from Genoa to report, after an unsuccessful search for Shylock's runaway daughter. He alternately tantalizes Shylock with some story of his daughter's spending his precious ducats, and delights him by news of Antonio's wrecked ship.

Tuez-les tous, car le Seigneur connait ceux qui sont à lui (Kill them all, for the Lord knows his own). Attributed (but contested) to the legate Arnauld Amalric (died 1225) or Milon, when asked by the Crusaders how they should distinguish heretics from the faithful ones at the massacre of Béziers (1209).

TUTIVILLUS. In the *Visions of Piers Plowman*, a demon who spies upon priests in their performance of religious ceremonies, and picks up the fragments of words omitted or mispronounced, to store them up in hell.

TWEEDLEDUM AND TWEEDLEDEE. A phrase occurring in an epigram by John Byron, on the feud between the musicians Handel and Bononcini.

TWELFTH NIGHT, or WHAT YOU WILL. A comedy by Shakespeare, founded on an Italian story, the plot hinging on the close resemblance of a brother and sister. Sebastian and Viola, twins, are shipwrecked and separated on the coast of Illyria. Viola, for protection, dresses like her brother and becomes a page to Duke Orsino, and his messenger to Olivia, a noble lady who cares nothing for the duke but straightway falls in love with the handsome page. Sebastian then appears on the scene, is taken for the page and married to Olivia almost before he knows it. When the duke finds that Olivia is married and that his page, whom he thought false, is a woman, he speedily transfers his affections to the willing Viola.

TWENTY YEARS AFTER (Vingt ans après). A sequel to *The Three Musketeers*, by Dumas, in which the four friends appear again in marvelous adventures and hairbreadth escapes.

UBALDO. In Tasso's *Gerusalemme Liberata*, one of the older crusaders, who goes with another knight to bring back Rinaldo from Armida's Bower of Bliss.

UBEDA. In *Don Quixote*, a noted but worthless artist of Ubeda, who was sometimes obliged to label his work.

UNCLE SAM. A popular name for the United States, said to have originated in a joke. Samuel Wilson, an inspector of provisions in the War of 1812, was called Uncle Sam, and the contractor's mark on the goods, "E. A., U. S." (meaning Elbert Anderson, United States), was jokingly read "Elbert Anderson and Uncle Sam."

UNCLE TOM'S CABIN. A famous story of slavery, by Harriet Beecher Stowe, which had a great influence in arousing a sentiment against slavery previous to the Civil War.

UNDERGROUND RAILROAD. An indirect way of expressing the various means by which fugitive slaves were assisted to escape to the free states and to Canada, in the time of slavery.

URIEL. An angel. In *Paradise Lost*, Milton calls him an archangel,—one of the seven who stands nearest God's throne, "ready at command." In Longfellow's *Golden Legend*, he is called the "minister of Mars."

UTHER. Father of Arthur.

UZZIEL. In Milton's *Paradise Lost*, an angel next in power to Gabriel.

VALENTINE. (1) In *Two Gentlemen of Verona*, also *Twelfth Night*, an attendant on the duke of Illyria. (2) In Goethe's *Faust*, Margaret's brother; frenzied at his sister's disgrace, he attacks Faust as he is serenading Margaret, and is stabbed by Mephistopheles.

VALLEY OF HUMILIATION. In *Pilgrim's Progress*, the valley where Christian had such a desperate conflict with Apollyon and put him to flight.

VANITY FAIR. (1) In Bunyan's *Pilgrim's Progress*, a fair which had been held for some five thousand years in the city of Vanity by Beelzebub, Apollyon, and Legion, where all kinds of vanity were sold the year round. (2) The title of Thackeray's most celebrated novel, which ranks as a classic, being one of the few great novels. It has no hero, but the heroine, Becky Sharp (*q. v.*), more than makes up for the omission. It portrays fashionable society in England in the early part of the nineteenth century.

VERE, LADY CLARA VERE DE. In Tennyson's poem of that name, the haughty lady who carelessly smiled on yeomen and broke their hearts for a pastime.

VICAR OF WAKEFIELD. The hero of Goldsmith's famous novel of the same name.

Videre Napoli et Mori (See Naples and Mori). Mori is a little village near Naples. Said to be the origin of the expression, "See Naples and die" (*a jeu de mots*).

VINCENTIO. (1) See MEASURE FOR MEASURE. (2) In *The Taming of the Shrew*, the father of Lu-

centio, who, coming to visit his son, finds another "Vincentio" and comes very near going to prison for insisting that he is the right Vincentio.

VINCY, FRED. In George Eliot's *Middlemarch*, the brother of Rosamond, whose character was spoiled by the expectation of wealth.

VIOLA. See OLIVIA and TWELFTH NIGHT.

VIRGILIA. In Shakespeare's *Coriolanus*, the gentle wife of Coriolanus, who calls her "My gracious silence." Historically, Volumnia was her name.

VIRGINIA, or VIRGINIE. The subject of one of Macaulay's *Lays of Ancient Rome*, and also of many tragedies. She was the daughter of Lucius Virginius, a Roman soldier.

VIRGINIUS. (1) See VIRGINIA. (2) The title of a tragedy on the story of Virginia, by Knowles.

VISION OF MIRZA. An allegory by Joseph Addison, in which Mirza is shown by a genius a vision of human life.

VISITING CARDS. Originated in China, where they play an important part in the etiquette of the country.

VIVIAN. In the *Arthurian Romances*, the Lady of the Lake, who brought up Lancelot in her palace at the bottom of an enchanted lake.

VOLPONE, or THE FOX. A comedy by Ben Jonson. Volpone is a rich and childless Venetian, and a most obnoxious hypocrite.

VOLUMNIA. In Shakespeare's *Coriolanus*, the mother of Coriolanus, although in history her name was Veturia. She pleads with Coriolanus to spare Rome, not knowing that she is to lose her son in saving Rome.

Vous avez le plaie et moi la douleur. (You have the wound and I the pain.) Words used to Admiral Coligny (1517-1572) by Charles IX. when visiting him after being informed of the wounds inflicted by his assailants (Aug. 22, 1572).

Vous avez quatre mots contre une idée (You have four words against one idea): Antoine Rivarol (1753-1801), to a stupid person who boasted of knowing four languages.

WALPURGIS NIGHT. The night before the first of May, probably named from St. Walpurgis or Walpurga, who converted the Saxons to Christianity, in the eighth century. The Germans believed that witches on that night rode on broomsticks and goats to the Brocken, a peak of the Hartz Mountains, and held high festival with Satan and his horde.

WANDERING JEW, THE. A legendary personage who figures in connection with the passion of Christ. As Jesus was on the way to execution, overweighted with the cross, he wished to rest on a stone near a Jew's house, but the Jew drove him away with curses. Jesus replied that he would "wander on the earth till his return." He has since wandered from place to place, according to the command, without finding a grave. This character is found in the fiction of many countries, notably in the romance of Eugene Sue.

WARDOUR STREET. A street where one may buy antiques and curios of doubtful authenticity. Hence, in literature, a term applied to the use of archaic language and other antique accessories to produce the necessary atmosphere of antiquity in a novel whose scene is laid in the remote past.

WAVERLEY. The first of the historical novels of Sir Walter Scott, from which the name for the series was taken. The motive of the story is the insurrection of 1745 in behalf of the Pretender led by Charles Edward, the Young Chevalier. Captain Edward Waverley, the hero, has leave of absence for rest, and takes letters from his uncle, Sir Everard, to his Scotch friend, Baron Bradwardine at Tully-Veolan, where he meets the gentle Rose. He also meets and falls in love with the brilliant and accomplished Flora MacIvor, the sister of Fergus. Captain Waverley is led by a strange sequence of events to don the white cockade, and nearly loses his life for treason, but lives to marry Rose, while Flora, who has been too actively engaged in aiding the Stuart cause to care for love, retires to a convent after the death of her brother.

WEREWOLF. In folk-lore, a man who has been changed into a wolf.

When law ends, tyranny begins. Earl of Chatham (1708-1778): In a speech on Wilkes' case, 1770. "Unlimited power corrupts the possessor; and this I know, that, where law ends, there tyranny begins."

WILD HUNTSMAN, THE. In the folk-lore of different countries, a spectral huntsman who haunts, with his dogs and attendants, the forest of Fontainebleau in France, and the Black Forest in Germany, while in England he is called Herne the Hunter, from a keeper in Windsor Forest. Herne's Oak is alluded to in Shakespeare's *Merry Wives of Windsor*. Scott's poem *The Chase*, generally known as "The Wild Huntsman," is an imitation of *Der Wilde Jäger*, by Burger.

WILD, JONATHAN. A notorious English highwayman, executed at Tyburn in 1725, and the subject of novels by Defoe and Fielding.

WILFORD. (1) In *The Hunchback*, by Knowles, the supposed earl of Rochdale, who turns out to be a nobody. (2) In Knowles's *Beggar of Bethnal Green*, the son of Lord Woodville, who fell in love with Bess, the blind beggar's daughter.

WIMBLE, WILL. In Addison's *Spectator*, a simple, good-natured gentleman, "well-versed in the little handicraft of an idle man."

WINTER'S TALE, A. A play by Shakespeare, in which jealousy is the keynote. The scene is laid in Sicily and Bohemia. Leontes, king of Sicily, invites King Polixenes, of Bohemia, to visit him, and suddenly becoming insanely jealous, secretly directs Camillo to poison him; but Camillo warns Polixenes instead and flees with him to Bohemia. The enraged king then sends Hermione to prison and directs Antigonus to carry her infant daughter to some desert shore to perish. The baby is found by a shepherd in Bohemia, who names her Perdita and brings her up as his own. Florizel, son of Polixenes, while out hunting meets Perdita and falls in love with her. His father forbids their betrothal, and Camillo accompanies the two lovers in their flight to Sicily. Leontes finds in Perdita his long-lost daughter, and welcomes his old friend Polixenes, who has followed his son and who now consents to his marriage with the king's daughter. Now comes Paulina and invites them all to her house to view a statue of Hermione. While they are admiring its lifelike beauty the statue moves from its pedestal and they behold Hermione herself restored to her undeserving husband and her beautiful daughter, Paulina having kept her safely hidden all these years.

WITCHES' SABBATH. In folk-lore, the annual gathering of witches, wizards, and demons, held at midnight in some remote region, with Satan as leader, when they feasted and reveled and plotted mischief.

XANTHOS. In Homer's *Iliad*, one of Achilles' horses.

XIMENA. The wife of the Cid Campeador, and a character in Corneille's tragedy *Le Cid*, in Colley Cibber's *Ximena; or The Heroic Daughter*, and in Bayard Taylor's first poem, entitled *Ximena*.

YELLOWPLUSH PAPERS. A series of humorous sketches by Thackeray, supposed to be written by Charles James Harrington Fitzroy Yellowplush, a former footman in a number of West-End families.

YEOMAN'S TALE, THE. One of Chaucer's *Canterbury Tales*, which exposes the tricks of alchemists.

YEO SALVATION. In Charles Kingsley's *Westward Ho*, a Clovelly sailor who was given to swearing.

YORICK. (1) In Shakespeare's *Hamlet*, the jester of the former king of Denmark whose skull Hamlet picks up and addresses. (2) In Sterne's *Tristram Shandy*, a careless, humorous parson, represented to be a descendant of Shakespeare's Yorick.

ZAIRE. A tragedy by Voltaire which suggests *Othello*. Zaire, the daughter of the king of Jerusalem, and her brother, Nerestan, have lived in captivity at the court of the sultan Osman since childhood. Osman loves Zaire, and intends to make her sultana, but seeing her intimacy with Nerestan, and ignorant of their relationship, becomes jealous and stabs Zaire. When Nerestan tells him that Zaire was his sister, Osman in remorse kills himself.

ZANONI. The title and name of the hero of a novel by Lord Lytton. He is represented as being able to communicate with spirits, to prolong life, and to produce gold, silver, and precious stones.

ZENOBIA. (1) The famous queen of Palmyra, who has been made the subject of many plays. (2) In Hawthorne's *Blithedale Romance*, a proud, excitable woman, who drowns herself when disappointed in love.

ZEPHON. The name means "Searcher of Secrets."

ZONE GRIGIE. (Gray zones.) Francesco Crispi (1819-1901), in a conversation with M. Saint-Cère, editor of the Paris *Figaro*, in 1890; it was published in that journal, on the 29th of September in the same year. *La question des nationalités se meurt. Il n'y a plus de divisions marquées, tranchées; il y a sur toutes les frontières de tous les pays des zones grises où les nationalités se melent.* (The question of nationalities is dying. There are no longer any distinct, defined divisions; there are on the frontiers of all countries gray zones where the nationalities mix.)

ZOPHIEL. In Milton's *Paradise Lost*, a swift-winged angel, who brings word to the heavenly host that Satan is about to make another attack. The word means "God's spy."

DICTIONARY OF PSEUDONYMS.

Comprising pen names of noted writers, and epithets applied to famous personages.

Abimelech Coody,	Gulian C. Verplanck.
Abraham, Brother,	Rev. Richard King.
Academicus,	Rev. Aulay Macaulay.
Achitophel, "Achitophel and Absalom,"	Earl of Shaftesbury (1621-1638).
Ackermann, Gottlieb,	Franz Xavier Mayer.
Acworth, John,	Rev. F. R. Smith.
Adams, Moses,	Geo. Wm. Bagley.
Adams, Stephen,	Michael Maybrick.
Addison of the North, "The Man of Feeling,"	Henry Mackenzie.
Adeler, Max, "Out of the Hurly Burly,"	Charles Heber Clark.
Admirable Doctor,	Roger Bacon.
Adonais, "Adonais,"	Keats (name given by Shelley).
Agate,	Whitelaw Reid.
Agläus,	Henry Timrod.
Akers, Elizabeth,	Mrs. E. M. Allen.
A. K. H. B.,	Rev. A. K. H. Boyd.
Alcaeus,	James Montgomery.
Alcibiades, *Punch*, 1846,	Lord Tennyson.
Alexander, Mrs.,	Mrs. A. F. Hector.
Alexander, Sir Drawcansir,	Tobias George Smollett.
Alexander the Coppersmith, LL.D.,	Thomas Erskine, Baron Erskine.
Alexander the Corrector,	Alexander Cruden.
Alexander of the North, The,	Charles XII. of Sweden.
Allen, F. M.,	Edmund Downey.
A. L. O. E. (i. e., A Lady of England),	Charlotte Maria Tucker.
Alte Fritz, Der,	Frederick the Great.
Amateur Casual,	James Greenwood.
Anacreon Moore,	Thomas Moore.
Anacreon of Painters,	Francesco Albani.
Anacreon of Persia,	Hafiz.
Anacreon of the Guillotine,	Bertrand Barrere.
Ane of that Ilk,	Prof. W. E. Aytoun.
Angler, An, "Salmonia,"	Sir Humphry Davy.
Anstey, F.,	Thomas Anstey Guthrie.
Apostate, Julian The	Roman Emperor Julian.
Apostle of Germany,	St. Boniface.
Apostle of Ireland,	St. Patrick.
Apostle of Temperance,	Rev. Theobald Mathew.
Apostle of the English,	St. Augustine.
Apostle of the French,	St. Denis.
Apostle of the Frisians,	St. Wilbrord or Willibrod.
Apostle of the Gauls,	St. Irenaeus.
Apostle of the Goths,	Ulfilas.
Apostle of the Indians,	Rev. John Eliot.
Apostle of the North,	Anscharius or Ansgar.
Apostle of the North,	Bernard Gilpin.
Apostle to the Indies,	St. Francis Xavier.
Astrophel,	Sir Philip Sidney.
Attic Bee,	Sophocles.
Attic Muse,	Xenophon.
Atticus,	Joseph Addison (name given by Pope in "Prologue to the Satires").
Austrian Hyena,	Baron Julius Jakob von Haynau.
Autocrat, The,	Dr. Oliver Wendell Holmes.
Bab, "Bab Ballads,"	W. S. Gilbert.
Baba, Ali,	Alberigh Mackay.
Badinguet,	Napoleon III.
Balfour, Clara,	Mrs. Felicia Dorothea (Browne) Hemans.
Bard, The,	Edw. Jerningham.
Bard of Avon,	Shakespeare.
Bard of Ayrshire,	Robert Burns.
Bard of Rydal Mount, The,	Wm. Wordsworth.
Bayard, The Polish,	Prince Joseph Poniatowski.
Beau Brummel,	George Bryan Brummel.
Beauclerc,	Henry I. of England.
Beau Nash,	Richard Nash (also called "King of Bath").
Bede, Cuthbert,	Rev. Edward Bradley.
Bell, Acton,	Anne Bronte.
Bell, Currer,	Charlotte Bronte.
Bell, Ellis,	Emily J. Bronte.
Bell, Lilian,	Mrs. Arthur Hoyt Bogue.
Bell-the-Cat,	Archibald Douglas, Fifth Earl of Angus.
Belted Will,	Lord William Howard.
Benson, Carl,	Charles Astor Bristed.
Berwick, Mary,	Adelaide Anne Procter.
Bess, Good Queen,	Queen Elizabeth of England.
Bettina,	Elisabeth (Brentano) von Arnim.
Bibliophile,	L. A. Allibone.
Bibliophile, Jacob,	Paul Lacroix.
Bickerstaff, Isaac,	Sir Richard Steele.
Biglow, Hosea,	James Russell Lowell.
Billings, Josh,	H. W. Shaw.
Black Douglas,	(Generic name of Scotch family of Douglas.)
Black Prince, The,	Edward, Prince of Wales, son of Edward III. of England.
Blacksmith, The Learned, "Sparks from the Anvil,"	Elihu Burritt.
Blind Harry,	Henry the Minstrel.
Bluff Hal, or Harry,	King Henry VIII. of England.
Boisgilbert, Edmund,	Ignatius Donnelly.
Boldrewood, Rolf,	Thomas A. Browne.
Bon Gaultier,	Prof. W. E. Aytoun and Sir Theo. Martin.
Bouverie, Bartholomew,	Rt. Hon. W. E. Gladstone, M.P.
Boz,	Charles Dickens.
Bozzy,	James Boswell.
Braddon, Miss M. E.,	Mrs. John Maxwell.
Breitmann, Hans,	Charles Godfrey Leland.
Brown, Tom,	Thomas Hughes, Q.C., M.P.
Brown, Tom, the Younger,	Thomas Moore.
Burlington Hawkeye Man,	Robert Jones Burdette.
Byron, the Russian,	Alexander Sergeivitch Puschkin.
Cadenus,	Jonathan Swift.
Caliban,	Robert Buchanan.
Caliban,	Louis Jean Emmanuel Gonzalès.
Candidus,	Samuel Adams.
Carmen Sylva,	Elizabeth, Queen of Roumania.
Carroll, Lewis,	Rev. C. Lutwidge Dodgson.
Caskoden, Edward,	Charles Major.
Catholicus,	Cardinal John Henry Newman.
Cato,	Alexander Hamilton.
Chicot,	Epes Winthrop Sargent.
Chinese Gordon,	Maj. Gen. Charles George Gordon.
Citizen King,	Louis Philippe.
Cleisthbotham, Jedediah,	Sir Walter Scott.
Colman, R. W.,	James Hogg, the Ettrick Shepherd.
Common Sense,	Thomas Paine.
Condroux, Alfred,	Honoré de Balzac.
Confessor, The,	Edward III., King of Anglo-Saxons.
Connor, Ralph,	Rev. C. W. Gordon.
Conqueror, William the,	Duke of Normandy.
Conway, Hugh,	F. J. Fargus.
Coolidge, Susan,	Sarah C. Woolsey.
Cornwall, Barry,	Bryan Waller Procter.
Corrector, Alexander the,	Alexander Cruden.
Cotonnet,	Alfred de Musset.
Craddock, Charles E.,	Mary N. Murfree.
Crayon, Geoffrey,	Washington Irving.
Creyton,	J. T. Trowbridge.
Crichton, The Admirable,	James Crichton.
Croaker & Co.,	Joseph Rodman Drake, Fitz-Greene Halleck.
Crowfield, Christopher,	Mrs. H. Beecher Stowe.
Cruiser, Benedict	G. A. Sala.
Curate of Meudon (le Cure de Meudon),	Rabelais.
Curtius,	Noah Webster.
Damsel of Brittany,	Eleanora, granddaughter of Henry II. of England.
Danbury Newsman,	J. M. Bailey.
Davy,	Alexandre Dumas.
Dean, The,	Jonathan Swift.
Defender of the Truth,	Henry VIII. of England.
Delorme, Joseph,	Chas. Augustin Sainte-Beuve.

the boys devoted themselves to bearing arms and studying military maneuvers; passed examinations every ten days to test their progress and proficiency; and helped in the charge of the younger boys. Repartee and ready speech were developed by conversation with the elders at meals and in the street. Some reading and writing, with the music of the choral dances, formed a large part of the intellectual and spiritual education. This, however, was completely overshadowed by the physical culture, hunting, and military skill. The great source of discipline was the desire to win the approval of their elders, for their whole life was passed in public. The education of women was, practically, the same as of men.

Athenian Education.—The marked contrast between Spartan and Athenian ideals was most evident in the fact that while Sparta completely destroyed family life, Athens preserved and developed it. The schools of Athens were private. Only between the ages of sixteen and twenty did the state control education, and then only in the direction of physical culture, and preparation for military service. The family controlled the education during the first seven years, during which time the child was mostly in the care of nurses or slaves. The child's schools were two—one, the music school; the other, the gymnasium or *palaestra*. He was cared for by a pedagogue or slave until he was about sixteen, when he discontinued his musical and literary studies and was taught in a number of subjects by a state official, the *paedo tribe*, and his morals were regulated by a *sophronist*, or moral censor. This later education was conducted during the Old Greek Period, or prior to the Age of Pericles (fifth century B. C.), in the Academy or the Cynosarges. The Academy for the sons of pure Athenians, and the Cynosarges for those of mixed blood, were outside the city walls, amid groves and gardens and were attended for two years by Athenian youths in training for the serious duties of citizenship. This training took the form of association with his elders, of discussion in the agora, talks at banquets, attendance at the theater and law courts. So the young Athenian learned all of the laws and moral customs that was needed for the right conduct of life. Breaches of morality were watched for and corrected by the Areopagus, a court which had especial control over the morals of youth and punished the young men for moral delinquencies calculated to unfit for discharging the duties of citizenship.

At the end of these two years, the young man took his place on the list of free citizens, after satisfying the proper officials of his moral and physical fitness. This event was observed by taking an oath of fidelity; and by exchanging his youth's dress for that of a free citizen. For two years he was yet under the tuition of a state official; in barrack or camp life near home for one year, and on distant garrison duty during the second year. At the end of the first year of this cadet service, the young Athenian passed an examination in the use of arms; and at the end of the second, one in the duties of citizenship. Then he was admitted to full citizenship. Such was the system of education in Athens at the end of the fifth century B. C. Gymnastics absorbed fully one half of the time and attention of the Greek youth. The exercises included jumping, running, throwing the discus, throwing the spear, wrestling, and boxing. These gymnastic exercises were a part of the religious ceremonial of the Greeks.

Music included not only all that we now regard as coming within the term but also all that was presided over by the nine Muses: poetry, drama, history, oratory, and the sciences.

The literary work included memorizing the works of Homer and Hesiod, explaining the meanings of words and allusions, together with reading and writing in the sixth century B. C.

New Greek Period.—During the fifth century B. C., there was a period, which culminated in the Age of Pericles, when Greek civilization reached its height. Those were the days of Themistocles and Pericles in politics; Phidias and Myron, in art; Herodotus and Thucydides in history; Æschylus, Sophocles, and Euripides in tragedy; and Aristophanes in comedy. The old education had brought about this condition, but new conditions called for changes in curriculum and methods. Chief among these were the teaching of oratory and formal rhetoric by the Sophists and the fullest development of individuality and personality. Intellectual training took a larger part of the time between the ages of sixteen and eighteen; literature became the basis of study; and the young man was fitted to promote his best personal interests under the democratic institutions of Cleisthenes. The teachers of this period were Socrates, Plato, and Aristotle. With the conquest of the world by Alexander the Great, Greek institutions of every sort were to be found in all the cities of the East, and educational ideals were widely disseminated. So that it is hardly an exaggeration to say that Greek ideals and methods of education were for a time the standards for the whole world.

Roman Education.—For centuries after the foundation of Rome, the only schools were the home, the forum, and the army. The first school of which records have been left was found in 250 B. C. At first such schools were private and no state support was given to them until a comparatively late date in Roman history. Upon the conquest of Greece by Rome in 146 B. C., Greek slaves and prisoners commanded a good price in the markets of Italy and were employed as tutors by their masters. Thenceforward Greek influence dominated Roman schools. All of the teaching in the higher schools of Rome was conducted in the Greek language until the edict of 112 B. C. The Roman ideal was eminently practical and the end aimed at was the realization of ideals or social distinction. Greek influence modified but never wholly destroyed the practical aspect of Roman education. In the schole or school of higher grade, pupils learned rhetoric, oratory, grammar, geography, arithmetic, geometry, and music. Physical culture was practised on the Campus Martius but not as a part of a school curriculum. Quintilian (35-95) was not only the greatest of Roman teachers, but was also the greatest Roman writer on education. His work, "Institutes of Oratory" (*de Institutione Oratoria*), is the first scientific treatise ever written on education, its purpose, method, curriculum, and school organization.

Early Christian Education.—The education of Rome and that of the early Christians overlap; for many of the early Christians down to the fifth century received their education at one or other of the many imperial institutions in the chief cities of Europe, Asia, and Africa. At Alexandria, Clement and Origen endeavored to secure special education for Christians; Tertullian, Cyprian, and Jerome worked hard to secure a Christian education for the youngest children; and Augustine condemned the heathen culture as hostile to the purposes and interests of Christianity. This feeling was strongest in the West, for the chief opposition to the growth of the Christian Church came from scholars learned in pagan lore and trained in heathen schools, which were the chief stronghold of the pagan régime. The direct result of this hostility was that learning must decline, for it was first necessary to tear down the opposing heathen influence of such strength before building up a system of education based upon Christian principles. For a thousand years, during what is known as the Dark Ages, intellectual learning was less regarded than moral training, though the Church favored education and ordered her priests to found and to conduct schools within their parishes. Such intellectual light as glimmered during these Dark Ages was found in monasteries, which grew to be noted as centers of learning. In Germany were the monasteries of Fulda and Hirschau; in France, those of Tours, Corbie, Bec, and Cluny; St. Gall in Switzerland; Glastonbury, Malmesbury, and Canterbury in England; and Monte Cassino in Italy. In nearly all of the monasteries was a *scriptorium* or writing room in which the monks, oblivious to the tumult of war that raged all around them, copied texts and passages of scriptures, multiplied books, illuminated manuscripts, and wrote breviaries. In doing this, at times when parchment was scarce, they have been accused of obliterating the works of a classical author and of causing the loss of his works, in order to supply material upon which to record a sermon of an abbot. On the other hand it cannot be denied that whatever we possess to-day of ancient learning and literature has been preserved for us by these same monks in the safe repositories of the monasteries.

The subjects taught in monastery schools in mediæval times have been called the Seven Liberal Arts and were supposed to include all learning. These were comprised in a *trivium* or group of three, including grammar, rhetoric, and dialectic; and a *quadrivium* or group of four, including arithmetic, geometry, music, and astronomy.

Among the writers on education in the early Middle Ages were Martianus Capella (wrote 410-427), author of "The Marriage of Philology and Mercury"; Boethius (about 480-524), the most influential of all learned men of his time; Cassiodorus (about 470-568); and Isidore, bishop of Seville (about 570-636).

Outside of the monasteries the great educational work of mediæval times was the revival of learning under the emperor Charlemagne, who reigned from 771 to 814. He was assisted in this work by Alcuin (735-804), whom he called from the cathedral school at York, England, in 782. Charles bestowed upon Alcuin (794) the Abbacy of Tours, rich in lands and holding 20,000 slaves, which became under him the center of learning in France, whither the young flocked from all parts, and whence issued a trained and educated force of pupils and disciples to take up work at other monasteries. Alcuin founded the library at Tours; and, himself, wrote several works in the question and answer style (catechetical) upon educational subjects. The most noted of Alcuin's pupils was Rabanus Maurus (776-856), Abbot of Fulda, the greatest center of learning in north Germany. Alcuin had established a school of the palace when first called to France,—a school which was patronized by the royal family and the nobility. The most celebrated of Alcuin's succession in this school was Johannes Scotus Erigena, or John the Scot (about 810-about 875), called by Charles the Bald from England in 845. This illustrious scholar is to be regarded as the initiator of Neo-Platonism and Christian mysticism into France and western theology.

Among the earlier teachers of this time were Anselm (about 1034-1109), Roscellinus (died 1106), Abelard or Petrus Abelardus (1079-1142), and William of Champeaux. The schoolmen completely dominated the intellectual world of Europe in the thirteenth and fourteenth centuries. Later illustrious men were Alexander of Hales (died 1245), Bonaventura (1221-1274), Albertus Magnus (1193-1280), Thomas Aquinas (1225-1274), Joannes Duns Scotus (about 1271-1308), and William of Occam (1280-1347).

Universities.—The earliest universities grew up in the south of Europe under the shade of the monasteries and where Saracenic, Norman, and early Greek influences abounded. The University of Naples grew out of such a school for the study of medicine and was chartered by Frederick II. as the University of Naples in 1224. That of Bologna, made famous by the early teacher Irnerius (about 1067-1138), received its first charter from Emperor Frederick I. in 1158. Paris, made famous by Abelard, was recognized by Louis VII. in 1180 and fully recognized in 1200. Oxford and Cambridge were both somewhat later.

Chivalry.—Chivalry, like all other systems of education in the Middle Ages, was a discipline. As an institution it grew out of the character and customs of the early Teutons, the structure of the later Roman society, and the early Christian Church. The system did for the laity and for the secular classes what monasticism did for the clergy. It was of the greatest service in holding in check a rude, lawless, and violent people. Though an imperfect discipline it was well suited to the times. The knight passed through the period as page from his seventh to his fourteenth year, and squire from his fourteenth to the twenty-first year. In these situations the youth learned the rudiments of love, of war, and of religion. On attaining knighthood the religious aspect of his service was increased. A knowledge of French—the language of chivalry—was necessary.

Renaissance.—The most marked change in education in the thirteenth century was the founding of schools of all grades. The friars or

mendicant orders grew to control the higher education in the middle of the thirteenth century. The Franciscans or Gray Friars were founded in 1212; and the Dominicans or Black Friars in 1216. These preaching friars, of whom Thomas Aquinas was an illustrious example, taught a wider range of subjects than did the earlier monastic orders, and, as preachers, controlled the doctrine which was taught.

Saracens.—The Greek philosophy, by reason of its heretical tendencies, found no place in the early mediæval schools of Europe. But by the sixth century it had been taken up by the Syrians and the Nestorian Christians in western Asia. The Arabs took it up eagerly and the Abbid dynasty, from 750, encouraged it in the capitals of the East. Mathematics and natural sciences, especially medicine, were first taken up and translated from the Syriac or original Greek into Arabic. Avicenna (980-1037) was among those who, in the eleventh century, took up philosophy. Thus while the schools of Europe were declining, those of Bagdad, Basra, Kufa, and other Saracenic towns were achieving great activity and renown. In Spain, especially at Cordova, this intellectual activity flourished from the tenth century. There the Saracens established libraries, founded schools ranking but little below universities, and even schools for the instruction of young children. In the tenth and eleventh centuries the Arabs gave the Hindu notation, since called Arabic, in place of the cumbrous Roman. Much was added by the Saracens in algebra, arithmetic, medicine, surgery, pharmacy, astronomy, physiology, to the sum of European knowledge. In the twelth century Raymond, Archbishop of Toledo, caused a Jewish scholar to translate the chief works on Arabic philosophy into Spanish; thence monks translated it into Latin. Emperor Frederick II. had the writings of Averroës and of Aristotle translated.

Later Middle Ages.—Schools were numerous in Europe in these times; and there were both secondary and elementary schools. In place of the monastic schools were the cathedral schools and chantry schools. The chantry schools were founded as beneficences to the church by the generously inclined, and furnished instruction for children of all ages. The guild schools were supported by merchants and craft guilds. One of the most noted of these is the Merchant Taylors' School of London.

In the intellectual life of Italy, Dante (1264-1321) was a connecting link, partly mediæval and partly modern. Petrarch (1304-1374) strove against scholasticism and Aristotelianism. With him were the great Boccaccio (1313-1375), and Barzizza (1370-1431). Manuel Chrysoloras (died 1415) the first great teacher of Greek in the western world, lectured at the University of Florence.

Later Renaissance.—The later Renaissance period included the latter half of the fifteenth and the whole of the sixteenth centuries. The earlier Renaissance lived its life out in Italy and was there followed by a period of pronounced formalism. The movement on crossing the Alps, though welcomed by the French, received its greatest development at the hands of the Germans. All of the early leaders in the North were social and religious reformers. Though great attention was paid to the Greek and Latin authors, the search in them was not for dry linguistic attainment but, in the early days in the North, for the elements of a liberal education which these writers gave. Among the early writers on education during the period of the later Renaissance was Paulus Vergerius (1349-1420), a professor at the University of Padua. Great attention was paid to the classical languages and literature, which came to be known as the humanities. So narrow and formal did this system of education become, that it was maintained in the sixteenth century that inasmuch as the thing most sought for was a good Latin style, and since Cicero possessed this above all other writers, therefore the study of the works of Cicero was sufficient. This advocacy of exclusive study of Cicero's works was called Ciceronianism. Among famous educators of this later period were Vittorino da Feltra (1378-1446) of Padua, John Wessel (1420-1489), Rudolph Agricola (1443-1485), Alexander Hegius (1420-1495), John Reuchlin (1455-1522), and Jacob Wimpfeling (1450-1528). But the most famous of the leaders in the new movement was Desiderius Erasmus, known as Gerardus Gerardi (1465?-1536), all of whose work was primarily educational. In England, Roger Ascham (1515-1568) was the greatest educator of the period. The humanistic or new learning, as it was often called, worked its way into Germany and in 1460 the universities of Heidelberg, Erfurt, and Leipzig were influenced by wandering teachers. By 1520 all of the German universities were dominated by the new learning. As early as 1458 Greek was taught in the University of Paris. In England, Greek was introduced into Oxford by William Grocyn and Thomas Linacre, whom Erasmus found there in 1498, when he introduced the study of Greek into Cambridge. The gymnasium, yet the best type of German secondary school, was formed out of the burgher or church schools by changes in the curriculum. John Sturm organized the gymnasium at Strassburg in 1537, and during his forty years of teaching there exerted great educational influence. English public schools date from this period, among them being Winchester (1387), Eton (1440), St. Paul's at London (1512), founded by John Colet, with its first teacher, William Lily, famous for his Latin grammar. Monastic schools flourished in England in this period side by side with cathedral or collegiate schools, charity foundations, and guild schools. It was not until 1864 that the humanistic training in many of England's great schools was finally modified.

The Reformation.—The intellectual trend of the sixteenth century was ethical and theological especially among the Teutonic peoples. There was marked criticism in religious matters; and this criticism was both abstract and practical. Practical criticism found its vent in efforts to reform abuses within the church. Already many zealous churchmen had directed their efforts against such abuses and their efforts culminated in the Council of Trent (1545-1563). Under ordinary conditions the parties could easily have been harmonized. But

the knowledge of ancient and patristic literature which the humanistic movement in education in Germany had fostered and encouraged, added to the spirit of criticism and the forming of positive judgments so that the incompatibility of the widely divergent views brought about an open rupture. With religious controversies a history of education is not concerned except so far as the formation of two contemporaneous systems of education resulted.

Jesuit Schools.—The Society of Jesus was formed in 1535, established in 1540, and by its teaching became the strongest force in what is known as the "counter-reformation." Of the ten parts of the constitution of the order, the fourth is the *Ratio Studiorum*, or System of Studies. This was perfected in 1599 and lasted until 1832. Their system of secular study was so thorough that they drew to their schools many Protestant students. Their efforts were greatest in the direction of secondary education, for which they provided colleges inferior and colleges superior. Before 1650, the Jesuit Order had established 372 colleges; by 1700 they had 612 colleges, 157 normal schools, 24 universities, and 200 missions. Many of the large colleges numbered 2,000 students each; in Paris alone there were 13,000 students. At one time the number of teaching members of the order exceeded 22,000, and most of these were engaged in the work of education. The great elements of success of the Jesuit schools were complete organization and continuity of effort. The preparation of teachers was thorough and exacting, while the supervision over teachers was vigilant and unceasing. In teaching great stress was laid on review work, which was frequent. The spirit of emulation was fostered to a great degree by the use of æmuli, or monitors, who assisted in a system of espionage that led to the closest self-inspection. While the educative work was not broad in the modern sense, it was most thorough.

Reformation Schools.—Late in life, John Calvin (1509-1564) rested from his religious and theological controversies and gave attention to matters of education. He organized a college at Geneva which led to the foundation of many such schools. Zwingli (1484-1531) gave his attention to forming elementary schools for young children. John Knox (1505-1572) was a leader in the formation of the Scotch parish school system. Martin Luther (1483-1546) was a prominent educational force in Germany even before the Reformation. To the humanistic curriculum he advocated the addition of Hebrew, logic, mathematics, history, science, music, gymnastics, and physical culture. Philip Melanchthon (1497-1560), the "Preceptor of Germany," was foremost in the educational reforms of Germany. He labored for forty-two years at the University of Wittenberg and this became the model university of Germany. In England the Reformation centered at Cambridge, where Tyndale (1484-1536) and Latimer (1485?-1555) were the leaders. The Port Royal schools originated in opposition to the Jesuit schools. The founder was Duvergier de Hauranne (1581-1643) or St. Cyran. Among the famous pupils of these schools were La Fontaine (1621-1695) and Pascal (1623-1662). In 1559 a system of public schools was founded in Germany by which each village had a school. The system was complete through the cloisteral or higher Latin schools, the gymnasium, up to the University of Tübingen. This was the Württemberg system organized by the duke of Württemberg in 1565. The Saxony plan, similar in organization, was adopted from that of Melanchthon in 1580 and remained practically unchanged until 1773, when compulsory attendance and a wider curriculum were added. In such manner the schools of Protestant Germany grew and developed until retarded by the Thirty Years' War (1618-1648). In the reaction from this arrested development the Prussian system was evolved and rapidly became predominant. In England, the education was intrusted to the family or the church until far into the nineteenth century. The so-called great public schools, the Society for Promoting Christian Knowledge (1699), the British and Foreign School Society (1805), the National Society (1811), and the Home and Colonial School Society (1836) were the leading religious educational societies. The reformed churches of Holland established a system of elementary schools, which by the Synod of Dort (1618) grew into a system of parish schools.

Elementary Roman Catholic Schools.—The Institute of the Brethren of the Christian Schools, founded in 1684 by Jean Baptiste de la Salle (1651-1719), did for elementary education what the Jesuit Order did for secondary education. Reading, writing, arithmetic, and religious teaching filled the simple curriculum. In the training of teachers and in thoroughness of teaching these schools far surpassed the elementary schools of Protestant foundation. Probably the first training school for elementary teachers was that opened by the Christian Brothers in 1685.

Writers of the Period.—Rabelais (1483-1553), the representative exponent of the humanistic-realists; Milton (1608-1674) in his "Tractate on Education"; Montaigne (1533-1592), the advocate of social-realism; Richard Mulcaster (1548-1611), one of the earliest of the sense-realists; Francis Bacon (1561-1626), who profoundly influenced educational thought; Wolfgang Ratke, Ratichius, or Ratich (1571-1635), first formulator of the educational ideas of his times; John Amos Comenius (1592-1670), one of the most important of the realistic educators; these were the molders of educational thought, and formulators of new educational creeds in a period during which modern educational theories were shaping themselves.

Realistic Education.—Schools based upon the ideas of Comenius were founded by Hermann Francke (1663-1727), and Spener (1635-1705?). In 1692 Francke established a school at Halle which was a combination of Christian and practical training. The Real-Schools or Real-Schulen were the result of the founding of a school at Berlin in 1747 by Hecker, a pupil of Francke, where German, French, Latin, writing, drawing, history, geography, geometry, arithmetic, mechanics, architecture, religion, and ethics were taught. In England, upon the restoration of monarchy (1660), about two thousand dissenting or non-conformist clergy were expelled from their churches and all dissenters were excluded

from public schools and universities. They founded a series of academies providing a broader curriculum, which embraced many of the new "real studies." In the universities the new realistic education found provision in the University of Halle (1694), the University of Göttingen (1737); and Cambridge took the lead in mathematics under Sir Isaac Newton (1669-1702) and Richard Bentley, head master (1740-1742).

Disciplinary Education.—When Latin ceased to be the language of the Protestant clergy and the sole medium of teaching in higher schools and universities, great efforts were made to keep it in a dominant place upon the curriculum. In these efforts are to be seen the origin of the struggle of the classics *versus* science which has lasted down to the present day. It was maintained that as a medium of discipline the classics were too valuable to be displaced from their prominent place in school curricula. John Locke (1632-1704), whose "Essay on the Human Understanding" is practically a formulation of the Baconian philosophy, advocated the disciplinary value of the classics, but upon a broader plane than the schoolmasters occupied. This theory obtained in English schools until within recent years, and classics and mathematics were the important subjects of the curriculum in schools and universities. In Germany the preponderance of classical education is great in the gymnasia of the present day.

Naturalistic Movement.—The growth of liberalism in Europe during the eighteenth century was remarkable. While its effects were most evident in politics, they pervaded all departments of human effort. In education the results were the throwing off of the humanistic and the substitution of the naturalistic phase. The two objects sought were (1) to correct existing abuses and (2) to build up an ideal society. In the first of these Voltaire (1694-1778) was most active; in the second, Jean Jacques Rousseau (1712-1778) formulated the naturalistic theory in his writings, which caused a greater revolution in educational thought and practice than did the work of any other man. Rousseau's work was continued by Johann Bernhard Basedow (1723-1790), who attempted the immediate adoption of Rousseau's principles.

Psychological Movement.—It is difficult to state just when, how, where, or by what agencies the psychological tendency in education fits in with the sociological and scientific tendencies of modern times. It seems to have resulted as a compromise between the old disciplinary doctrine of education through effort and the new doctrine of education by interest. In the psychological movement there is a practical side and a metaphysical side. The great exponents of the practical and concrete phase of the psychological movement were Pestalozzi, Herbart, and Froebel; while Kant, Fichte, Schelling, Schleiermacher, and Hegel aimed to bring out the formulation of the logic of education. Heinrich Pestalozzi (1746-1827) advocated greater regard for method, a deeper sympathy with the child as a basis for work, a greater attention to elementary education as leading up to a possible universal education. He chose subjects for study from the child's closest environment; sought to develop the child's sense-perception; used analysis and the inductive method; and modeled the school upon the home. John Frederick Herbart (1776-1841), founder of the Herbartian movement, advocated great stress upon moral development and insisted upon care in the choice of study, matter, and of method. In a profound psychology, Herbart sought for the use of the process of apperception and of the control of interests. One result of Herbart's theories was the adoption of the principle of the correlation of subjects. He and his immediate followers chose literature or literature and history as a central subject to which all subjects were to be correlated. In place of correlation some of his followers have advocated a system of coördination of studies, in which, instead of one subject, a group of subjects is chosen. Dr. W. T. Harris opposes the Herbartian theory of correlation (or "concentration," as it is called by the German Herbartians) and claims that the actual course of study as found in the schools of civilization is rather a scheme of coördination than of concentration, having five branches of studies possessing independent educational values, each one of which is necessary and has its proper place in the course of study, although these five branches are not all of equal weight in the formation of character or in furnishing a foundation for more advanced studies. Branches that relate to the conduct of life should not be permitted to exclude a due proportion of the branches which relate to physical well-being, creature comforts, and amusements, nor, on the other hand, should the preparation for creature comforts press too hard on the branches that relate to the conduct of life. Froebel (1782-1852) applied the new ideas to early education and evolved the kindergarten idea in 1837 in the village of Blankenburg. To him self-activity was the basis and the method of all instruction; all instruction should proceed from the initial point of natural interests; and that the principal means of education are play, study of nature, and constructive work.

Scientific Movement.—The struggle for what its supporters called due recognition of science in school and university curricula is but a continuation of the realistic movement of the sixteenth and seventeenth centuries. Scientific subjects were slow in finding a place upon the list of studies. Not until 1694 did they appear in German universities, where they met with a consistent opposition that has not yet wholly disappeared. The first permanent real-schule was founded by Hecker in 1747. Spencer (1820-1903), Huxley (1825-1895), and George Combe (1788-1858) fought hard for the recognition of science especially upon the ground of the demands of modern life.

Sociological Movement.—The sociologists regard education as the means of developing society in so far as education equips one to meet economic, political, and social demands. This aspect does not conflict with the psychological, and was, in a measure, supported by Pestalozzi, Herbart, Froebel, and other pronounced psychologists. Perhaps Froebel grasped this phase more strongly than did the others, for his kindergarten is but a miniature society. Even the scientific tendency with its important economic and utilitarian ideas supports the sociological

tendency. Sociologists demand a proper adjustment of the curriculum that subject-matter be well chosen for fitting men for the duties of life.

Eclectic Tendency.—There is now every evidence of an effort being made by educators to give stability to the curriculum and at the same time to satisfy the psychological, the scientific, and the sociological tendencies. The effort aims to enlarge the curriculum; to rationalize methods; to train teachers thoroughly; to employ specialists; and to allow a student to exercise a choice of some subjects to make up his course. Among the advantages claimed for the eclectic system is the furnishing of proper incentives to study by harmonizing both doctrines of education by effort and education by interest. Great freedom of choice is permitted in secondary schools; and since the adoption at Harvard in 1867 of the eclectic system, the principle has become quite general in other American universities. Old World schools cling more tenaciously to their old traditions and the principle is spreading there more slowly.

EDUCATION IN THE UNITED STATES.

Schools in Virginia.—The early Spanish and French explorers in America made no permanent settlements and, consequently, we find no trace of organized educational effort until some years after the founding of the English colony at Virginia in 1607. The first schools of which any trace is found were the result of efforts of the missionaries. The bishop of London, in 1616, was ordered by the king to make collections for the founding of a college in Virginia. The sum of £1,500 was sent over before 1620; 1,000 acres were set apart for a college for the Indians and 9,000 acres for a seminary for the English; and the Virginia Company donated £100 and some books for a library. Sir Edwin Sandys, the treasurer of the company, was prominent in this first educational movement. These attempts at founding a school were completely frustrated by the horrible massacre of the settlers by the Indians in 1622; and, so far as is known, the project had not progressed sufficiently before the massacre to permit of any actual teaching. Another effort to found a church or a school was made prior to 1622, when a certain Dr. Copeland collected the sum of £70 from passengers on one of the ships of the East India Company. It was decided to call the institution the East India School. In 1622 workmen were sent to put up the building. In 1623 additional aid was given by the company and a teacher named Caroloff was sent out, but conditions were, in some way, unfavorable and the work advanced no farther. An island in the Susquehanna was granted for school purposes in 1624 to Sir Edwin Palmer. It was designed to call the institution "*Academia Virginiensis et Oxoniensis*"; but this project failed. In the same year, 1624, the General Assembly passed the first school legislation for America, to the effect that there be conducted formal education of the young Indians to aid in the missionary work in the colony. It would appear that some such work was conducted even to the extent of establishing schools. About the year 1634, Benjamin Symms bequeathed 200 acres of land and eight cows to found a school in Elizabeth county. The funds were placed in the trusteeship of the justices of the peace of the county and the minister and church wardens of the city parish, and the school was opened in 1636. The General Assembly in 1643 confirmed the will and commended the action. Other schools were founded in the colony prior to 1650; among them were the school of Captain John Moon (1655), of Richard Russell (1667), of Mr. King (1667), and the Eaton School prior to 1689. The Eaton School was endowed by Thomas Eaton and was near the Symms School. The Symms and Eaton funds were combined and the income from them now goes to the Hampton High School. Another school endowed with 600 acres of land, ten cows, and one mare, by Henry Peasely in Newport county in 1675 is known to have been established. In 1646 the Assembly of Virginia passed laws for the compulsory education of the orphans. This would seem to indicate that there were schools to accommodate those for whose benefit the law was passed. Every effort was made at this time to secure funds for the support of schools, yet many had to depend upon home instruction. In 1691, Dr. William Blair, under authority of the legislature, went to England and secured a charter for a university which was the forerunner of the College of William and Mary.

Schools in the Dutch Colony.—Adam Roelandsen was the teacher of the first school established in New Amsterdam by the Dutch, in 1633. This school is the first in America of which definite knowledge can be procured. It was an elementary school for the instruction of the children of the Dutch settlers on the island of Manhattan. Its lineal descendant still exists, and this gives it a second claim upon our interest. In 1638 the colony made provision for the support of the schoolmaster by imposing a tax upon the people. Very soon after this time, a private school was opened by Jan Stevensen. Many difficulties beset the early Dutch colonists to provide schools for their children; yet, despite these discouragements, they organized their schools well, and exercised a rigid supervision over the teachers, and were exacting in regard to the teachers' fitness. Among the early teachers were Jacob van Corler, Johannes van Gelder (1662), William Verstius (1654), Harmanus van Hoboocken, Dr. Alexander Carolus Curtius (1659), the first teacher of the Latin School, and his successor, Rev. Ægidius Luyck (1662).

Schools in the New England Colonies.—Within five years after the settlement of Boston (1630), a Latin grammar school was founded there, chiefly through the efforts of Rev. John Cotton, with Philemon Parmount as first teacher. Parmount was succeeded in 1636 by Mr. Daniel Maud, who continued as teacher until 1642. One of its illustrious teachers was Ezekiel Cheever, who taught for over 30 years from 1670. Cotton Mather preached Cheever's funeral sermon; and the loved teacher was honored and praised. His "Accidence" was the first great text-book of colonial times. William Witherell kept a school at Charlestown in 1636. Rev. John Fiske opened a school at Salem in 1637 and was followed in 1640 by a Mr. Norris, who taught there for over 30 years. For over a century after Norris, the teachers of this Salem school were all graduates of Harvard.

Dorchester in 1639 opened the first school in America to be supported by a tax upon the inhabitants. The school was on Thompson's Island, given in 1636 by David Thompson for school purposes, and its first teacher was Rev. Thomas Waterhouse. In 1645 Dorchester appointed the first school committee of three. Newbury in 1639 voted a school fund to support Anthony Somerby as teacher. In 1636 the General Court took steps to promote higher education and their efforts led to the founding of Harvard College. The school at Cambridge was well under way in 1643 under Elijah Corlett, who taught there for 43 years and gained a place among teachers only second to that occupied by Cheever. The school at Roxbury was opened in 1645 and in 1671 it received aid from Thomas Bell towards the support of the poor children. It was at Roxbury that Rev. John Eliot, the apostle to the Indians, lived and carried on such an active educational campaign that he ranks only second to John Cotton as an early educator. In 1645 a school was founded at Braintree. From these schools Harvard in its early days drew all of its students. Other early schools founded in the colony of Massachusetts Bay were: Dedham (1653), Newbury (1658), Northampton (1667), Hingham (1670), Duxbury (1677), Rehoboth (1678), Concord (1680), Barnstable (about 1682), Taunton (1682), Woburn (1685), Lynn (1687), and Marblehead (about 1698).

Plymouth Colony.—It appears that education was not established here in 1650, when efforts were made by the General Court to induce the people to adopt some form of organization. An attempt in 1667 to found grammar schools failed. Plymouth opened a school in 1671 under John Morton, who was succeeded the next year by Mr. Corlett from Harvard. In 1692 the colony was merged with Massachusetts.

Connecticut.—The first school was opened in Hartford in 1639, only four years after its founding, by Rev. John Higginson. New Haven followed quickly with the services of the famous Ezekiel Cheever as teacher until 1650. In that year Connecticut passed its celebrated laws regarding education, which, modified from time to time to meet new needs, remained in force for over 150 years. The Hopkins Grammar School of New Haven was founded in 1660, with Jeremiah Peck as teacher. In 1672 land was granted to establish grammar schools in the chief towns of the four counties, Hartford, New London, New Haven, and Fairfield. An elementary school was established at Paquanake in 1678.

Rhode Island.—The first school was at Newport in 1640; Providence followed with a grant to support a school in 1663; and by 1716 we are told there were schools of all kinds, but unorganized. It was not until 1789 that under the earnest direction of Mr. Joseph Howland the matter of public instruction in Rhode Island was supported by legislative enactments. In 1800 free schools were opened in Providence; and in 1828 a school law was passed which formed the basis for the present school system.

New Hampshire.—This state formed a part of Massachusetts until 1680. Prior to that date, it enjoyed educational advantages. Parmount and Maud, the first teachers Boston had, settled in New Hampshire, the one at Exeter, the other at Dover. At Hampton in 1649, John Legat taught. In 1680, when New Hampshire became independent, a general school law making ample provisions was passed and remained in force for many years.

Maine.—A part of Massachusetts until 1820, its history is intimately connected with that state in the earlier years. Nathaniel Freeman taught in York in 1701; Portland opened a school in 1728, where Mr. Hicks taught for the sum of £2 8s. 10d. for the year. Married men were taught by Samuel Weston in Canaan in 1728; and Samuel Wood introduced the newspaper as an educational adjunct into his school at Canaan in 1798. Buxton had a school in 1761; New Gloucester, in 1764; Machias, in 1774; and Norridgewock in 1779.

Vermont.—The first settlement was made in Vermont in 1724; and the first school of which any record is left is that at Guilford in 1761. The constitution of 1777 made the opening of a school obligatory upon each town.

Delaware.—The Swedish colony, founded in Delaware in 1640, began almost at once to encourage education. Books were sent over from Sweden and at the end of the seventeenth century schools were numerous and nearly all could read. The one person often discharged the duties of minister and teacher. Gradually English and the Dutch (from New Amsterdam) found their way in and the Swedish schools lost their distinctiveness. The earliest recorded school is that of New Armstel (now New Castle), taught by Ernest Pietersen in 1657. The church, through its missionary Society for the Propagation of the Gospel, contributed also to educational work. A school was opened at Wilmington by the Friends in 1765 and has been open continuously since; another was established by the Presbyterians at Newark. Efforts towards systematic organization of schools in Delaware were desultory until the passage of the general school law of 1875. Prior to that there was no state supervision (and is not yet); no regulation regarding the examination of teachers; and no school accommodation for colored children.

Pennsylvania.—Swedish colonists from Delaware occupied Penn's grant of land when he visited it in 1682. A school had existed at Upland since before 1679. Penn made instant provision for education upon a very thorough basis and his efforts were fully supported by the Assembly. In 1682 it was ordered that the laws be published and the book be used as a textbook in school. In 1683 it was ordered, with penalties for neglect, that parents see to it that the children could read and write at twelve years of age; and that the child be taught a trade. The Friends Public School was founded at Philadelphia in 1689 and, later, became the William Penn Charter School. Germantown Academy or Union School was founded in 1761. Moravian schools were founded at Bethlehem and Nazareth before 1750. The Wyoming Valley system of schools was founded by Connecticut colonists in 1768 and remained in force until the state law of 1834 superseded it.

New Jersey.—The early population of New Jersey was formed from the Dutch from New

Amsterdam, English from New Haven, the Swedes from Delaware, and the English and German under Penn. Naturally early educational conditions were complicated. Engelbert Steenhuysen established the first school in 1661 or 1662 at Bergen. The first school at Newark was taught by John Catlin in 1676. For 75 years after 1702 East and West Jersey were placed under the jurisdiction of New York and voluntary schools alone existed. Among these was the Log College at Neshameny conducted by William Tennent. With the founding of Princeton College about 1750 and of Rutgers College at New Brunswick just before the Revolution, interest in education was carried through the period of the War of Independence, many of the scenes of which were in New Jersey. Advances in the organization of education were made slowly and at considerable intervals; and it was not until 1867 that a modern school law took the place of the many desultory and somewhat contradictory legislation upon the subject.

Maryland.—Ralf Crouch crossed from Virginia to Maryland and taught there from 1639 to 1659. Public schools met with little favor in these early days when missionary and parochial schools filled the needs, until 1696, when efforts were made to found county schools by bequests, donations, duties on exports and imports. Not until 1717 was one of these started, and further attempts were discouraged. Charles Peale, father of the famous portrait painter, conducted the Kent County School at Chestertown before 1745, and James Hunt taught in Bladensburg in 1773. In 1812 a tax was levied on banks to provide a state fund; in 1826 the first direct school tax was levied. But it was not until 1865 that a new school law supplemented by acts of 1868 and 1872 secured prosperous schools.

North Carolina.—About 1705 Charles Griffin came from the West Indies and settled in Pasquotank county, where he opened a school. A free school law was passed in 1745, but as it was only permissive and entailed no obligations little good was done. Education was promoted by the coming of some Germans from Pennsylvania, and by some Presbyterian missionaries from New York. The academy at Wilmington was founded in 1760; that at Newbern in 1764; and by 1829, 186 had been chartered. Attempts to pass a bill providing for a complete system of schools failed in 1817, and again in 1825. Acts of 1839 and 1844 caused slight advances, but it was not until 1868 that a comprehensive law providing for compulsory attendance upon free schools cleared the way for substantial progress in education in North Carolina.

South Carolina.—Early legislation provided in 1701 for the establishment of a free school in Charleston, which was taught by John Douglas. The Society for the Propagation of the Gospel opened a school in Charleston in 1711. A law of 1722 sought to provide schools for all. The South Carolina Society in 1737 opened a school; the Winyaw Indigo Society opened a most important school at Georgetown in 1756. Richard Beresford bequeathed £6,500 in 1722 and this formed the foundation fund for the school near Charleston, which became one of the foremost schools of the state down to Civil War times. By 1826 thirty-two academies had been founded. In 1870 a bill providing for adequate educational supervision and organization was passed; and a prosperous era of education followed.

Georgia.—The Moravians founded missions for the Indians in the earlier days and carried on their education until the settlement removed to Pennsylvania in 1738. George Whitefield and James Habersham, in 1740, founded a school for orphans; poor school legislation began in 1783; and by 1800 six academies had been founded. The number of academies had increased to 64 in 1829, and to 186 in 1840. In 1823 an act was passed providing for the equal distribution of $500,000 between free schools and academies. A free school law was passed in 1868, which among other things provides separate schools for the two races.

Ohio.—At Marietta, the first settlement made by the "Ohio Company" in 1787, a school was established in 1788, one year after the founding of the city. Academies were incorporated in 1802 and the educational interests were rapidly advanced. By a law of 1817, six or more might incorporate a private school. Public schools were first provided for by the act of 1821, but being only permissive it failed of its purpose and a more stringent law was passed in 1825. In 1837, during a period of educational enthusiasm, a state superintendent of education (Samuel Lewis) was appointed, and Calvin E. Stowe was sent to Europe to report upon the condition of elementary education there. The "Akron Law" of 1847 provided for the extension of the graded schools; schools were made free in 1853. The act of 1885 permitted high school maintenance by united township, village, and special school districts. By the act of 1900 great ease of consolidation of rural schools is secured.

Indiana.—A French missionary, M. Revet, taught at Vincennes, in 1793, the first recorded school within the boundaries of the present state of Indiana. The law of 1824 provided for the erection of school buildings by the labor of each able-bodied man in the district for one day each week until completion, or payment of 37½ cents for each such day's default. In 1825 Union Seminary was founded, and by 1843 there were 24 similar institutions. Corydon Seminary, founded in 1816, was the first of its kind, and 37 were chartered by 1850. A law passed as general school law in 1852 was declared unconstitutional; but one was secured in 1867. High schools were commissioned in 1873.

Illinois.—It is probable that the Jesuits founded a French college at Kaskaskia in 1754. John Seeley taught in an abandoned cabin in Monroe county in 1783 and Francis Clark succeeded him in 1784. John Messenger taught a night school in 1804; and the first school in Cook county was started in 1816. The academies of Madison at Edwardsville, Washington at Carlyle, and one at Belleville were incorporated in 1819. The first general school law was passed in 1825 and was intended to provide free schools, but it was repealed by a rider in 1827. A few academies were chartered in 1840 and 1843. The first state superintendent was Nin-

ian Edwards, appointed in 1854. The present system of schools dates from the law of 1889.

Michigan.—It is believed that Cadillac, when in command at Detroit, offered funds to provide for a school for the French and Indians at the fort. It is certain that a mission school was established in 1755. Detroit's first school building dates from 1775; and though schools were fairly numerous they were of the log cabin type. A law passed in 1827 was the forerunner of greater educational activity. A ladies' seminary was incorporated in 1830; children were taken by covered wagon to and from school in that year. John Pierce was state superintendent in 1836. In 1837 an act providing for partial support of schools by tax was passed. Graded schools were introduced into Detroit in 1842 and into some other cities in 1843. Free schools were established over the state in 1869.

Wisconsin.—The first teacher within this area was James Portier, who taught at Green Bay in 1791. The second school was at Prairie du Chien in 1817. Rev. Eleazer Williams, in the employ of the Episcopal Missionary Society, started a school for Indians on Fox River, opposite Shanty Town, in 1823. The work endured for 16 years and left a marked impress upon Michigan education. The first public school was instituted at Milwaukee in 1836, the year in which Wisconsin separated from Michigan, and the education laws of Wisconsin were the same as those of Michigan. The law of 1849 put the schools on a new basis; and that of 1859 provided for consolidation of districts in the support of one school. High schools supported partly by the state came in in 1875.

Minnesota.—Mission schools for Indians were established in 1834. The first school for white children was opened at St. Paul in 1847, of which Harriet Bishop was the first teacher. Dr. Williamson inaugurated the movement and enlisted the support of the National Educational Society. In 1849 the territorial legislature at its first convention made provision for the support of schools by tax, for licensing of teachers, and for school units. The first graded schools were established at Minneapolis (then called St. Anthony) shortly after 1860. High schools were provided for by the act of 1878.

Iowa.—The log schoolhouse was common in Iowa prior to its admission to statehood in 1846, when 100 such buildings were reported. The first of these schools was established by Benjamin Jennings, near Keokuk, in 1830. By the constitution of Iowa, generous provision was made for education in the appointment of a state superintendent, the establishment of a state fund, and an organized system of public schools. Horace Mann and Amos Dean, chancelor of the State University, prepared the school law of 1858, which secured free schools, established county superintendents, gave aid to institutes, and authorized county high schools.

Missouri.—The school at St. Louis, conducted in 1774 by J. B. Trabeau, was the first within the state. St. Louis tried, in 1817, to secure a system of free schools, but was not successful until 1839, when legislation was secured which provided for the educational needs of the state. The first high school was opened in St. Louis in 1853. The law of 1866 placed the schools upon a much better footing than had been formerly enjoyed. In 1858, W. T. Harris began his effective work as principal of the schools of St. Louis and was elected superintendent in 1868. Kindergarten was made a part of the city school work of St. Louis in 1873, a work in which Dr. Harris was greatly assisted by Miss Susan E. Blow.

Oklahoma.—A public school system was provided for immediately upon the organization of Oklahoma as a territory in 1890. The first high school was established at Kingfisher in 1889.

Kansas.—The first school for white children was opened at Kansas City (then called Wyandotte) in 1844; one for Indian children was established by missionaries sometime before 1836. With the great influx of immigrants in 1855 education made great advances especially around Lawrence.

Nebraska.—The first mission school was at Bellevue in 1836; and the first public school at Brownville in 1855. The basis of education in Nebraska for 10 years was the Iowa law of 1858, which was taken almost wholly and followed until 1867, when the Ohio law was largely followed.

North and South Dakota.—When this district was separated from Minnesota in 1861, two years after its settlement, there was a school in Bonhomme county, S. D. Within six years there were 581 pupils in attendance in 29 school districts and at two private schools. This number had increased in 1878 to 7,150 and the organization of state schools had been perfected.

Kentucky.—Harrodsburg had the first school in Kentucky. It was taught by Mrs. Jane Comes about 1776. In 1777 another school was opened at McAgee's Station. These were private and were of the class afterwards known as the "Old-field" or "Hedgerow" schools. Liberal grants of land for the support of schools were made in 1780 and in 1783 preparations were made for the Transylvania University. Rev. David Rice, in 1785, began instruction in connection with it in his own residence at Danville. By 1800 over 30 academies had been founded under liberal support from the legislature. For several years these schools suffered from the apathy of the people, and their failure aroused a feeling of educational needs. Other school systems were looked into and that of New York state was favored. Louisville had a free school in 1829 but it lasted only one year as such; and it was not until 1840 that tuition fees were abolished and schools made free in Louisville. Night schools were instituted in that city in 1834; and that year saw a form of school superintendency adopted. A public school law was passed in 1838 but it was 1853 before its application became general. The Civil War had its effect upon the schools of Kentucky as upon other states. After that the Peabody Fund was of much benefit, but not at all equal to the generous support which the state has given to its schools.

Tennessee.—Davidson Academy, the foundation of Nashville University, was endowed by the legislature of North Carolina in 1785. It opened in a stone church in 1786 with Rev. Thomas Craighead as teacher. Congress gave Tennessee large grants of land in 1806 for the

support of colleges, academies, and schools. Through bad administration the funds from these liberal endowments have not been as large as might reasonably be expected. Elementary schools did not share in the proposed scheme, and did not reach a proper status until a properly balanced plan was brought forward in 1830. Schools suffered, however, from a lack of financial support and short term schools largely prevailed.

Colorado.—The first school in Colorado was established at Boulder in 1860, to provide for the children of the gold seeking emigrants, who poured in after the discovery of gold in 1858 by Green Russell's party. Though the children of Colorado for several years after its admission as a territory in 1861 were few in number, and widely scattered, provision was made for their education. The school funds were frequently misappropriated, and slight progress was made in education until after the establishment of the School of Mines.

Utah.—The Mormons, who first settled in Utah in 1847, established the early schools there, and these provided for the education of parents as well as the children, at one of which Brigham Young was a pupil. The establishment of mission schools by other denominations aroused the Mormons to the necessity of providing higher education for their children. Until 1870 schools were private; after that date schools were supported by fees. Schools in Mormon settlements were held in meeting houses until 1880, when the legislature made provision for school buildings.

California.—The Spanish missions following the settlement in 1767, all had schools attached to them, and it was from these alone that educational advantages were derived until 1847, when the Town Council of San Francisco built a small schoolhouse. The first teacher in California was Thomas Douglass, a graduate of Yale, but this school was forgotten in the excitement caused by the rush for gold in 1849. In 1851 the state superintendent was appointed, school districts were established, and the duties of school committee prescribed. The following year a school tax was provided for to be shared equally with the numerous parochial schools. The first high school in San Francisco was founded in 1856; the first normal school in 1862. Text-books for rural schools were made uniform in 1864, and in 1865 the state began a system of editing and printing free text-books.

Arizona.—Parochial schools supplied educational needs in Arizona until 1864, when a provisional bill was passed extending educational privileges to such districts as should avail themselves of them, but Prescott was the only city that took advantage of its provisions. By another law of 1868, school superintendency was provided for, but no appointments were made for several years.

Nevada.—Earliest provisions for education in Nevada were made by the constitution of 1864, which provided for a complete school system, passing through all of the grades up to the State University, which was first opened at Elko in 1874, where it remained until 1876, when it was removed to Reno and fulfills the added responsibilities of the normal school. Lands which Congress had appropriated for an agricultural college were by permission diverted to the support of the School of Mines.

Oregon.—Missionaries founded schools along the Columbia and Willamette rivers. One of the first secular schools was that near the village of Chamfrog founded by Mr. Edwards in 1835. Other schools, including several mission schools for Indians, were soon after established. The Indian Manual Training School was founded by the Methodists in 1842 and later coalesced with the Oregon Institute. Denominational schools multiplied between 1840 and 1850 and from these were evolved the public school system by legislation in 1849 which gave Oregon City the first public school in 1850. The Agricultural College (1868) and the State University (1876) were at first private institutions.

Washington.—Private and denominational schools in which the people were deeply interested prepared the way for public schools which the act of 1854 introduced. Educational growth in Washington has been rapid. The first high school was established in 1883 at Seattle.

Idaho.—Schools developed slowly in Idaho in early days. There were only 14 schools with 436 pupils in 1866. In Boisé City, the capital and largest city, there was no school in 1873 and only four months' session in 1874. After 1880 the growth was rapid and was accelerated by the establishment of the State University at Moscow (1892) and normal schools at Albion and Lewiston.

Arkansas.—Though the first settlement was made at Arkansas Post in 1686, and Jesuit missionary schools were founded for the teaching of Indians, nothing was done toward a system of public schools until 1820. Previous to this time education for white children had been conducted by private schools. In 1829 a public school law was passed, and the first fruits of this legislation was the establishment of Batesville Academy. Some provision was made for free tuition when necessary. In the general school law of 1843 a school curriculum was prescribed, a county board was provided for, the examination of teachers were controlled, and a system of school visitation was established. Educational efforts were retarded during the period of the Civil War, but the act of 1867 prepared the way for substantial progress and by 1870 school expenditure amounted to $500,000, a large part of which was raised by direct taxation. The State University at Fayetteville was opened in 1872, and in 1875 a branch normal school was established at Pine Bluff.

Louisiana.—Schools were first established by Ursuline nuns and some Capuchin monks at New Orleans in 1727. Of the latter, Father Cecil was most prominent in this work. When the Spaniards took possession of the country in 1761 Spanish teachers conducted schools and made an effort to substitute their language for the prevailing French, but with slight success. The University of New Orleans was founded in 1805 and covered elementary and secondary work after methods similar to those in the University of France. A free school law of only one year's duration was passed in 1806; liberal appropriations were made for the support of such schools as existed, and as early as 1821 a system of free school supplies was adopted in

New Orleans. In 1847 a free school act provided for the establishment of schools supported by taxes, established the offices of state superintendent and county superintendent, and although the office of county superintendent was abolished in 1851 it was revived in 1879, along with other educational features provided for in the new constitution.

Texas.—Early French and Spanish missionaries established schools. In the 200 years, from 1620 to 1820, that this part of the country was controlled by the Spaniards the schools were very largely for the purpose of educating and converting the Indians; but it is known that there was a public school for white children at El Paso as early as 1806. In 1829 the Mexican government endeavored to establish a public school system, though the schools were not wholly free and the subjects taught in them were few in number and meager in extent. Primary schools with more adequate provisions were secured through the efforts of the English-speaking inhabitants, and while the legislature made liberal provisions of land for their support only four schools were in operation in 1834. Immediately following the declaration of independence from Mexico in 1836 provision was made for an academy, a college, and a university within its limits. Upon the admission of Texas as a state in 1845 its constitution contained abundant provisions for large educational work; but it was nine years afterwards before any practical results were seen, and the first school under its operation was established at San Antonio. Education in Texas during the Civil War period was less affected than in some other states. Such a liberal grant of land had been made for the support of its schools that with the increase in prices of land within recent years Texas now has the largest school fund of any state in the Union.

Mississippi.—No schools are known to have been established within this district until near the close of French and Spanish occupation. It was through the efforts of a colony of New Englanders that private schools were established near the close of the eighteenth century. Schools for girls were established as early as 1801, when a ladies' seminary was conducted by Rev. David Kerr and his wife. Jefferson College received its charter in 1802, but did not begin instruction until 1811 for lack of funds. Before that time Washington Academy had been established. The first steps towards the establishment of a general free school system were taken in 1846 under the auspices of Governor Brown. Such laws as were passed met with some popular opposition, and objectionable features were removed by numerous amendments. Mississippi had no general law until after the period of the Civil War, when a highly perfected system was provided for by the act of 1870.

Alabama.—The French and Spanish during their period of occupancy made some efforts to promote education within this district; but the first school of which any record is given was taught by John Pierce, a New Englander, at Boat House, on the Tensas River, in 1810. An academy at St. Stephens in 1811, and another in Huntsville in 1812, seem to have completed the educational equipment prior to the admission of Alabama as a state in 1819. The first public school system within the limits of Alabama was established at Mobile in 1826 under a special law. In 1830 the Methodists established La Grange College, and it was followed by a number of influential denominational schools. Graded schools were introduced into Mobile in 1852; teachers were certificated.

Florida.—Though occupied at an early date by Spaniards, there appears to have been no educational progress in Florida until a short-lived effort was made in 1831 on the part of the people of Tallahassee, who formed the Florida Educational Society. This institution was largely of the nature of a lyceum with branches established in adjacent towns. From the income of lands appropriated by Congress only private schools were supported until about 1849, when public schools for white children were authorized to share in the appropriations from this fund, but the present public school system in Florida dates only from 1869.

New Mexico.—Mission and parochial schools were doubtless established by the Spaniards, who settled here in the latter part of the sixteenth century. Records for 1806 show that in that year Santa Fé had 408 children in such schools. In 1830 many other towns had parochial schools of the same plan as those of southern Europe. Public schools were founded after 1855 by a permissive school law, but as its operation depended upon popular vote and the first election showed 5,016 against it and only 37 for it, it would appear that the parochial and mission schools satisfied the educational needs of the people. Another law, enacted about 1865, made provision for the support of schools by a tax of 50 cents upon each pupil.

Wyoming.—Organized as a territory with an extremely small population, unstable in its character, educational matters received but slight attention until 1880. In the earlier days some provision was made for superintendency, but it was an office shared by other duties until erected into a separate office in 1880. The State University was established in 1886. In it is a normal department for the preparation of teachers. In the constitution of 1890 splendid provision has been made for educational development.

Montana.—The school law of 1864 made provision for schools by means of a very limited appropriation. In 1874 this amount was fixed by a well defined school tax. In 1868 the schools had about 700 pupils; within 10 years the number of pupils was nearly 2,400. State and county superintendency has been provided from the inception of the system. The first high school was established at Butte in 1883, and, with the exception of another at Anaconda, was the only one in the district for 10 years.

SCHOOL ADMINISTRATION.

There are four units of administration recognized in the common school system of the United States. These are: the school district, the township and incorporated city, the county, and the state.

School District.—This is the most democratic feature in the entire political structure. It arose almost spontaneously in the earlier colonial administration, for it was the form which permitted the greatest ease and effective-

ness in school administration under the conditions then existing. It is to-day the most general unit in a great majority of the states. In some states it is displaced by the township, as in Maine, New Hampshire, Vermont, Massachusetts, New Jersey, and Indiana; in others it has continued side by side with the township system, as in Rhode Island, Connecticut, Wisconsin, Minnesota, Illinois, the Dakotas, and parts of Michigan. Sometimes the district is a part of the town or township; in other places it is a subdivision of the county. In some districts the voters in the district elect school officers and levy taxes; in others the county discharges these duties.

The Township and Incorporated City.—These units are fast displacing the district. The larger township includes in some cases several districts, and the expediency of consolidating these districts under the control of the township is becoming popular both for economy and effectiveness in administration and for securing uniformity of school standards and methods within the township. Another advantage is that the wealthier portion of the township is thus forced to contribute to the schools of the poorer section. Maine, New Hampshire, Vermont, Massachusetts, and Indiana have compulsory township organization by legislative enactment. The district system was abolished in Massachusetts in 1882, in New Hampshire in 1886, in Vermont in 1892, and in Maine in 1893. Several other states have adopted legislation that permits centralization at the option of the school units.

The County.—This unit is most common in the South, where in all departments of political administration the county has been recognized as the unit, so that in that part of the United States it is most usual for the administrative educational offices to be held by county officials.

The State.—This is the unit of general legislation in school matters. The work of instruction in the several schools is in no sense supervised by state school officials, and this condition is caused by the great number of schools within the state limits, which number would prevent the possibility of visitation by one official.

Federal Relations to Education.—At no time in the history of the United States has the Federal Government ever adopted any measure of control over educational matters in the states, but for a long time it was felt that there should be some close relation established between the state systems and the Federal Government. This end was secured in 1869 by James A. Garfield, by whose efforts there was established a national department of education, of which Henry Barnard was the first commissioner. The work performed by this office has been advisory in its general nature, but its most valuable service to the cause of education has been the careful and thorough collection of information regarding the status of schools in the different parts of the country, the systematizing of this information, and the distribution among the people of the information which it has so thoroughly and carefully gathered. The other incumbents of this important office have been John Eaton (1870-1886), Nathaniel H. R. Dawson (1886-1889), William T. Harris (1889-1906), and Elmer Ellsworth Brown (1906-).

SYSTEMS OF EDUCATION.

Elementary Schools.—Elementary education in the United States presents throughout the whole course of its development many and varied aspects. In consequence of the gradual development of the country, elementary education in the several states at any fixed time presents no uniformity in standard or in method. This condition follows naturally from the unequal development of the several parts of the country and the varying conditions of settlement which education was called upon to meet. Records which we possess regarding the development of schools throughout the United States in the earlier days before 1800 give facts relating to the legislation, but we have nothing but the testimony of those who were educated before that period that gives any information of the curriculum, administration, or organization of elementary schools. While reading, writing, religion, and law would seem to be common subjects in nearly all of the elementary schools of this early period, it is by no means certain that so practical and essential a subject as arithmetic is to be found generally taught in the schools of New England until after 1750, nor does it seem that spelling was taught as a separate subject from reading until after the War of Independence. America had advanced well into the nineteenth century before any of the elementary schools of the country had passed beyond the simplest and crudest stages of organization. All except a few in the larger cities were ungraded, for in those earlier days the sparsely-populated districts were well satisfied when they were able to secure even a one-room schoolhouse. Naturally, graded schools began in the thickly-populated cities, where schoolhouses with several rooms could be provided. At first the grading was necessarily only a very rough classifying of the pupils and in no sense approached the perfection of classification which the better systems and heavier tasks of administration of the modern day call for.

The Kindergarten.—The kindergarten naturally divides itself into four principal movements in its historical development in the United States. The first of these, known as the pioneer movement, originated in the city of Boston, when Miss Elizabeth Peabody of that city became interested, in 1859, in the writings of Froebel. In 1867 she studied in Germany with Froebel's widow, and upon her return to America in 1868 she took up her life's work of propagating the principles of Froebel's educational system. Her work was first directed toward enlisting the sympathies of parents. Then philanthropists were induced to contribute to the financial support of the movement, and the earliest kindergartens in the history of education in the United States were more or less charity organizations. It was with some difficulty that the Boston school board was persuaded to permit the use of one of its buildings for an experimental course in kindergarten. This movement was further supplemented by a periodical devoted to the elucidation of the principles, which was conducted for a period of four years. Thus it may be seen that the pioneer movement broke ground in four directions, namely: family, public, philanthropic, and literary.

The second stage of a pioneer nature emanated from New York, where Miss Harriet Haines invited Miss Boelte to conduct a kindergarten school in New York City for one year. At the end of that time Miss Boelte married Professor John Kraus and established an independent kindergarten class and a normal school.

The second movement, the philanthropic, emanated from the village of Florence, Massachusetts, where in 1874 Mr. S. H. Hill of that place generously gave the money with which to open the first free kindergarten school in the United States, and when assured of its success, he supplemented his gift with a sum sufficient to continue and to extend the work.

In 1878 in Boston, Mrs. Quincy A. Shaw began her philanthropic work of supporting free kindergarten schools for poor children, and continued her generous work for fourteen years, at one time supporting thirty such institutions. These examples were imitated in different parts of the United States, the best results being obtained in San Francisco, where the Golden Gate Association has trained over thirty thousand children, received and distributed endowments amounting to more than half a million dollars, and has published a great deal of valuable literature upon the subject.

Chicago, Pittsburg, Brooklyn, Cincinnati, Louisville, and other large cities have supported kindergarten associations productive of most beneficial results. At no time have private educational enterprises been nearly so productive as those of a public character. Had the kindergarten never passed beyond the stage of private philanthropy, it would have remained a privilege for the wealthy few, and possibly an occasional gift to the poor. Boston's public kindergarten was short-lived and was given up on the ground that the city could no longer bear the expensive movement.

The second public kindergarten, opened in Brighton, Mass., in 1873, lived only one year, and was given up when Brighton was annexed to Boston in 1874. Then it was that the Hon. William T. Harris, superintendent of the schools of St. Louis, with the co-operation of Miss Susan E. Blow, suggested that experiments be made in connection with the public schools in St. Louis, with a view to ascertaining how far it would be possible to incorporate the system as an introductory movement in elementary education. To this work Miss Blow gave to St. Louis her gratuitous services as conductor. A public experimental kindergarten was opened in 1873. Dr. Harris resigned his position as superintendent of schools in 1880, and in 1889 assumed the larger duties of United States commissioner of education. He had the great satisfaction of seeing his experimental work at St. Louis assume large proportions. There were then enrolled in the kindergarten movement in that city 7,828 children, and the system had become so firmly established that it has resisted all attacks and adverse arguments. Educators realized how much depended upon the success of this experiment at St. Louis. Had it failed, it is more than probable that the kindergarten movement would never have taken a place in the elementary system of education in the schools of the United States. It was indeed fortunate for the whole system of elementary schools that the experiment had been made by one whose executive ability and profound sociological knowledge eminently fitted him to direct this important work to a successful issue. Not only were the educational results most satisfactory, but the cost of the experiment was sufficiently low to completely refute the arguments of the Boston board regarding its high cost. Not only did Dr. Harris show by this experiment that the system was feasible and required no expensive additional equipment, but he gave convincing proof that children trained in kindergarten made better courses in the elementary schools than did those who did not share in early kindergarten training.

And it was also made plain that the work of conducting kindergarten schools might be safely intrusted to young women with proper training in the normal lines. After such conclusive proof, it was only a matter of time before the system spread widely throughout the public schools of the country.

In recognition of the fact that the kindergarten teacher required a special training and that she should practically master all of Froebel's philosophy, several training schools for their preparation were founded. Very soon after this the success of the movement was assured. The most important of these training schools is that conducted by Madam Kraus-Boelte in New York, which has always held a foremost place among such institutions.

In addition to these private training schools, 42 of the public normal schools and all the institutions known as teachers' colleges conduct special departments for the preparation of kindergarten teachers, and the course in nearly all of these has recently been extended to two years.

The system known as Kindergarten was really evolved as a part of the psychological movement promulgated in Europe by Friedrich Froebel. The starting point of the system is that self-activity, properly guided, is the basis of a child's education. In Froebel's philosophy the child, for the first time in the history of education, took its place as the first thing to be considered in matters of education. Other educators had seemed to regard him as passive, or as something to which their principles should be applied. Froebel was the first to insist that the thing of utmost importance in matters of education was the child with his interests, experience, and activities, and that in any rational system of education he should be the starting point and should be utilized as a means to an end. He insisted also upon improvements in the school and demanded that its spirit, purpose, atmosphere, and morals should harmonize as much as possible with the ideal environment of his home life. With other systems of education the teacher was all; in Froebel's, the child is everything.

The chief instrument upon which Froebel relied was the stimulation and proper guiding of a child's activities. He took the child's spontaneous actions as a starting point, at first gave them full play, then gradually but surely led them, first to ideas, and, second, to acts of volition in which the emotions also played a part, and strove for both emotional and volitional acts rather than for intellectual results. It was upon the will, rather than upon the intellect, that Froebel worked. He maintained that these

principles would hold throughout the child's educational life.

In the practical development of his system, he succeeded in applying it to the early stages of a child's life, and to this stage of education, according to his principles, has been given the name of kindergarten.

It is held by many that the true Froebelian educational movement consists in the application of his philosophy and fundamental principles to the whole cycle of education; and, while this has never been wholly accomplished, it is to be remembered in this connection that very many of the important changes that have been made in the higher grades of school work are not only consistent with, but were actuated by, the principles which Froebel enunciated. This is, perhaps, most evident in the choice of materials which are to furnish the child's intellectual exercises in his school work. Froebel claimed that the things to be chosen were those that were closest to the child in his natural environment; and it was upon these things that he has based his several exercises, and the presentation of new matter to a child in his course takes place with a certain degree of ceremony and an added incentive by the name of gifts. Every added piece of apparatus comes to him in the form of a gift. It is by this that his interest is excited and through it his emotional and volitional development takes place.

The second fundamental principle holds that if a child's education is intended in any way to fit him to attain to certain individual and social results, the effects of his instruction should relate as intimately as possible to his life as he lives it, and that it is through the activities of a child that the culmination of the process of instruction is attained.

It is remarkable how a careful analysis of modern school methods, school organization, and school courses will show the effects of these two fundamental principles of Froebel's philosophy.

It has been said elsewhere that the sociological movement in education displayed two sides, one practical, of which Herbart, Froebel, and Pestalozzi were the exponents; the second, abstract or theoretical, of which the philosophy of Kant, Schelling, Hegel, and Fichte were the supporters.

Herbart continually protested against the philosophy of the abstract or theoretical side, while Froebel utilized all that he could of it in the development of his educational system.

Of the three educational tendencies, the psychological, the scientific, and the sociological, Froebel's kindergarten is the only system that includes all three. His system is intensely sociological, in that his school harmonizes with the home and with society; it is scientific, for he has made strong use of nature study; and it is more psychological than the system of any other educator. The practical side of it is borne out by his recognition of the educational value of hand work. Rousseau recognized the value of industrial training upon social and economic grounds. Pestalozzi used it for imparting knowledge and as increasing the receptive faculties. Froebel, on the other hand, while recognizing all of these, appreciated more keenly its distinctive educational value, and it was to this end that he made the greatest use of it. It is through this constructive faculty that a child gains power, for every activity in its connection is expressive of some idea or of a purpose which he has gained by instruction.

The gifts are introduced into his system for the purpose of ascertaining what the child can do with them, and, while they are of the simplest forms, they are at the same time capable of contributing to intricate or complex designs. The effort to see what a child can do with the material that is placed in his hands is a means of finding out how far the child can go in the outward manifestation and expression of his inner self. At the same time, constant repetition produces habits; and crystallized habits form character.

Secondary Education.—In the upbuilding of a school system attention is naturally first directed to the establishment of good elementary schools. When these are secured, attention is then given to some higher form of education. In 1890 in the United States 367,003 pupils were receiving secondary instruction from the 9th to the 13th year's work of the course of study. In 1904 this number had increased to 822,235, or had more than doubled in 14 years, when the number of secondary students in the United States was only a little more than one per cent. of the entire population in 1904. This great increase in the number of pupils was of course consequent upon the increase of the number of high schools established throughout the country, and of these institutions the public high contained 77 per cent. of the pupils, the others being in attendance upon private and denominational institutions.

It may be noticed in the history of the development of education in the United States that while Virginia began with elementary schools, the New England colonies began at the top with academies and a university and built down. The New England colonists were probably the best educated class of people, as a whole, that ever settled in a new country, for it has been shown that more than one out of every 250 of them was a university graduate. So that schools more nearly approaching secondary schools were in New England in advance of the more elementary class. The earlier schools, both elementary and secondary, did not teach courses of study but only particular branches elected by the pupil by some accident or caprice (of other than reading, writing, and arithmetic).

We find the first Latin grammar schools of the country founded in Boston in 1635 and in Dorchester, 1639. These were private, and yet it is not until the year 1821 that the first public high school with a two to four years' course of study was founded, and that at Boston.

Meantime, secondary education had been cared for by colonial grammar schools and private academies. But the school of 1821 at Boston was a decided advance in secondary education, in that it possessed a course of prescribed subjects to be studied for a definite period. Similar schools were established in Portland, Maine, in 1821; in Worcester, Mass., in 1824; in New Bedford in 1827; in Cambridge and in Taunton in 1838; in Philadelphia in 1839. Within the next ten years similar schools were added, in New Orleans in 1843, in Cleveland, 1846; Cincinnati, 1847; Toledo, 1849. The object of these schools was the preparation of boys for college, and, at

first were practically public Latin schools, with slight changes from the old Colonial type of study. Modern common school education was not fully suited to the conditions of everyday life. It was impossible for a single school to meet the demands of a board of college examiners, and also effectually help those not taking a college course. A number of studies were added to the prescribed secondary course (which frequently carried 20 to 30 subjects in 1860) and it became top-heavy. This difficulty was met by a reorganization into recognized courses, such as the classical, the Latin scientific, and the modern language course. Of 176 high schools over 90 are conducted along these lines.

Technological Schools. A medium of instruction directly bearing on a vast field extending from the industrial arts and sciences in their most intricate phases, to agriculture, or to the simple manipulation of some productive trade. The great principle is not an attempt to turn out ready-made workmen in any branch, but to prepare boys and girls to commence learning any trade requiring trained hands. The schools may be divided into (1) an institution of university grade devoted to advanced mathematics and sciences, and to the theory and practice of industrial operations, preparing students for managers, superintendents, engineers, architects, etc.; (2) giving practical working instruction in some particular industry and in the science and art underlying its problems, as weaving, dyeing, construction, etc., preparing foremen, designers, and experts; (3) the trade school proper that trains in the practice of some productive trade. The earliest School of Technology was the Ecole des Ponts for training engineers for the French government (1747), and the principle has spread over the civilized world. The first United States foundations were the U. S. Military Academy at West Point and the Rensselaer Polytechnic Institute at Troy, N. Y. (1824).

Manual Training. The courses in manual training were adopted to supply skilled labor to the manufacturing interests, and to give city children that manual and domestic service training common in rural communities. The Illinois Industrial University (Mr. N. C. Ricker) supplied a course in wood and iron (1871); it was introduced into the Washington University at St. Louis (1872), and great interest was taken in the exhibit of work at the Centennial Exposition (1876). The course extended to the city schools of the United States as a subject added to the curriculum of established schools, generally in the fifth, sixth, seventh, and eighth grades, or manual schools were opened, the subjects including drawing, woodwork, sewing, clay modeling, cooking, paper folding, and iron working.

The St. Louis Manual Training School was opened in 1880 and was the first of over 150 such schools now in operation. They rank as secondary schools, as the same requirements for admission as into a classical or English high school are demanded. Modern languages, English, full courses in mathematics, and physical and chemical laboratory work receive more attention than in the sister high schools.

Commercial Education.—Education in the purely commercial and business courses is almost entirely conducted by private schools and business colleges. Many are equipped for elaborate courses in actual business, banking, and clearing house. Bookkeeping and stenography form a large part of the curriculum. The work in these is more essentially such as to give proficiency rather than any educational power.

In Washington, D. C., and in New York City, some of the high schools have made successful experiments in the line of substituting a commercial course for that of the high schools with a view to securing by its means as full and complete educational results as are attained by the courses of the regular high schools. In other cities commercial courses are attached to the regular high school course.

In universities, commercial education was first supplied by the University of Pennsylvania through an endowment of $100,000 by Mr. Joseph Wharton. In 1898, the universities of California and of Chicago established colleges of commerce in which substantial courses are supplied. The Amos Tuck School of Administration was established at Dartmouth College in 1900. This gives in a two years' course open to graduates and seniors a commercial and business course of a high order. A school of commerce was opened at the University of Illinois in 1902. Many state universities and other colleges have offered courses in commerce in fully organized departments.

A step in advance of this work is noticed in the generous endowment at Columbia University, at New York, of a school of journalism by Mr. Joseph Pulitzer.

Education of Women.—In the early schools of the United States, girls were not educated in the schools attended by boys. There were some private or dame schools at which the girls were educated; and the mothers were very largely responsible for such work at home. Some private schools for the education of girls were opened in the New England colony before 1800 and many famous academies date from that period.

In time girls were admitted to boys' schools in many localities, chiefly from reasons of economy where separate schools could not be supported. In the separate schools the curriculum provided for girls was not so advanced as that for boys; so that the coeducational arrangement was in this particular to the advantage of the girls. This plan, worked out in the East for reasons of economy, was adopted by the schools of the West from preference. There are to-day many states in which education of boys and girls is conducted separately, especially in the high schools.

Coeducation.—A number of women's colleges have affiliated with universities for men. In the West, coeducation was adopted very willingly, but the East and South have been more conservative, and in those parts of the country the matter has been compromised by the affiliation of high class colleges for women with those for men. The H. Sophie Newcomb Memorial College for women was opened in New Orleans in 1886 and affiliated with Tulane University. While the same trustees direct the two institu-

tions, their sustaining funds are kept separate, the president and faculty are distinct, and the buildings of the respective colleges are in different parts of the city. The college for women at Western Reserve University, Cleveland, Ohio, was opened in 1888 and has separate buildings near the University and a separate faculty. Degrees are conferred by the University. Women attend the University graduate department and are permitted to use some of the laboratories at the men's college. Barnard College, founded in 1889, is affiliated with Columbia University, is controlled by it, yet is supported separately. The standards of admission are the same for both institutions. Woman's College at Brown University, Providence, R. I., occupies Pembroke Hall, a separate building, shares the graduate courses, and has a faculty composed of members of the faculty from Brown University. Radcliffe College is affiliated with Harvard University. For many years it was known as Harvard Annex. It is governed and maintained separately from Harvard, but its faculty is made up of Harvard professors; it confers its own degrees up to A.M., and its graduates share the graduate courses at Harvard. Colby College at Waterville, Maine, has conducted classes for women separate from those for men since 1890, the year in which it discontinued the coeducation plan. The University of Chicago, in 1902, substituted separate classes with the same instructors during the first two years of its course, for the coeducational method that had previously obtained there.

Coeducation in Colleges.—The first fully coeducational college in the world was Oberlin College, then called Oberlin Collegiate Institute, at Oberlin, Ohio, to which men and women were admitted upon equal terms in 1833. Its example was followed in 1853 by Antioch College while under the presidency of Horace Mann. The following state universities are coeducational:—

Name.	Opened	Coeducational.
University of Alabama,	1831,	Since 1893.
University of Arizona,	1891,	From beginning.
University of Arkansas,	1872,	
University of California,	1870,	From beginning.
University of Colorado,	1877,	From beginning.
University of Florida,	1903,	From beginning.
University of Idaho,	1872,	From beginning.
University of Illinois,	1868,	Since 1870.
University of Indiana,	1820,	Since 1868.
University of Iowa,	1853,	From beginning.
University of Kansas,	1866,	From beginning.
University of Kentucky,		Since 1899.
University of Maine,	1868,	Since 1872.
University of Michigan,	1837,	Since 1870.
University of Minnesota,	1868,	From beginning.
University of Mississippi,	1848,	Since 1882.
University of Missouri,	1870,	From beginning.
University of Montana,	1895,	From beginning.
University of Nebraska,	1871,	From beginning.
University of Nevada,	1886,	From beginning.
University of New Mexico,	1892,	From beginning.
University of North Carolina,	1795,	Since 1896.
University of North Dakota,	1884,	Since 1884.
University of Ohio,	1873,	From beginning.
University of Oklahoma,	1892,	From beginning.
University of Oregon,	1876(?),	From beginning.
University of South Carolina,	1805,	Since 1894.
University of South Dakota,	1884,	From beginning.
University of Tennessee,	1794,	
University of Texas,	1883,	From beginning.
University of Utah.		
University of Washington,	1862,	From beginning.
University of West Virginia,	1868,	Since 1897.
University of Wisconsin,	1850,	Partial in 1860. Wholly since 1874.
University of Wyoming,	1887,	From beginning.

The state universities of Virginia, Georgia, and Louisiana do not yet admit women to their courses. Cornell University was the first coeducational institution in the East. It is to be observed that in many of the institutions opened to women there are more women students than men. To correct this, Northwestern University at Evansville, Ill., has limited the number of women students to the capacity of its dormiteries, and Leland Stanford, in California, has placed its limit at 500. The elective courses at coeducational institutions show to great advantage in supplying the instruction best adapted to women in a much better way than any prescribed courses could possibly do.

Many colleges in the East which do not sanction coeducational instruction in their undergraduate courses have freely opened the doors of their graduate schools to women. In fact, Princeton and Johns Hopkins are the only great universities of the East that do not so admit women. Such graduate work is being eagerly followed by a large number of women students, and so successfully is their work being accomplished that one tenth of the Doctorates of Philosophy have been conferred upon women within the last few years.

With the opening of the doors of the arts faculties to women, it was quite natural that they should seek admission to the schools of professional education. The greatest difficulty was experienced in the medical schools, and it was necessary in order to overcome this to establish medical colleges for women. The professions that appear to be most popular with women are: nursing, medicine, pharmacy, theology, law, and dentistry, in the order named, yet the proportion of women students in professional schools is markedly disproportionate to the number of women undergraduates and graduates in purely academical institutions.

Higher Education of Women.—Of the 128 colleges for women in the United States, of which there is a record, only two of those founded before 1850 have attained a standard of scholarship comparable to that of the colleges for men. These two are Mount Holyoke College (1893) at South Hadley, Mass., and Rockford College (1892), at Rockford, Ill. Others founded at a later period which have attained full college rank in scholarship are Elmira College, at Elmira, New York (1855), Vassar College at Poughkeepsie (1865), and Wells College at Aurora (1868): Mills College in California (1871); Smith College (1875) and Wellesley College (1875) in Massachusetts; Bryn Mawr College in Pennsylvania (1885); Woman's College at Baltimore (1888), and Randolph-Macon Woman's College at Lynchburg, Virginia (1893).

Colleges and Universities.—In colonial times there were nine colleges in the United States, and they were established as follows: Harvard University, 1636; William and Mary College, 1693; Yale College, 1701; Princeton University, 1748; University of Pennsylvania, 1751; Columbia University, 1754; Brown University, 1764; Rutgers College, 1766; and Dartmouth College, 1769. The total number in the United States now is 450.

State Universities.—These are state institutions supported by taxation and controlled by trustees or regents who are elected or appointed by the state executives. They are to be found

in nearly all of the states except those of New England and the Middle Atlantic group. In these state institutions there is an intimate connection or articulation of courses of study in the university with those of the institutions of secondary education at which prospective students are trained. The result of this uniformity is that a certificate of graduation from the recognized institutions of secondary education within the state carries with it the privileges of matriculation entrance at the state university without examination. Within recent years the tendency in higher education in the United States has been towards a sharper differentiation of the several phases of work in higher institutions, and also towards a plainer grouping of the institutions themselves. The college entrance examination board, though largely confined to the Middle Atlantic States, has exercised a profound influence towards securing a higher standard of work in secondary schools and greater uniformity in both standards and methods. The principle is of course rather at variance with that adopted by the state universities in many of the Middle States which admit upon certificate from secondary schools without examination, but it is strongly urged that the supervision as to standards and methods which such an examination necessarily carries with it must inevitably act as a powerful incentive and in some cases a corrective force in the work of the secondary schools.

The Association of American Universities has for its object the setting forth as clearly as possible the function of a university in investigation and research work. It aims by an interchange of ideas and a form of division of labor to develop individual effort on the part of the student in the useful fields of original thought and effort.

The Carnegie foundation for the promotion of teaching, established in 1905 through a munificent gift of $10,000,000 from Mr. Andrew Carnegie, places in the hands of a board of trustees selected from the higher educational interest of the country the work of superannuating aged or disabled teachers who have worn themselves out in service. This system of superannuation involves the expenditure of the interest of the sum alone. Already there is strong evidence that the work of this body operates to improve the spirit with which educational work is being conducted, and at the same time enlarges its scope. It has the effect of bringing to many who are engaged in educational work a sense of security and of protection in old age, and a freedom from the penalties of suffering and poverty which continued devotion to their work under past conditions has threatened.

A tendency in the work of higher education is the extension of the work in the several departments so as to embrace outside of the ordinary cultural subjects many new branches of learning along the lines of technical and professional instruction with a view to forming a closer union between the intellectual life and the sociological aspects of everyday life.

Still another tendency is towards the reduction of the number of years to be spent in the several university courses, and arguments are put forward supporting the theory that as the work of secondary schools not only increases in efficiency but extends in scope it is now far less necessary to spend four years in university work than under previous conditions. It is held that it is too great a devotion to education to expect a young man to spend eight or nine years in elementary work, four years in secondary education, four years in collegiate course, and three or four years in professional training. It is felt that this is more than the conditions of our society would justify, and more than the educational systems of other countries demand from their students.

Possibly the most remarkable feature in higher education is the munificent donations and endowments to its cause by private individuals within the last few years. Within a single year gifts amounting to over $30,000,000 have been derived by institutions for higher education, and this with the generous endowment of the state authorities has made possible an unprecedented extension of university education. Some idea of the generous support that is being extended in this direction in the United States is given by the statement that the total value of property possessed by colleges and universities exceeds $465,216,545. There are seven institutions with an endowment of over five millions each, and there are eight which have from two millions to five millions each.

Professional Education.—For nearly two centuries after the settlement of America efforts towards specialization in higher university work were few in number and unproductive in results. Of the great number of physicians and lawyers in these early days very few had received degrees obtained by a university course, but as the course of higher education advanced colleges and universities made provision to satisfy a growing demand for education of this nature.

Theological Schools.—Theology was the first of the professions to make a demand and to receive provision for specialized instruction in universities. The first theological school in America was founded by the Dutch Reformed Church in 1784. This school was conducted gratuitously by Dr. John H. Livingston of the Collegiate Church of New York City until 1810, when his work was transferred to Rutgers College. Prior to 1800 a theological institution had been established by the Roman Catholic denomination at Baltimore, and another by the United Presbyterians at Service, Penn. The number of such schools had increased to 130 in 1902.

Education in Law.—The first law school founded in the United States was established at Litchfield, Conn., in 1784, by Judge Tappan Reeve, where it continued until 1833. Efforts to establish law courses in connection with established universities were made in the eighteenth century, but all failed. The University of Pennsylvania made the attempt in 1791, and Columbia in 1797, but the first permanent law course was that of Harvard in 1817. This was a course which carried with it degree granting privileges. The University of Maryland had a law faculty in 1812. Yale College established its law department in 1824 and the first LL.D. degree was given by it in 1843. The University of Virginia has conducted continuously a law course since 1826.

Education in Medicine.—The University of Pennsylvania established the first chair of medi-

cine in 1765. Columbia College, then called King's College, of New York City, established a medical department in 1767. Harvard provided medical instruction in 1762. There are now 154 schools of medicine, of which 123 are allopathic, 21 homeopathic, and 10 eclectic.

Other Courses.—Professional schools preparing for dental, pharmaceutical, and veterinary life are numerous in America. There are 54 dental schools with over 7,000 students and more than 2,000 graduates, 63 pharmaceutical schools with 4,500 students and nearly 1,500 graduates, and 11 veterinary schools with 800 students and 200 graduates. Agricultural and mechanical colleges are also numerous. Some of these are courses in connection with the important universities and colleges of the country, others are attached to high grade secondary schools or to state normal schools. Their income is derived principally from endowments by Congress, and the 66 institutions provide for the instruction of over 21,000 pupils.

Normal Schools.—There are about 270 public and private normal schools known to the Bureau of Education. These do not include schools of pedagogy connected with universities, colleges, and high schools.

Newspapers and Periodicals.—There is little doubt that in the field of educational extension outside of organized institutions the first place must be given to the newspaper. Its influence is so far reaching, so general, and so subtle that it is hard to fully comprehend its power in shaping public opinion and in compiling public effort. The first regularly printed newspaper appeared in England in 1622, the first daily paper appeared in 1702. In the United States the first newspaper was issued at Boston in 1690. It was of quarto size, comprising four pages, one of which was blank, and the only copy known to be in existence is in the state paper office in London. The Boston *News Letter*, edited by the postmaster, John Campbell, appeared on the 24th of April, 1704. It was printed on a half sheet 8 inches by 12 inches and was issued weekly until 1776. It had no competitor in the colonies until 1719, when the Boston *Gazette* and the *American Weekly Mercury* of Philadelphia were issued. The *New England Courant* was established at Boston in 1721 by James Franklin, the brother of Benjamin, and it was here that the latter had his first experience in literary work. The *Weekly Rehearsal*, the *Weekly Post Boy* (1734), and the *Independent Advertiser* (1748) were all printed in Boston. Benjamin Franklin bought the *Pennsylvania Gazette* in 1729 and published it for 30 years. The *Rhode Island Gazette* was started in Newport in 1732, the *Maryland Gazette* at Annapolis in 1728, and the *South Carolina Gazette* at Charleston in 1731. These were all weekly papers, the first daily being the *Pennsylvania Packet*, afterward called the *Daily Advertiser*, established in Philadelphia in 1784.

While throughout the United States in 1750 there were only thirteen newspapers published, and nearly all of them in Massachusetts, there were, in 1903, 20,483 newspapers, of which New York published 1,953; Illinois, 1,688; Pennsylvania, 1,381; Ohio, 1,173; while Delaware and Wyoming published only 38 each, and Nevada, 30, the fewest in the country.

Magazines.—The first magazine published in America was the *American Magazine and Historical Chronicle* at Boston in 1743, which lasted more than three years and appeared monthly, its first number containing 50 pages. It was followed in 1858 by the *New England Magazine of Knowledge and of Pleasure* containing 60 pages, but it lasted only four months.

Between 1750 and 1775, six attempts to found a magazine failed in Philadelphia; but Robert Aiken in 1775 secured contributions from Thomas Paine to the *Pennsylvania Magazine* and was able to secure a foothold; but even with so popular and able a contributor was unable to carry the enterprise through the stormy days of the Revolution. The first magazine to appear in the nineteenth century was the *Portfolio*, published by Dennie in Philadelphia between the years 1804 and 1825.

In the year 1815 was issued at Boston what is to the present generation the first substantial contribution to magazine publication, *The North American Review*, which appeared as a quarterly. After its removal to New York it appeared as a monthly, after 1819. It was founded by Tudor, and among its brilliant editors are the names of Channing, Dana, Everett, Sparks, A. H. Everett, Palfrey, Bowen, Peabody, Lowell, Norton, Henry Adams, and A. T. Rice.

The *Atlantic Monthly*, issued at Boston in 1857, was first edited by James Russell Lowell. James T. Fields, William D. Howells, Thomas Bailey Aldrich, and Bliss Perry were his successors. Such men as Longfellow, Holmes, Emerson, Whittier, and nearly every man of prominence have contributed to the high standard of literary excellence which it has since maintained.

Harper's Magazine was established in 1850 and is noted as being the first of such publications to make illustrations a feature of its regular issues. *Scribner's Magazine* appeared in 1871, and upon the death of its first editor, Dr. J. G. Holland, in 1881, its name was changed to that of the *Century*, by which it is still known.

It is impossible to follow even by the mere mention of names the magazines which have since appeared in this country.

The field which the magazine occupies as an educational force is, probably, second only to that of the newspaper, for, apart from those whose table of contents presents nearly every feature in the field of culture, there is a great number of purely technical magazines which strive to keep pace with the application of science and scientific methods in the great field of commerce and economics. One of the oldest of these is the *American Journal of Science*, first issued in 1818 at New Haven, Conn. Later publications were the *American Naturalist* (1867), *Appleton's Popular Science Monthly* (1872), *Science* (1883), and the *Scientific American* (1864).

Learned Societies and Associations.—Generally speaking, learned societies and associations are voluntary in organization and administration, with the single possible exception in the United States of the National Academy of Science, established by act of Congress in 1865 with its home in Washington. It acts, to a certain degree, as a scientific advisory council of Congress. These organizations may be classified into six groups:—

First: General scientific societies, which include such as the American Academy of Arts and Science at Boston (1780), Connecticut Academy of Arts and Science (1799), the New York Academy of Science (1817), Brooklyn Academy of Arts and Science (1823), the Albany Institute (1824), the Maryland Academy of Science (1826), the Delaware County Institute of Science (1833), the Essex Institute at Salem (1848), and the American Society for the Advancement of Science, which is the largest and most influential society of this class in the United States.

Second: The historical societies, of which the Massachusetts Historical Association is the oldest and the forerunner of a list of about 50 similar institutions throughout the country, whose object is the preservation of historical records and the promotion of historical research in their respective localities. Notable amongst them is the Historical Society of New York (1885) and the American Jewish Historical Society (1902). One society in this class, the American Historical Association, which originated as late as 1884, the only national historical society in the country, has its headquarters at Washington. Allied to these are the American Antiquarian Society of Worcester, Mass. (1812), the American Geographical Society of New York (1852), and the National Geographic Society of Washington, D. C.

Third: Societies concerned with special branches of science, biology, and natural history, the oldest of which is the Academy of Natural Science of Philadelphia (1812).

Fourth: Learned societies which have for their object the study of a single special subject. These are numerous, and in addition to those following individual scientific subjects, include a great part of literary societies.

Fifth: Societies and associations relating to professions, such as medicine, dentistry, law, engineering, fine arts, and architecture.

Sixth: Teachers associations. The foremost among these is the great national society of teachers known as the National Educational Society, which began under another name in 1857 and was organized in Philadelphia, but took its present name in 1870 at Cleveland. In its earlier days all matters relating to education in all of its departments were discussed at meetings of the entire association; but upon its organization under its new name it was divided into several departments, which now number 18, and subjects pertaining to these were discussed simultaneously in each department. It is composed of annual members, who pay a fee of $2 each; of life members, $20; of life directors, $100; and perpetual directorships, with privileges enjoyed by boards of education on payment of $100. Its meetings are held annually and its constitution is splendidly adapted to the administration of so large an organization comprising so many different interests.

One of the most notable features regarding this society was the appointment at Saratoga in 1892 of the special Committee of Ten to consider and to pass upon the course of study in secondary schools. It appointed nine subcommittees of experts, each of ten members, the same being one subcommittee for each branch of study in the secondary school. Their voluminous report of 250 pages upon the subject has proved a valuable contribution to the organization of secondary schools.

A Committee of Fifteen was appointed in 1893 to consider elementary education, and its work was equally valuable. In 1895 a Committee of Twelve on Rural Schools, a Committee on College Entrance Requirements, and a Committee on Normal Schools were appointed, and in 1898 a Committee on the Relations of Public Libraries to Public Schools; these committees contributed reports at the Los Angeles meeting of 1899, which reflect the expert opinion of the foremost educators of the country upon these subjects.

The meetings of the association are attended by over 30,000 educators, and its report upon educational matters is considered to be the best record of educational progress and of the science and art of pedagogy.

Similar work, though in a smaller field, is being done in the Southern States by the Southern Educational Association, organized in 1890.

Libraries.—The free public library, supported by taxation and used by the people, contributes largely to both culture and scholarship among the masses. The great value lies in its power to continue the educative processes of those who for economic reasons cannot long enjoy school advantages.

Collections of books, called libraries, and accessible to only a few, have existed in nearly all countries from a very early date, either as private property or as part of a college or university. But the institution known as a free circulating library is a product of the last half of the nineteenth century. The claim is made, and with evident justice, that the first free public library in the United States, if not in the world, was that of Peterborough, New Hampshire, for the support of which the town in 1833 voted the proceeds from the general taxation of banks. This money was used to purchase books to be circulated free among the people of that town. Libraries were established for the use of the people in connection with the district schools in New York state in 1835; but these were not successful on account of the small-sized units for which they were provided. But the idea led to the passing of laws to establish free public libraries in towns. The first law of this kind was passed by New Hampshire in 1849. Similar permissive laws have been passed in nearly all of the states; and many special grants of money have furthered the purpose. In consequence of this attitude many libraries have been established in towns and their efficiency has been greatly promoted.

One of the greatest advances in library extension has been the establishment of open shelves accessible to all patrons. The difficulty of getting books to the people has been largely overcome by the establishment of traveling libraries, branch libraries, delivery stations, and deposit stations. Much has been done for library extension by the gifts from private citizens. Chief among American benefactors is Mr. Andrew Carnegie, whose great work may be summed up in the statement that he has by his gifts endowed over 1,500 libraries with more than $40,000,000.

Education of the Defective Classes.—The education of the deaf and dumb was first system-

atized in Leipzig in 1788, and in London in 1792. The efforts made before this by Abbé de l'Epée in Paris, and by Thomas Braidwood in Edinburgh in 1760, were unorganized and more humanitarian than systematic. America's first efforts in this direction were made by Dr. Gallaudet of Hartford, Conn. In the systems of education of these unfortunates, methods are adopted to meet the two conditions which are recognized. There are some deaf persons who are unable to speak because of an abnormal structure of the vocal organs; and these must be taught to read and write by codes of signs and gestures, more or less fixed as to meaning. Not only are the letters of the alphabet communicated by fixed signs in which one or both hands are employed, but a whole word or a sentence may be expressed by a single sign or gesture. It follows as a psychological fact that the teaching of reading to a deaf mute most easily follows upon the ability to write.

The second class includes those who are born deaf and whose vocal organs are well formed. These are unable to talk because they have never heard the sounds expressed. Such may be taught to speak by encouraging them to utter sounds and by directing their efforts to properly combine the elementary sounds. Both of these classes may be taught what is known as "lip language," wherein they learn to know what words are intended by observing the movements of the visible organs of speech.

In this connection may be mentioned the system of visible speech originated by the late Professor Alexander Melville Bell, which was intended to display by graphic diagrams the relative positions of the several vocal organs concerned in the pronunciation of the several vowel sounds and the stoppage of sound, as indicated by the consonants.

The census returns for the United States for 1900 do not give separate reports for the deaf and dumb, but includes them in a class of defectives with the blind. They report, in 1904, 115 institutions for these unfortunates, of which 66 were public, 34 private, and 15 connected with church organizations. The inmates of these institutions numbered 7,923 males and 6,808 females.

A recent movement has caused the establishment of public day schools for the deaf and dumb. In this work Chicago leads with 12 such schools. The Horace Mann School at Boston is the only day school yet established east of the Ohio. The Gallaudet College at Washington was established, under another name, in 1857, and is one of the chief training schools for teachers.

The Blind.—Paris led in supplying a public school for the blind in 1785; in 1791 a similar school was established at Liverpool, England; and in 1799 one was opened in London. It was not until 1831 that the first school for the blind was opened in the United States in New York, while, through the efforts of Dr. J. D. Fischer, Dr. Samuel G. Howe was studying European methods preparatory to opening a school in Boston. The number of blind pupils in 1901 was 4,199 in 39 schools, nearly all boarding schools supported by public taxes. A prominent feature in the courses is the teaching of such handicraft as will fit the afflicted students to earn a livelihood after graduation. Music and the kindergarten are most useful parts of the educational system in schools for the blind. Pupils are taught to read by means of embossed or raised letters perceived by the sense of touch. Victor Haüy of Paris discovered this principle and published the first book of this kind in 1785. Dr. Howe's letters were the ordinary lower case letters used in printing. Mr. Wait designed the New York Point, in which a series of dots, systematically arranged, renders reading easy without special training. The American Braille is a modification of the French Braille system. Typewriters have been invented to write in the characters used for blind persons. There are over 100,000 books for the blind in school libraries, for the printing of which one establishment has been subsidized by Congress.

Feeble Minded.—The first attempt to improve the mental condition of the class of mentally deficient known as idiots was made in the experimental school in Boston by Dr. S. G. Howe in 1848. Private enterprise founded a school in the same year at Barre, Mass. An institution was opened by the state in Syracuse, N. Y., in 1851; at Media, Pennsylvania, in 1859; at Columbus, Ohio, in 1857; at Frankfort, Kentucky, in 1880; and at Jacksonville, Illinois, in 1865.

In the 17 public and 10 private institutions in the United States in 1890, there were only about 12,000 pupils of the 95,000 mentally deficient known in this country. Success in teaching depends upon the degree of mental deficiency from which the individual suffers. While some attain to a considerable degree of academic education, others can, at the best, only be helped to a certain stage of usefulness; and for still another class merely happy and comfortable lives can be assured. Many are capable of learning a trade or of assisting at a handicraft by means of which some schools are in part self-supporting.

Summer Schools.—The establishment of summer schools as an accessory to education has been brought about by a desire on the part of the people to use their leisure time to the best advantage. The second cause is the long summer vacation, and still a third is the increasing interest in the study of botany. Educational machinery sought to adapt itself to meet these conditions and the result has been five types of summer schools: first, those which teach only a single branch of knowledge; second, schools of art; third, normal and other schools of method, which may be classed broadly as schools of pedagogy; fourth, schools of a general character, where nearly all the subjects of the school curriculum are taken up and studied, and in connection with which it is sought to combine recreation and rest; fifth, sessions held in the colleges and universities during the summer.

As to administration and conduct, all of these schools fall under one of three classes: (*a*) private schools, where the cost is borne wholly by the students, or by endowments made to meet the expenses; (*b*) those conducted by colleges and universities; and (*c*) those in which the expense is borne by the state.

The classes of people who attend these summer schools are those who are desirous of supplementing an imperfect education or of following out one or more subjects, with a view to general culture; undergraduate students seeking an academic degree or carrying on a special line of

work for which the locality affords unusual advantages, and teachers who desire to devote their leisure time to such improvements as will lead to promotion.

Schools at which a single subject is taught may be biological in their nature, or philosophical, language schools, or those for library science. Biological schools rapidly increased in summer work between the years 1890 and 1896. They received their first impetus in 1869, when expeditions composed of professors and advanced students from Harvard made trips to Colorado and elsewhere for investigation; when groups of students under the conduct of Prof. O. C. Marsh, from Yale, carried on valuable work for museum collections at New Haven; when Prof. James Orton of Vassar College conducted classes on trips to points of geographical interest, up to a culmination of the system, when Prof. Louis Agassiz and Prof. N. S. Shaler established the Anderson School on Penikese Island, which is to be regarded as the first American summer school. This opened in 1873 and was attended by 43 students. It was in this environment that Professor Agassiz was able to demonstrate his remarkably practical methods of teaching natural science at a seaside laboratory. This school was endowed and a laboratory and dormitory were built through the generosity of Mr. John Anderson of New York City. The faculty included the names of many eminent biologists, but the school enjoyed for one session only the services of the great naturalist and the visible inspiration of his practical methods. Before the next session of the school opened, his death occurred and, after futile attempts to continue the enterprise, the project was abandoned.

The Peabody Academy of Science was established at Salem in 1879, where it continued for five sessions. Johns Hopkins University continued the experiment at several places after 1878, but was obliged to discontinue its efforts through lack of financial support. At Annisquam, Mass., a laboratory supported by the Boston Society of Natural History, and in which the Women's Educational Association was interested, received the services of trained investigators and advanced students in outdoor laboratory work for a period of six years, beginning 1881, for which, in 1888, the Marine Biological Laboratory was established at Wood's Holl, Mass. The equipment in this laboratory is adequate and serviceable. The instruction is both advanced and elementary, and, while the course of instruction is planned to cover only six weeks, students may, under certain circumstances pursue their work for a period of three months. Many of the advantages which investigators may enjoy are supplied free of charge. Through the instrumentality of this institution the cause of biological instruction and investigation in the United States has been greatly advanced. The Brooklyn Institute biological laboratory at Coldspring Harbor (1880) is one of the best in existence. Its course covers elementary zoölogy and botany, comparative embryology and bacteriology, with every facility for original investigation and research.

Other notable schools are at South Harpswell, Me., the Blue Hills of Milton, Mass., Kingston, R. I., and Winona Lake, Ind. (1890), under the auspices of the University of Indiana, at a biological station on the Illinois River under the auspices of the University of Illinois, at Big Forks (1899) under the auspices of the State University of Montana, and the Hopkins Seaside Laboratory on the Pacific coast (1892).

One of the earliest summer schools was the Concord summer school of philosophy, established at Concord, Mass., in 1879 under the supervision of Mr. Amos Bronson Alcott. With him were associated a remarkable assemblage of eminent American scholars, including Ralph Waldo Emerson, Dr. W. T. Harris, Thomas Wentworth Higginson, Mrs. Julia Ward Howe, Noah Porter, Benjamin Pierce, S. H. Emery, F. B. Sanborn, Thomas Davidson, and others. The work conducted here during ten sessions of its existence, and terminated at the death of Mr. Alcott, was an example of the highest type of instruction given without a university. Mr. Thomas Davidson continued the work in a similar school at Farmington, Conn., and later at Glenmore in the Adirondacks, where he broadened his idea and included in his work the entire field of cultural sciences. In 1892 the most prominent lecturers were Hon. W. T. Harris, Thomas Davidson, Prof. Josiah Royce, John Dewey, and J. Clark Murray.

The School of Applied Ethics, which Prof. Felix Adler of New York organized and directed at Plymouth, Mass., in 1892, was designed to promote historical and scientific study in all branches of learning relating to human conduct. The work was conducted for three sessions and at its last, in 1895, lectures were given by President Wright of Clark College, President Wilson of Princeton, President Wheeler of California, and President Andrews of Nebraska, though these at that time were not all yet occupying those positions. Other lecturers were Professors Jackson, Burgess, Smith, and Giddings of Columbia; Jenks of Cornell and Taussig of Harvard, with Mr. Albert Shaw of the *Review of Reviews*. The sessions were eminently successful and excited marked interest.

Between the years 1896 and 1901, the Monsalvat School of Comparative Religions made a special study of the history of religious beliefs, both Oriental and Occidental, at Eliot, Me. The gathering of religious students at the summer conference, first organized at Northfield, Mass., in 1886 by D. L. Moody, comprised 250 students from 225 institutions, who devoted their time to a study of the Bible and to methods of evangelical work. From this sprang the Student Volunteer Foreign Missions movement. Similar work has been done at Lake Geneva (1888) and Knoxville, Tenn. (1892).

In language work the most notable schools were the Sauveur Summer College of Language at Plymouth, N. H. (1876), at Amherst, Mass. (1877-1883), and in conjunction with the Amherst College summer school in 1895. The Berlitz held sessions at Asbury Park, N. J., for four years beginning with 1877.

In library science, summer instruction has been offered by the Amherst College summer school since 1891, by Mr. W. I. Fletcher, librarian, and at the State University of Wisconsin summer school since 1895. But exclusive instruction in library science was first introduced in 1896 at Albany, N. Y., in connection with the New York state library, under the direction of

Mr. Melvil Dewey, where a six weeks' course, comprising cataloguing, classification of books, conduct of reference and loan departments, bookbinding, and library economy, are the topics for consideration. The Ohio State University, Chautauqua Lake, and the University of Ohio and the Indiana public library commission at Indianapolis have included library science in their summer courses.

The leading schools of art conducting summer sessions have been the Lexington, Mass., normal music school (1883); the School of Expression, beginning at Martha's Vineyard (1886); the Boston School of Oratory (1890) and the Monroe College of Oratory, now a part of the Emerson School of Oratory, were prominent among the summer schools of 1900.

In pedagogy the Martha's Vineyard summer institute, which ranks second only to the great assemblies at Chautauqua (1878), originated with Col. Homer B. Sprague of the girls' high school in Boston, who was followed by Dr. W. J. Rolfe and Dr. W. A. Mowry; the National summer school of methods, Saratoga, N. Y. (1885); and the Virginia summer school of methods at Bedford, Va. (1888), were pioneers in this important field of educational work. It is to be noted in this connection that the first teachers' institute was held during two weeks in 1843, by Supt. J. S. Denman, for Tompkins County, New York, and much of its success was due to the earnest support of Horace Mann.

Among the summer schools having a general course, all are eclipsed by that most elaborate organization of summer school work which is offered by Chautauqua, which originated in a religious camp meeting of the summer of 1874 at Chautauqua Lake, N. Y., after passing through the stage known as the Sunday-school Assembly. Its summer meetings have continued in the months of July and August in unbroken succession since that time, though the Chautauqua Literary and Scientific Circle was not organized until 1878, the summer college in 1879, and the correspondence college in 1885. The Chautauqua system, so called, comprises a series of courses designed for general culture, rather than for special training, and the scope of its work has passed through stages of evolution until it has now attained remarkable proportions of comprehensiveness and utility, comprised in groups of 12 divisions embracing hundreds of topics. For many years the head of the movement was President William R. Harper of the University of Chicago, and for some time its chancellor has been Bishop John H. Vincent. Its faculty and lecturers have included nearly every person of eminence in the respective departments, both at home and abroad. Degrees are conferred and diplomas given to those who follow courses. *The Chautauquan* is the chief instrument of the organization, is published monthly, and supplies a part of the matter prescribed in the several courses. Branch assemblies are held all over the country, which follow as closely as possible the plan of the general meeting. Among these is the Jewish Chautauqua, at Atlantic City, N. J., where, in addition to the regular Chautauqua courses, Jewish literature and history receive especial attention.

Summer work is followed by nearly all of the leading colleges and universities, and in many of them the duration of the summer sessions is so long and the courses so comprehensive that the work of the university is practically continuous throughout the entire year, which is thus divided into four terms instead of three, though attendance upon summer sessions is by no means compulsory. Lectures are given by members of the regular faculty and the members are almost wholly composed of undergraduates, though interesting features are introduced in lectures upon general subjects which attract others to the sessions.

Correspondence Schools.—This educational feature originated in the Chautauqua movement, when, late in 1879, upon the close of the session of the school of languages, some members induced their instructor to continue the course with them through the mails. After two or three years of slight success, the system was perfected, a director of correspondence was appointed, and the success of the enterprise was assured. By 1883 correspondence work was made the basis of instruction in the Chautauqua University. It is now maintained by colleges and universities as a phase of their regular instructional work, but it is most familiar as conducted by correspondence schools which supply no courses in residence at the institutions. Especially are courses of correspondence emphasized at the University of Chicago, where the method received complete organization at the hands of President Harper, who so well knew its working in connection with the Chautauqua movement, and no fewer than 25 separate courses directed by 103 instructors were in force in 1902, and these were participated in by 1,500 students. This method is also in use in the Armour Institute in Chicago, the Pennsylvania State College, Baylor University at Waco, Texas, and the state normal school at Willimantic, Conn.

Of the second class of correspondence schools or those who rely wholly upon instruction by correspondence, there were, in 1900, 25 such organizations in operation in the United States and these were distributed throughout the country. Despite much adverse criticism by college-bred educators who deplore the absence of systematic study at an institution, they must be recognized as important educational factors and especially in the work of educational extension.

Negro Education.—The teaching of negroes in the South before the Civil War was forbidden by law whether the negroes were slave or free, and serious penalties might be inflicted upon both teacher and pupil in cases of infraction. While no prohibitive laws were enforced in the North, there were no separate schools or special provision made for them, and when they were excluded from schools by public sentiment they enjoyed no educational advantages even there. The few negroes who were able to read and write had acquired their learning in the so-called clandestine schools or through the kindness of some member of their master's family. Yet it is hardly too broad a statement to make that before the Civil War in America the negroes were uneducated. Upon their emancipation social and economic considerations required that they should enjoy educational advantages. The first important steps in this direction were taken by the Freedman's Bureau which Congress established in 1865. The first commissioner of

this Bureau, General O. O. Howard, began an educational work of great magnitude, and so successful were these efforts that at the end of the five years' life of the Bureau 4,239 schools for colored pupils in the South had been established and had an enrollment of 247,333 pupils. Schools at first were elementary, but, as the work progressed and the pupils advanced, higher instruction was provided for them, first by intermediate or grammar schools and then by high and normal schools. Funds were contributed by the freedmen, the Federal Government, and by private bequests. The most important of these latter were the Peabody Fund, the Slater Fund, and the Daniel Hand Educational Fund for colored people.

Since the Civil War it is estimated that the South has expended upon negro education fully $121,000,000 and has conducted its work through separate schools. The teachers in most of these schools are colored, and provision has been made for the teachers' instruction in several normal schools, the best known of which is the Hampton Normal and Industrial Institute at Hampton, Va. Another, and an offspring from the Hampton Institute, is that at Tuskegee, Ala., which, through its president, Booker T. Washington, has attained considerable fame. It opened in 1881 with one teacher and 30 students. At the present time its faculty of 150 colored instructors and student enrollment of 1,500 testify to a most remarkable educational advance. It is said in this connection that Booker T. Washington has done more for negro education than has any other man of his race. Higher education is supplied to the negro race by a very great number of colleges and universities distributed throughout the South. It is not unusual to find colored students in the best universities of the South taking equal rank with white students in the several courses. Harvard, Yale, Cornell, Columbia, Pennsylvania, and other institutions of rank in the North and East have all graduated colored students with honors, and some of these have been elected to Phi Beta Kappa.

In this higher education it has been noticed that comparatively few of the students pursue professional courses. This is through no disinclination on their part, but rather by reason of the social antipathy of the white race, who do not care to employ them in such capacities, and at the same time through a lack of confidence among their fellows, who seem to feel that professional services from white people are more efficient.

Indian Education.—From the earliest settlement of America abundant provision was made for the education of the Indian, and it is to be noted that the first school planned, the Henrico School in Virginia in 1618, was primarily intended for the instruction of the Indian and that the plan was not consummated was entirely the fault of the Indian. The sufferings and hardships of zealous settlers, such as Father Marquette, John Eliot, and others, testify that the early colonial efforts for the improvement of the Indians were sincere, and in many parts of the country a very great deal of missionary work was attempted through the establishment of schools. Since 1819 Congress has made frequent and liberal contributions to the support of Indian schools, especially in the direction of industrial schools, whose growth has been both steady and rapid since 1823. At the present day the Federal Government completely controls the Indian schools and upwards of $3,000,000 a year is expended in appropriations upon them. Indian schools are divided into five classes: (1) non-reservation boarding schools; (2) reservation boarding schools; (3) day schools; (4) contract schools; and (5) private mission schools. Of the non-reservation boarding schools those at Carlisle, Pa., Chilocco, Okla., Genoa, Neb., Albuquerque, N. Mex., the Haskell Institute at Lawrence, Kan., Grand Junction, Colo., Santa Fé, N. Mex., Phœnix, Ariz., Riverside, Cal., and Fort Shaw, Mont., are the best known. At nearly all of these industrial work, at some agricultural work, and at many a normal course are distinctive features. At the same time provision is made for instruction in arithmetic, geometry, geography, history, and civil government, to supplement instruction already taken in these branches at some of the reservation schools.

The reservation boarding schools are to be found on nearly every reservation, many of which have two or three such. A superintendent aided by a corps of instructors and sustained by the necessary domestic assistants is in charge of each school. Over half of these schools have kindergarten departments. The pupils are taught to read simple English, to perform the simple arithmetical calculations, and are given elementary instruction in geography, history, laws of hygiene, and the importance of personal cleanliness, in addition to well-balanced courses in industrial subjects. The attendance at this class of schools in 1902 was 11,506.

The Day School.—This type is probably the same as that of the ungraded country school in the white districts. The teachers are usually men and are intended to supply Indian camps and communities and are to be found upon reservations. Between the two sessions of the day a lunch is supplied to the pupils at government expense. There are 134 day schools in operation, with an attendance of 3,223 pupils.

Contract Schools.—This is merely the principle of placing Indian pupils in white schools in localities where their numbers do not warrant the establishment of separate Indian schools. In this class are considered the 120 Indian pupils attending the Hampton Industrial Institute.

Mission Schools.—This large class is the only one which does not receive its aid wholly from the Federal Government, and in consequence of this the government does not assume the responsibility of their conduct. These mission schools are most numerous on the reservations, as that position affords the greatest facilities for their religious work. A very great majority of the 49 missionary schools is supported by Roman Catholics. Probably the only difference between these missionary schools and the government schools on the reservation lies in the religious training given at the missions. In Oklahoma the schools of the five civilized nations are not under government control, but are supported by the people themselves. The Cherokee nation also supports its own schools with a measure of co-operation from the United States supervisor. They have 140 day schools, besides academies, and the total enrollment is 5,383.

ALABAMA.—The Superintendent of Public Instruction has general supervision over the public schools. The public elementary schools in 1906 had 5,150 teachers, and 394,897 enrolled pupils. The public high schools had 250 teachers and 5,103 pupils. The five public normal schools in 1905 had 56 teachers and 1,286 pupils, while six private normal schools had 33 teachers and 580 pupils. For superior and professional education there are various institutions, the more important being:—

Begun.	Institutions.	Professors.	Students.
1831	University of Alabama (State)	44	573
1830	Spring Hill College (R.C.)	28	231
1842	Howard College, East Lake (Bapt.)	10	200
1856	Southern Univ., Greensboro (M. E.So.)	12	180
1892	St. Bernard College (R.C.)	28	134

Other important schools are the Polytechnic Institution with 40 professors and about 675 students; the Tuskegee Institute, under Booker T. Washington, with 166 instructors and 1,621 students. In the State there are 3 schools of theology, 1 of law, 2 of medicine, 1 of dentistry, and 2 of pharmacy. There are also 3 commercial schools and 5 schools for manual and industrial training. There are special schools or homes for the deaf, dumb, blind, and insane.

ARIZONA.—School attendance is compulsory for 12 weeks (6 consecutive) annually for children from 8 to 14 years of age. Instruction is free for children from 6 to 21 years of age, who in 1907 numbered 33,167 The enrolled pupils in 1907 numbered 24,962 in public schools, 398 in high schools, 1,302 in private schools, while 6,505 attended no school. The average attendance in public schools was 15,352, in high schools 315. There were 293 school districts, 393 primary schools, and 198 grammar schools. The male teachers numbered 108, the female 518. Receipts from all sources (for public school purposes), $697,762; expenditure for education, $701,102 (for public schools, $620,254). The University of Arizona, founded in 1891, had 35 professors and 237 students in 1906. There is a Territorial Agricultural School.

ARKANSAS.—The State has a full public school system under which separate schools are provided for white and black children. The Governor, Secretary of State, and Superintendent of Education constitute a State Board of Education. There are no county superintendents or boards, but the county judge appoints a county examiner. There are school districts, each of which has three directors elected by the people. Cities and incorporated towns are, or may be, organized as special districts, each with six directors, who elect a superintendent and may establish high schools. No child under 14 can be employed in a manufacturing establishment unless he attends school 12 weeks each year and can read and write English.

In 1906 the public elementary schools had 7,417 teachers and 341,131 enrolled pupils; public high schools had 164 teachers and 4,015 pupils; 2 public normal schools had 6 teachers and 162 students, and 2 private normal schools had 9 teachers and 130 students in 1905. The University of Arkansas, founded in 1871, had, in 1908, 75 professors and 1,800 students. There are a large Baptist college, a Presbyterian college, and 2 Methodist Episcopal colleges.

CALIFORNIA.—The organization of the public school system includes a State Board of Education and county boards, city boards in the incorporated municipalities, and boards of trustees in the local districts, of which there are more than 3,000. There is a State Superintendent of Public Instruction and a county superintendent in each county. Members of the county boards are appointed, and those of the district boards elected; members of city boards are in some instances appointed and in others elected. Education is compulsory for children from 5 to 17 years of age for at least five months in the year.

In the State elementary schools there were, in 1906, 297,102 enrolled pupils, with 8,181 teachers. The public high schools had 1,038 teachers and 25,912 pupils; five State normal schools had 101 teachers and 1,614 students in 1905. The State also maintains three polytechnic and other special schools.

There are in California two great universities—the State University, or University of California, and Leland Stanford Junior University. The former was established in 1860 and has grown steadily until it has become one of the great universities of the United States, or of the world. In 1908 it had 389 professors and 3,201 students. The Lick Astronomical Department is established at Mount Hamilton. Leland Stanford Junior University at Palo Alto was chartered in 1885, and opened its doors to students in 1891. An endowment, now amounting to $20,000,000 in interest-bearing funds, besides large landed estates, was given by Mr. and Mrs. Leland Stanford. In 1908 it had 140 professors and 1,751 students. There are altogether 13 universities and colleges in the State, with a total teaching staff of 855, and students numbering 8,246.

COLORADO.—The public schools are under the general supervision of the Superintendent of Public Instruction. In 1906 the public elementary schools had 4,197 teachers with 135,066 enrolled pupils; the public high schools had 375 teachers and 8,941 pupils. Public school teachers are trained at a public normal school, which in 1905 had 29 teachers and 453 pupils; there was also a private normal school with 6 teachers and 37 pupils. For superior education there are several colleges. Colorado College, founded in 1874 at Colorado Springs, has 50 professors and 597 students; the University of Colorado, founded in 1876 at Boulder, has 133 professors and 1,150 students. The University of Denver, founded by Territorial charter in 1864, has departments for the liberal arts, medicine, law, music, etc., while the Chamberlin Observatory in University Park stands at an altitude of 5,280 feet above sea-level. The University in 1908 had 170 professors and teachers and more than 1,324 students. State institutions are an Agricultural College and a School of Mines.

CONNECTICUT.—Elementary instruction is free for all children between the ages of 4 and 16 years, and compulsory for all children between the ages of 7 and 16 years. In 1906 the public elementary schools had 4,263 teachers with 163,482 enrolled pupils. There were also 77 public high schools with 466 teachers and 10,491 pupils, and 205 private schools with 1,255 teachers and 39,030 pupils. The four normal schools had 129 teachers and 640 pupils. Instruction in agriculture and the mechanic arts is provided at the Connecticut Agricultural College located at Storrs, whose work is supplemented by the Storrs Agricultural Experiment Station, and the Connecticut Agricultural Experiment Station located at New Haven. Higher instruction is provided at Yale University, Wesleyan University, and Trinity College. Yale University, New Haven, founded in 1701, had, in 1908, in all departments, 400 professors and teachers and 3,450 students. Wesleyan University, Middletown, founded in 1831, had, in 1908, 34 professors and teachers, and 338 students, including 31 women. Trinity College, Hartford, founded in 1823, had, in 1908, 23 professors and teachers, and 217 students.

DELAWARE.—The State has free public schools, and compulsory school attendance, separate schools being provided for white and colored children. In 1906, the public elementary schools had 835 teachers and 35,353 enrolled pupils. The public high schools had 62 teachers and 1,542 pupils. The State has normal schools, agricultural and mechanical colleges, and at Newark, Delaware College, founded in 1833, having, in 1908, 24 professors and 212 students.

DISTRICT OF COLUMBIA.—The public schools of the District in 1907 had 1,058 white teachers and 36,001 white pupils, and 577 negro teachers and 18,102 negro pupils. There were 7 public high schools with 229 teachers and 4,381 pupils; and 24 private schools with 1,500 pupils. For the instruction of teachers there were 2 public normal schools.

Superior education is given in Georgetown College, an institution under the management of the Jesuit order, founded in 1795; it has 149 professors and about 855 pupils; the George Washington University, nonsectarian, founded in 1821, has 215 professors and 1,258 students; the Howard University, principally engaged in the higher education of negroes, was founded in 1867, and has 100 professors and 1,000 pupils; the Catholic University, a postgraduate institution, was founded in 1884, and has 32 professors and about 224 pupils.

FLORIDA.—Educational matters are controlled by a State Board of Education. Attendance at school is not compulsory. There are no provisions as to religious instruction in public schools. Separate schools are provided for white and colored children.

In 1906 the public elementary schools had 3,130 teachers and 127,607 enrolled pupils. In public high schools there were 159 teachers and 2,858 pupils. Two public normal schools had 30 teachers and 283 students, while 2 private normal schools had 4 teachers and 67 students in 1905. The State provides higher education in a University of the State of Florida at Gainesville with 25 professors and 225 students, and a

college at Tallahassee with 19 professors and 317 students. There is also a Baptist university with 49 professors and 520 students, and a non-sectarian college at Winter Park with 23 professors and 200 students.

GEORGIA.—No law making education compulsory has been passed. At the head of the State school system is a State School Commissioner elected by the people for two years. There is a county school supervisor in each county. In 1906 the public elementary schools had 491,957 enrolled pupils and 10,041 teachers, while the public high schools had 7,128 pupils and 319 teachers. Five public normal schools had 61 teachers and 746 pupils in 1905.

For higher education the more important institutions in the State are as follows:—

Begun.	Institutions.	Professors.	Students.
1800	University of Georgia, Athens (State)	199	3,375
1867	Atlanta Baptist College	20	340
1837	Mercer Univ., Macon (Bapt.)	33	474
1836	Emory Coll., Oxford (M.E.So.)	16	267
1870	Clark Univ., S. Atlanta (M.E.)	25	532
1883	Young Harris College (M.E.So.)	9	415

The expenditure on the public schools for 1904 amounted to $2,240,247.

IDAHO.—For supervision of the public schools there is a Board of Education, of which the Superintendent of Public Instruction is president. In 1906 the public elementary schools had 1,677 teachers and 61,151 enrolled pupils, while the public high schools had 1,575 pupils and 76 teachers. The two public normal schools had 21 teachers and 239 pupils in 1905. Superior instruction is given in the State Academy of Idaho and the State University of Idaho, founded in 1889, which had 46 professors and 400 students in 1908. The State has an industrial training school, and a school for the deaf and blind. There are also 5 sectarian colleges or schools to which, however, pupils are admitted without respect to their religious belief.

ILLINOIS.—In Illinois education is free and compulsory for children between 7 and 14 years of age. General supervision of the public schools is intrusted to the Superintendent of Public Instruction. For the local administration of school finance trustees are elected in the school townships. For school management the townships are divided into school districts, each with an elective board. There are county superintendents who examine accounts, inspect schools, and grant certificates to teachers. In 1906 the public elementary schools had 26,097 teachers, and 936,175 enrolled pupils. The high schools had 2,031 teachers and 50,861 pupils. Six public normal schools had 129 teachers and 2,632 students in 1905, while four private normal schools had 17 teachers and 365 students. Superior instruction is given in many universities and colleges within the State. The University of Illinois at Urbana was founded in 1867, and in 1908 had 430 professors and teachers with 4,600 students. Other institutions are:—

Begun.	Institutions.	Professors.	Students.
1892	University of Chicago (Bapt.)	351	5,038
1855	Northwestern Univ., Evanston (M.E.)	358	3,997
1850	Ill. Wesleyan Univ., Bloomington (M.E.)	36	1,097
1868	St. Viateur's Coll., Bourbonnais (R.C.)	36	298
1869	St. Ignatius Coll., Chicago (R.C.)	34	573
1903	James Millikin Univ., Decatur (C. Presb.)	50	937
1837	Knox College, Galesburg (Non-sect.)	33	607
1852	Lombard Coll., Galesburg (Univ.)	14	126
1892	Greenville College (F.M.)	13	263
1858	Lake Forest College (Presb.)	19	190
1828	McKendree Coll., Lebanon (M.E.)	11	226
1866	Lincoln College (C. Presb.)	15	334
1856	Monmouth Coll. (U. Presb.)	24	454
1861	Northwestern Coll., Naperville (Ev. Assn.)	22	483
1860	Augustana College, Rock Island (Luth.)	38	462
1860	St. Francis Solanus Coll., Quincy (R.C.)	17	193
1849	Rockford College (for women) (Non-sect.)	30	211

INDIANA.—Educational administration is carried on under supervision of a State Board of Education and a State Superintendent. The local school authorities are the county superintendent, the trustees of the townships, the school trustees of towns and cities of the county, and the county board. School attendance during the full term is compulsory from 7 to 14 years of age. In 1906 the public elementary schools had 14,354 teachers and 551,561 enrolled pupils. The public high schools numbered 702, and had 1,878 teachers with 44,781 pupils. At the same time in private and parochial schools giving primary or secondary instruction were 15,791 pupils. Teachers are trained in a public and six private normal schools, the former having, in 1906, 2,020 and the latter 2,419 students.

Indiana has many institutions for superior education, the more important being:—

Begun.	Institutions.	Professors.	Students.
1824	Indiana University, Bloomington (State)	80	2,051
1837	De Pauw Univ., Greencastle (M.E.)	33	1,001
1842	Notre Dame University (R.C.)	80	920
1847	Earlham College, Richmond (Friends)	33	525
1838	Wabash College, Crawfordsville (Non-sect.)	23	301
1839	Concordia College, Fort Wayne (Luth.)	11	221
1837	Franklin College (Bapt.)	21	300
1855	Butler College, Indianapolis (Christian)	20	441

Purdue University, at Lafayette, for agricultural instruction, has 141 professors and 2,089 students.

IOWA.—Of persons of and over school age (7-14) in 1905, 1.5 per cent. could not read or write. School attendance is compulsory for 16 consecutive weeks annually during school age. School affairs are under the Superintendent of Public Instruction. There is also a State board of educational examiners. County superintendents are elected biennially. In 1906 the elementary public schools had 517,447 pupils and 28,263 teachers. The public high schools had 1,387 teachers and 32,002 pupils. The public normal school had 77 teachers and 2,161 students in 1905, while six private normal schools had 52 teachers and 596 students. In the State there are 25 universities and colleges, the more important being:—

Begun.	Institutions.	Professors.	Students.
1860	Iowa State University, Iowa City	113	1,815
1881	Drake Univ., Des Moines (Chr.)	120	1,846
1890	Highland Park College, Des Moines (Undenom.)	48	1,984
1867	Simpson Coll., Indianola (M.E.)	22	929
1894	Morningside College, Sioux City (M.E.)	37	480
1857	Upper Iowa University, Fayette (M.E.)	18	504
1847	Iowa College, Grinnell (Undenom.)	55	640
1853	Cornell Coll., Mt. Vernon (M.E.)	40	755
1842	Wesleyan University, Mount Pleasant (M.E.)	22	375
1873	Penn Coll., Oskaloosa (Friends)	18	221
1881	Coe Coll., Cedar Rapids (Presb.)	19	297

The State College of Agriculture and Mechanic Arts at Ames has 164 instructors and 2,383 students.

KANSAS.—The Superintendent of Public Instruction has general supervision of the educational interests of the State, a Board of 3 Commissioners having the management of school finance. In 1906 the public elementary schools had 11,258 teachers and 361,346 enrolled pupils; the public high schools had 778 teachers and 20,249 pupils. Teachers are trained in two public normal schools which in 1905 had 54 teachers and 1,040 pupils. Higher instruction is given in the University of Kansas, founded in 1864; in 1908 it had 117 professors and 2,250 students in all departments. The State also has an Agricultural College with 78 professors and 1,460 students. Baker University (M. E.) at Baldwin has 40 professors and 800 students; Bethany College (Lutheran) at Lindsborg has 40 professors and 960 students; St. Mary's

College (R. C.), 43 professors and 426 students; Washburn College (Cong.), Topeka, 98 professors and 711 students; Kansas City University (Meth.-Prot.), 67 professors and 454 students; Ottawa University (Bapt.), 20 professors and 434 students; Cooper College (Presb.), Sterling, 11 professors and 200 students, and there are about 12 smaller universities and colleges.

KENTUCKY.—Kentucky has a law for compulsory attendance at school between the ages of 7 and 14 years for eight consecutive weeks, but in the larger cities, for the full term. For white and colored children separate schools are provided. In 1906 the common elementary schools of the State had 10,167 teachers and 494,807 enrolled pupils. The public high schools had 282 teachers and 6,675 pupils. The State had 2 public normal schools with 9 teachers and 126 students in 1905, and there were at the same time six private normal schools with 17 teachers and 308 students. For superior instruction there are universities and colleges, the more important of which are as follows:—

Begun.	Institutions.	Professors.	Students.
1822	Central Univ. of Kentucky, Danville (Presb.)	87	751
1855	Berea College (Non-sect.)	65	1,150
1836	Kentucky Univ. (Christian)	58	790
1829	Georgetown College (Baptist)	22	264

The State Agricultural and Mechanical College has 60 professors and 678 students.

LOUISIANA.—The supervision of education is intrusted to the State Superintendent, the State Board of Education, and parish school boards, each of which elects a parish superintendent. According to the State constitution no funds raised for the support of the public schools of the State shall be appropriated to or used for the support of any private or sectarian school. Under an Act of 1902 the parish boards of directors are prohibited from entering into any agreement with any church or religious order or association for the purpose of running any public school in connection with any private or parochial or other school which may be under the control of any church or religious denomination. City school systems are under separate organization. In 1906 the elementary public schools had 4,498 teachers and 206,746 enrolled pupils. The public high schools had 182 teachers and 3,370 pupils. The 2 public normal schools had 35 teachers and 638 students in 1905. Superior instruction is given in the Louisiana State University (founded in 1860) having, in 1906, 31 professors and 500 students, and in the Tulane University (founded in 1834) having, in 1908, 163 professors and 1,782 students. This university has State support to the extent of the remission of certain taxes. There are also a Roman Catholic college with 24 professors and 440 students, largely Baptist and Methodist colleges and a university for colored students.

MAINE.—Education is free for pupils from 5 to 21 years of age, and compulsory from 5 to 14. The State Superintendent has general supervision over education; there are no county superintendents. Cities and towns have elective school attendance committees. In 1906 the public elementary schools had 6,228 teachers and 120,498 enrolled pupils. The public high schools, 175 in number, had 430 teachers and 9,959 pupils. For the training of teachers in 1905 there were 5 normal schools with 34 teachers and 798 students. The University of Maine, founded in 1868 at Orono, has 70 professors and teachers and 874 students. It is endowed by and receives large appropriations from the State. Bowdoin College, founded in 1794 at Brunswick, has 57 professors and 428 students. Bates College at Lewiston has 21 professors and 450 students, and Colby College at Waterville has 16 professors and 243 students.

Public schools are supported mainly by appropriations from the towns or cities and from the State, and by the income from school funds. The expenditure on them in 1906 was $2,040,285.

MARYLAND.—Educational affairs are controlled by a State Board of Education. The Governor, with the consent of the Senate, appoints boards of School Commissioners in each county. These commissioners serve 6 years; they appoint for each district a board of 3 trustees. Education is compulsory for children 8 to 12 years of age in Baltimore city and Allegany county. A State law which came into force on September 1, 1906, prohibits the employment of children under 12 at any work, and of children from 12 to 16 at any work (except on farms from June 1 to October 15) unless provided with a certificate from the Chief of the State Bureau of Statistics.

In 1906 there were in the public elementary schools of the State 4,964 teachers and 221,017 enrolled pupils; in the public high schools were 280 teachers and 6,597 pupils. The State has 2 normal schools, with 19 teachers and 425 pupils in 1905.

The most important institution for higher education is Johns Hopkins University, organized in 1876. It is non-sectarian, and in 1908 had 175 instructors and 683 students. Washington College, organized 1783, had 11 instructors and 138 students in 1908. St. John's College, organized 1789, had 13 instructors and 180 students. The Woman's College of Baltimore, begun in 1888, had 25 professors and 341 students in 1908. There are, besides, 4 Roman Catholic colleges, a Presbyterian college, and a Methodist Episcopal college. There are also the Maryland Agricultural College with 22 professors and 237 students, the Princess Anne Academy for Colored Youths, and other technical institutions.

MASSACHUSETTS.—The only provision for religious instruction in the public schools of the State is that a portion of the Bible shall be read daily, without written note or oral comment; but a pupil whose parent or guardian informs the teacher in writing that he has conscientious scruples against it shall not be required to read from any particular version, or take any personal part in the reading. The school committee shall not purchase or use schoolbooks in the public schools calculated to favor the tenets of any particular religious sect.

There is a State Board of Education consisting of the Governor and Lieutenant Governor (*ex officio*), and 8 other members appointed for 8 years (one new member being nominated every year by the Governor). School committees are elected for cities and towns, and the cities or towns (singly or in groups) have school superintendents who have charge of the public schools. School attendance is compulsory from 7 to 14 years of age. For the school year 1905-1906 the number of teachers required for the public schools (common and high) was 14,450. The total number of pupils enrolled was 519,632, and there was an average attendance of 425,188. The 266 public high schools had 1,886 teachers and 49,948 pupils, and there were 367 private academies and schools with 97,412 pupils. The 10 State normal schools had 123 teachers in the normal department and 130 teachers in the model and practice departments, while the total number of pupils enrolled was 1,736. The amount obtained from local taxation and all other sources for support of the public schools was $14,052,899, and for buildings and repairs, $3,704,773, making a total of $17,757,672 for all public school purposes. An additional amount of $303,572 was expended on the State normal schools for current expenses only.

Towns having 500 families or householders are required to support a high school, while cities and towns having a population of 20,000 or more are obliged to organize and maintain manual training schools.

Within the State there are 12 non-sectarian colleges and 4 sectarian (2 Catholic, 1 Methodist, 1 Universalist). The non-sectarian colleges, with the year of foundation, incorporation, or charter, and numbers of professors and students (October, 1907) are:—

Begun.	Institutions.	Professors.	Students.
1636	Harvard Univ.,[1] Cambridge	747	5,327
1793	Williams College, Williamstown	57	485
1825	Amherst College, Amherst	45	530
1837	Mount Holyoke College,[2] South Hadley	89	760
1861	Massachusetts Institute of Technology,[3] Boston	156	1,447
1863	Massachusetts Agricultural College,[3] Amherst	40	622
1865	Worcester Polytechnic Institute, Worcester	45	487
1870	Wellesley College,[2] Wellesley	100	1,273
1871	Smith College,[2] Northampton	117	1,567
1902	Clark College, Worcester	27	140
1887	Clark University,[3] Worcester	15	79
1899	Simmons College,[2] Boston	63	565

[1] With Radcliffe College for women and the Harvard Summer Schools. [2] For women only. [3] For men and women.

MICHIGAN.—The general supervision of education in the State is intrusted to the State Superintendent of Instruction. Each county has a school commissioner, elected for 4 years, who inspects schools, and 2 county examiners of teachers. The State is divided into school districts with school boards of trustees and various officials. Education is compulsory for the school term for children from 7 to 15 years of age. In 1907 the public elementary schools had 523,969 enrolled pupils and 17,286 teachers; public high schools had 1,647 teachers and 35,746 pupils. The State has 5 public normal schools with 194 teachers and 5,189 pupils in 1907. The highest education provided by the State is given in the University of Michigan, founded in 1837 at Ann Arbor; in 1907 it had 392 professors and teachers and 4,800 students. Other institutions are Albion College (M. E.) with 25 professors and 460 students; Alma College (Presb.) with 16 professors and 276 students; Detroit College (R. C.) with 15 professors and 250 students; Hillsdale College (Bapt.) with 21 professors and 345 students; Hope College at Holland (Ref.) with 17 professors and 311 students; Olivet College (Cong.) with 30 professors and 284 students; Kalamazoo College (Bapt.) with 13 professors and 274 students. There is a State Agricultural College at Lansing, founded in 1857; it has 91 professors and about 1,191 students. There is a School of Mines at Houghton.

MINNESOTA.—The public school system is under the supervision of the State Superintendent of Public Instruction. In 1907 the public elementary schools of the State had 13,928 teachers and 429,012 enrolled pupils; the public high schools had 1,027 teachers and 22,905 pupils. For the instruction of teachers (who are examined and licensed by county superintendents) there were 6 public normal schools with 127 teachers and 3,505 pupils in 1907. The University of Minnesota at Minneapolis, founded in 1868, had 380 professors and 4,600 students in 1907. It is a State university governed by 12 regents, 3 of whom are regents *ex officio* and the rest appointed for 6 years by the Governor. Other institutions for superior instruction are:—

Begun.	Institutions.	Professors.	Students.
1854	Hamline Univ., St. Paul (M.E.)	65	505
1857	St. John's University, Collegeville (R.C.)	33	306
1862	Gustavus Adolphus College, St. Peter (Luth.)	26	390
1867	Carleton College, Northfield	20	329
1874	St. Olaf's College, Northfield (Luth.)	22	455
1885	Macalester College, St. Paul (Presb.)	25	227

MISSISSIPPI.—Education is under the supervision of a State Board of Education. County superintendents are elected by the counties for four years; city superintendents by the school boards; school district trustees by the districts. There is no law for compulsory attendance at school; white and colored children are taught in separate schools. In 1907 the public elementary schools had 9,499 teachers, 482,208 enrolled pupils. The public high schools had 310 teachers and 5,820 pupils. Two public normal schools in 1907 had 7 teachers and 270 students; two private normal schools had 20 teachers and 174 students. For higher education Mississippi has 6 universities and colleges. These institutions comprise the University of Mississippi, which in 1907 had 28 instructors and 344 students; Mississippi College, Clinton (Bapt.), with 9 professors and 436 students; Rust University, Holly Springs (M. E.), with 15 professors and 392 students; and Millsaps College, Jackson (M. E. So.), with 14 professors and 320 students. The Agricultural and Mechanical College has 44 professors and 960 students. The Alcorn Agricultural and Mechanical College for colored youths has 20 professors and 498 students.

MISSOURI.—For the supervision of instruction in public schools there is a Board of Education of which the Superintendent of Public Instruction is President. Separate schools are provided for white and colored children. School attendance is compulsory on children from 8 to 14 years of age for not less than half the school term. In 1907 the public elementary schools had 17,847 teachers and 741,745 enrolled pupils. The public high schools had 1,286 teachers, and 29,056 pupils. There were 4 public normal schools with 158 teachers and 3,584 pupils in 1907. For superior instruction there are many universities and colleges, the more important being as follows:—

Begun.	Institutions	Professors.	Students.
1841	University of Missouri, Columbia (State)	152	2,536
1859	Washington University, St. Louis (Non-sect.)	203	1,744
1829	St. Louis University (R.C.)	150	906
1851	Christian Brothers College, St. Louis (R.C.)	30	480
1849	William Jewell College, Liberty (Bapt.)	45	528
1887	Missouri Wesleyan College, Cameron (M.E.)	11	338
1889	Missouri Valley College, Marshall (C. Presb.)	13	330
1875	Park College, Parkville (Presb.)	25	417
1873	Drury Coll., Springfield (Cong.)	25	461
1883	Tarkio College (U. Presb.)	27	317
1864	Central Wesleyan College, Warrenton	18	303

The Lincoln Institute for colored youths had 21 professors and 532 students.

MONTANA.—For the whole State there is a Superintendent of Public Instruction, and also one for each county. In 1907 the public elementary schools had 1,741 teachers, 48,744 enrolled pupils; the public high schools had 172 teachers and 3,061 pupils. The normal schools had 14 teachers and 183 students in 1907. The University of Montana in 1907 had 30 instructors and 291 students. The State also supports a College of Agriculture and Experimental Station, and a State School of Mines at Butte.

NEBRASKA.—In Nebraska (as in Iowa) in 1900 only 2.3 per cent. of the population over 10 years of age were illiterate, the lowest proportion of illiterates in the United States. The Superintendent of Public Instruction has general supervision of the schools, and the counties have also superintendents. School attendance is compulsory for children from 7 to 15 years of age for not less than 12 weeks in school term. The use of the Bible is permitted in public schools, but sectarian instruction is prohibited. The elementary public schools, in 1907, had 10,059 teachers, 261,453 enrolled pupils. There were public high schools with 935 teachers and 18,001 pupils. There are 2 State normal schools, 5 junior normal schools with summer sessions only, and 2 private normal schools. Higher instruction is provided in 10 universities and colleges, of which the more important are:—

Begun.	Institutions.	Professors.	Students.
1869	University of Nebraska, Lincoln (State)	235	3,237
1879	Creighton Univ., Omaha (R.C.)	103	707
1891	Union Coll. (Seventh Day Adv.)	30	420
1872	Doane College, Crete (Cong.)	22	239
1882	Hastings College (Presb.)	14	247
1888	Nebraska Wesleyan Univ. (M.E.)	45	920
1890	York College (U.B.)	17	560

The State has also an agricultural college.

NEVADA.—The State Superintendent of Public Instruction has general supervision over educational matters, while the general management of school finance is intrusted to the State Board of Education. School attendance is compulsory for children from 8 to 14 years of age for 16 weeks in the year (8 weeks consecutive). In 1907 the elementary public schools had 322 teachers and 9,587 enrolled pupils. The public high schools had 35 teachers and 542 pupils. The State has also a normal school and a university at Reno which was founded in 1886 and had 34 professors and 347 students in 1907.

NEW HAMPSHIRE.—The State law requires that at least 20 weeks of schooling must be provided in every town annually. School attendance is compulsory for children from 8 to 14 years of age during the whole school term; and for children who cannot read and write English the school age extends to 16. Each town constitutes a single district for school purposes, its school affairs being administered by

a school board of 3 persons, chosen 1 each year for 3 years. There are no county boards or county high schools. The State maintains a State department of public instruction with a superintendent of public instruction at its head. In 1906 the public elementary schools of the State had 2,614 teachers, 59,747 enrolled pupils; the public high schools had 221 teachers and 4,666 pupils. The normal school had 9 teachers and 119 students in 1905. The principal colleges within the State are Dartmouth College, at Hanover, founded in 1769, and the New Hampshire College of Agriculture and the Mechanic Arts, at Durham, founded in 1868. They are non-sectarian. Dartmouth has 85 instructors and 1,232 students; the State College 20 instructors and 159 students. St. Anselm's College at Manchester (R. C.) had 25 instructors and 135 students in 1908.

Religious instruction is not given in the public schools. The Roman Catholics maintain parochial schools in all the cities and some of the large towns.

The expenditure on the State schools in 1904-1905 amounted to $1,557,061. Dartmouth College has productive funds amounting to $2,600,000 and an income of $181,000.

NEW JERSEY.—Elementary instruction is free and compulsory for all children from 7 to 14 years of age; the schools are open to all from 5 to 20 years of age. The State Board of Education directly controls several special schools, and, besides discharging other duties, regulates the administration of the State school laws. For the whole State there is a Superintendent of Public Instruction, and also one for each county. Each municipality forms a school district with its board of education, but local arrangements may be modified. In 1906 the public elementary schools had 8,430 teachers and 353,032 enrolled pupils. The public high schools had 726 teachers and 16,377 pupils. In 1905, 4 public normal schools had 81 teachers and 615 students. There are private high schools with about 440 teachers and 3,700 pupils.

Higher and non-sectarian instruction is provided at Princeton University (founded in 1746), which, in 1908, had 163 professors and 1,301 students; at Rutgers College (1766) at New Brunswick, with 40 professors and 310 students; and at Stevens Institute of Technology (1871) at Hoboken, with 35 professors and 390 students.

There are Episcopal, Methodist, Presbyterian, Lutheran, and Roman Catholic colleges within the State.

NEW MEXICO TERRITORY.—Elementary education is free, and for three months in the year all children between 7 and 14 years of age may be compelled to attend school. Education is under the supervision of a Territorial Board. In addition to the Territorial Superintendent, there is a superintendent for each county elected by the voters for 2 years, and each county is divided into school districts for each of which 3 directors are elected for 3 years. For cities and towns boards of education are elected annually. There are (1907) 939 public schools in the Territory with 39,810 enrolled pupils, 24,898 in average attendance, and 973 teachers; 68 sectarian schools with 6,000 pupils and 188 teachers. Besides, there are 34 Indian schools with 2,500 pupils, and 110 teachers (maintained by the Federal Government). For special and higher instruction there are various institutions: a college of agriculture and mechanic arts, a normal school, a normal university, a school of mines, a military institute, and an institute for the deaf and dumb. At Albuquerque is the University of New Mexico, founded in 1889, it has 16 professors and 158 students. The Territorial schools are maintained by funds assigned by the Territorial Government, and by the proceeds of the school tax levied by the commissioners of each county and municipality.

Religious instruction in public schools is prohibited by law, but boards of directors may open schoolhouses for the use of religious societies, etc., at times outside the regular school hours.

NEW YORK STATE.—The general supervision of public schools is intrusted to a Commissioner of Education, chosen by the Regents of the University of the State of New York. Under him are school commissioners elected for 3 years to supervise schools in the districts marked out by special act of legislature. These districts are subdivided by the school commissioners into school districts, each of which has its own officers (trustees, clerk, etc.). The common school districts usually have 1 trustee, but may have 3. The union school districts, of which there are about 675, must have a board of at least 3 trustees, and may have 9. Many of the powers possessed by the voters in common school districts are conferred on the boards of education of the union school districts. The city charters provide for the supervision by city superintendents of the city schools. These are not under the school commissioners, but under the city board of education, which is responsible to the Commissioner of Education. Education is compulsory between the ages of 8 and 16 years.

In 1906 the children enrolled in the public elementary schools numbered 1,252,672, and the number of teachers was 33,318. There were 82,882 pupils with 3,442 teachers in the public high schools, while the private high schools had 33,580 pupils with 1,426 teachers. In 1906 there were 12 public normal schools with 274 teachers and 8,337 students. There were 30 universities and colleges with 2,362 professors and teachers and 19,299 collegiate and graduate students.

The public high schools, and higher education generally, are under the supervision of the University of the State of New York, not a teaching but an administrative institution, governed by a board of regents chosen by the State legislature. It includes all the incorporated colleges, academies, and higher departments of public schools; it can incorporate new colleges, may inspect the various institutions, and may confer degrees.

Within the State are many sectarian and non-sectarian colleges. The names, year of foundation, and numbers of instructors and students in all the departments of the chief non-sectarian colleges in 1906 were approximately as follows:—

Begun.	Institutions.	Professors.	Students.
1896	Adelphi College, Brooklyn	30	500
1836	Alfred University, Alfred	25	273
1889	Barnard College, Manhattan	70	580
1896	Clarkson Tech. School, Potsdam	9	92
1847	Coll. of City of N. Y., Manhattan	221	4,383
1819	Colgate University, Hamilton	47	482
1754	Columbia Univ., Manhattan	614	5,655
1868	Cornell University, Ithaca	548	4,465
1855	Elmira College, Elmira	19	292
1812	Hamilton College, Clinton	19	190
1830	New York University, New York	262	4,026
1890	Keuka College, Keuka Park	15	150
1870	Normal College of the City of New York	180	3,350
1854	Polytechnic Institute, Brooklyn	38	815
1887	Pratt Institute, Brooklyn	134	3,688
1824	Rensselaer Polytechnic, Troy	42	651
1850	Rochester University, Rochester	24	380
1858	St. Lawrence University, Canton	36	539
1870	Syracuse University, Syracuse	220	3,300
1795	Union University, Schenectady	31	322
1861	Vassar College, Poughkeepsie	97	1,011
1868	Wells College, Aurora	24	177
1802	U. S. Military Acad., West Point	90	533

Educational work is maintained chiefly by the proceeds of the free school tax levied in counties for common schools, and of the general State tax from which appropriations are made for education.

NORTH CAROLINA.—Instruction is under the supervision of the Superintendent of Public Instruction and a Board, which consists of the Governor and other executive officers of the State. City school boards and county school boards, the latter elected by the legislature for two years, appoint their superintendents. Each county is divided into school districts, each of which has a school committee of three members. In several counties school attendance is compulsory. Separate schools are provided for white and for colored children. In 1906 the public elementary schools of the State had 9,871 teachers, and 483,180 enrolled pupils. There were 43 public high schools, with 123 teachers and 2,972 pupils, and 69 private secondary schools with 270 teachers and 4,568 pupils. Teachers are trained in 3 public and 9 private normal schools.

Higher instruction is given in 13 university and college institutions, which in 1905 had 185 professors and teachers and 1,802 collegiate and graduate students. The University of North Carolina (founded in 1789) in 1908 had 94 professors and 790 students; and the Agricultural and Mechanical College (founded in 1889) had 41 professors and 470 pupils. There are large sectarian colleges, and also schools and colleges for colored youths.

The public schools are supported from State and local taxation, and from revenues which accrue from the sale of United States lands, from State and county school funds, and from minor sources.

NORTH DAKOTA.—The Superintendent of Public Instruction has general supervision over the schools of the State, and there are also county and city superintendents. The elementary common schools in 1906 had 5,956 teachers, and 113,378 enrolled pupils; the secondary or high common schools had 347 teachers and 2,854 pupils. There are 2 normal schools with 45 teachers and 745 students. Three university or college institutions had (1906) 75 professors and teachers, and 261 collegiate and graduate students. The State has an agricultural college and a State university founded in 1883, which in 1906 had 61 professors and 861 students. There is also a Congregational college. School revenues are derived from the State fund, district taxes, and various other sources. The expenditure on the public schools in 1905-1906 amounted to $2,879,439.

OHIO.—Schools are under the general supervision of the Superintendent of Public Instruction, who, among other duties, appoints a State Board of Examiners to examine teachers applying for certificates. Each school district has a board of education, which must provide sufficient school accommodation, appoint teachers, prescribe courses of instruction, select textbooks, and report to the county auditor. School attendance during full term is compulsory on children from 8 to 14 years of age. In Ohio in 1906 the common elementary schools had 23,539 teachers and 774,060 enrolled pupils; the common high schools had 2,460 teachers and 58,032 pupils. There are 7 public normal schools with 90 teachers and 536 students, besides 4 private normal schools with 51 teachers and 838 students in 1905. For superior instruction the State contains 35 universities and colleges, with 1,279 professors and 7,697 collegiate and graduate students. The following are the more important institutions:—

Begun.	Institutions.	Professors.	Students.
1853	Antioch College, Yellow Springs	10	234
1872	Buchtel College, Akron	20	267
1804	Ohio Univ., Athens (State)	55	1,386
1809	Miami Univ., Oxford (State)	40	1,149
1825	Franklin College, New Athens (Non-sect.)	7	100
1833	Oberlin College (Non-sect.)	129	1,848
1835	Marietta College (Non-sect.)	41	504
1855	Western College for Women, Oxford (Presb.)	26	245
1874	Cincinnati University (City)	171	1,052
1870	State University, Columbus	175	2,277
1855	Baldwin Univ., Berea (M.E.)	21	360
1846	Mt. Union Coll., Alliance	31	554
1850	Capital Univ., Columbus (Luth.)	162	808
1893	Lima College (Luth.)	9	249
1867	Hiram College (Christian)	22	254
1831	Denison Univ., Granville (Bapt.)	44	583
1824	Kenyon College, Gambier (P.E.)	15	112
1841	Ohio Wesleyan Univ., Delaware	124	1,286
1902	Defiance College (Christian)	20	345
1852	St. Mary's Inst., Dayton (R.C.)	20	340
1870	Wooster University (Presb.)	38	661
1847	Otterbein University, Westerville (U.B.)	26	551
1845	Wittenberg College, Springfield (Luth.)	38	525
1857	Scio College (M.E.)	15	279
1837	Muskingum College, New Concord (U. Presb.)	20	400

The expenditure on the common schools is defrayed chiefly from local taxes levied by school boards in their districts, the remainder being obtained mostly from the State school fund, from the proceeds of certain fines and licenses, and from taxes specially voted from time to time. The State institutions for superior instruction are supported each from its special fund.

OKLAHOMA (including **INDIAN TERRITORY**).—The State has a school system embracing elementary and high public schools, normal schools, and also colleges for superior instruction. Separate schools have to be provided for whites and negroes, all children not negroes being classed as white. In 1906 there were (in Oklahoma proper) 3,870 teachers and 149,368 enrolled pupils in elementary common schools; in high common schools there were 88 teachers and 2,105 pupils. There were, in 1905, 4 normal schools with 72 teachers and 1,471 students. The University (founded in 1892) had, in 1908, 57 professors and 790 students; the Agricultural and Mechanical College (founded in 1890) had 555 students; while the colored Agricultural and Normal University, with 13 instructors, had 363 students in 1905.

In April, 1906, the United States Government assumed effective control of the schools in Indian Territory, and appointed a superintendent and other officials to administer educational affairs until a public school system is established by a Territorial or State government. In 1906 the elementary common schools had 1,305 teachers and 47,620 enrolled pupils; there were 20 teachers and 458 pupils in public high schools.

OREGON.—The Superintendent of Public Instruction has general supervision over the public schools. The State Board of Education has charge of the State school fund; the legislature and the school districts have charge of general school finance. School attendance is compulsory for the full school term for children 8 to 14 years of age. In 1907 the public schools had 4,228 teachers and 103,266 enrolled pupils. In 1907 there were 170 public high schools with 400 teachers and 8,350 pupils; and the 4 public normal schools had, in 1907, 45 teachers and 625 pupils. The State supports an agricultural college and a university, known as the University of Oregon, organized in 1878. In 1908 it had 80 professors and 1,156 students. There are also Methodist, Presbyterian, Catholic, Congregational, and Baptist colleges.

The sum expended on State schools in 1905-1906 was $2,371,750. For the State University and the Agricultural College there are special funds.

PENNSYLVANIA.—The State Superintendent of Public Instruction is appointed for 4 years by the Governor, with consent of the Senate. County superintendents are appointed for 3 years by district school directors. Each township, borough, and city is a school district. School attendance is compulsory for children 8 to 16 years of age for the full school term, but the district school board may reduce this to 70 per cent. of the term. In the school year ending June 1, 1906, the public elementary schools had 31,222 teachers and 1,178,613 enrolled pupils. There were also public high schools with 2,009 teachers and 50,433 pupils. In 15 public normal schools in 1905 there were 373 teachers with 7,247 pupils. The State College and University Council report biennially upon higher education within the State and consider all applications for charters of incorporation of colleges, universities, and theological seminaries which desire the power to confer degrees. The Pennsylvania State College devotes special attention to modern industrial pursuits. In connection with the college there is an agricultural experiment station which receives from the United States Government an appropriation of $15,000 a year.

The more important universities and colleges within the State are as follows:—

Begun.	Institutions.	Professors.	Students.
1740	University of Pennsylvania, Philadelphia (Non-sect.)	435	4,500
1855	Pennsylvania State Coll. (State)	120	1,200
1837	Philadelphia City Central High School (City)	63	2,179
1866	Lehigh University, South Bethlehem (Non-sect.)	64	662
1846	Bucknell University, Lewisburg (Bapt.)	55	771
1819	Western University of Pennsylvania, Allegheny (Non-sect.)	131	862
1876	Grove City College (Non-sect.)	25	655
1866	Lebanon Valley College, Annville (U.B.)	23	319
1878	Holy Ghost College, Pittsburg (R.C.)	25	351
1783	Dickinson College, Carlisle	33	550
1832	Lafayette Coll., Easton (Presb.)	38	442
1832	Pennsylvania College, Gettysburg (Luth.)	19	312
1833	Haverford College (Friends)	21	160
1787	Franklin and Marshall College, Lancaster (Ref.)	23	394
1854	Lincoln University (Presb.)	16	184
1815	Allegheny College, Meadville (M.E.)	17	315
1852	Westminster College, New Wilmington (U.Presb.)	23	291
1884	Temple College, Philadelphia (Non-sect.)	212	3,475
1858	Susquehanna University, Selinsgrove (Luth.)	22	267
1869	Swarthmore College (Friends)	36	331
1802	Washington and Jefferson College, Washington (Presb.)	30	442
1885	Bryn Mawr College for Women (Non-sect.)	55	419

RHODE ISLAND.—State education is supervised by a Board of 8 members elected by the General Assembly, the Governor and Lieutenant Governor being *ex officio* members. Free public schools are provided in every town and city, under local committees, towards the expense of which the State contributes. By custom, not by authority, there is devotional exercise at the beginning of the school day; but no formal religious instruction. In 1906 the public elementary schools had 1,795 teachers and 75,797 enrolled pupils; The high schools had 195 teachers and 4,300 pupils. The expenditure on the schools was $1,987,751 in 1905. The State maintains a normal school with 38 teachers, and an agricultural college with 25 teachers. The Brown University at Providence, founded in 1764, is undenominational. In 1908 it had 92 professors and teachers, and 995 students, male and female.

SOUTH CAROLINA.—School attendance is not compulsory, but there are restrictions on the employment of illiterate children in factories or mines. There are separate schools for white and colored children. The Superintendent of Education has general supervision of the school system, but the control is chiefly intrusted to the State Board of Education, appointed by the Governor. This Board appoints county boards, which, in turn, appoint school trustees for the small districts. In 1906 the public elementary schools of the State had 313,396 enrolled pupils. The public high schools had 207 teachers and 4,679 pupils. For the training of teachers there was one public normal school with 398 students, and 4 private with 104 students, in 1905. For higher instruction the State has two institutions: the University of South Carolina, founded in 1801, having, in 1908, 24 professors and 280 students, and Clemson Agricultural College, founded in 1889, with 47 professors and 690 students in 1908. Other colleges are Charleston City College with 10 professors and 90 students; Allen University (A. M. E.) with 13 professors and 380 students; Erskine College (A. R. Presb.) with 10 professors and 184 students; Wofford College (M. E. So.) with 12 professors and 287 students. There are several smaller denominational colleges, and also 8 colleges for women, the largest of which is Converse College with 23 professors and over 354 students. There are also a college for colored youths, a military academy, and a normal and industrial college.

SOUTH DAKOTA.—There is a State Department of Public Instruction; a State Superintendent of Public Instruction is elected biennially; each county has its superintendent of schools; there are rural and independent (urban) school districts, managed by school boards. Elementary and secondary education are free to all from 6 to 21 years of age. Between the ages of 8 and 14 attendance at a public day school is compulsory on all not otherwise taught, for at least 12 weeks in the year, 8 of which must be consecutive. The number of schools in rural and independent districts in 1906 was 5,020; the registered number of scholars 110,194, and the number of teachers 5,190 (4,273 female). The expenditure for the school year ending June 30, 1906, amounted to $2,612,570. There were 251 secondary schools in the State in 1906, with 710 teachers. State educational institutions were 3 normal schools with 39 instructors and 504 students (exclusive of pupils in model schools); a normal and industrial school with 14 instructors and 231 students; a school of mines with 12 instructors and 110 students; an agricultural college with 35 instructors and 571 students; and a university with 45 instructors and 424 students. In addition the State maintains schools for the blind, the deaf mutes, and the feeble-minded, as well as a reform school. Colleges under sectarian control are Huron College (Presb.) with 18 professors and 415 students, Dakota Wesleyan University with 26 professors and 528 students, Yankton College (Cong.) with 24 professors and 382 students. There are several smaller colleges. Day (elementary) and boarding (higher) Indian schools are maintained by the State, and there are also various denominational schools for the education of Indian children.

TENNESSEE.—The Governor appoints a Board of Education and the Superintendent of Public Instruction, who is also Secretary of the Board. There are, besides, county and city superintendents. School districts are co-extensive with civil districts or townships, and each district has 3 elective directors. The county courts and the district directors perform the duties usually assigned to school boards. In several counties school attendance is compulsory, and throughout the State the employment of children under 14 years of age in workshops, factories, or mines, is illegal. There are separate schools for white and for colored children. In 1906 the public elementary schools had 502,168 enrolled pupils with 8,936 teachers. The public high schools had 253 teachers and 6,148 pupils. There is in the State a public normal school with 28 teachers and 526 pupils, besides 7 private normal schools with 56 teachers and 1,126 pupils in 1905. Higher education is provided in 22 universities and colleges, the more important of which are:—

Begun.	Institutions.	Professors.	Students.
1785	University of Nashville	66	1,457
1867	Grant University, Athens (M. E.)	62	910
1794	University of Tennessee, Knoxville (State)	106	755
1866	Fisk Univ., Nashville (Cong.)	35	571
1872	Vanderbilt University, Nashville (M. E. So.)	115	902
1866	Walden Univ., Nashville (M. E.)	70	925
1865	Roger Williams University, Nashville (Bapt.)	15	290
1851	Carson and Newman College, Jefferson City (Bapt.)	23	529
1842	Cumberland Univ., Lebanon (C. Presb.)	21	216
1882	Christian Bros. Coll., Memphis	18	297
1868	University of the South, Sewanee (P. E.)	34	456
1848	Burrill College, Spencer (Chr.)	14	214

There are also 7 colleges for women, 8 commercial schools, and a manual training school within the State. There are also 2 colleges for colored students.

TEXAS.—Educational affairs are controlled by the State Board of Education, and the State Superintendent of Public Instruction. There are no county school boards, but county superintendents of public instruction are elected for 2 years by the qualified voters in the respective counties; cities and independent districts have school boards, and school districts have trustees. The employment of illiterate children under 14 years of age in factories, etc., is illegal. Separate schools are provided for white and colored children. In 1906 the State public schools had 16,184 teachers and 733,467 enrolled pupils. The public high schools had 932 teachers and 22,552 pupils. The State has 4 public normal schools with, in 1905, 43 teachers and 1,308 students. For superior instruction there are numerous institutions. The University of Texas, founded in 1833 at Austin, with a medical school at Galveston, had, in 1908, 85 professors and 2,462 students. St. Edward's College (R. C.) at Austin has 17 professors and 255 students; Howard Payne College (Bapt.) at Brownwood has 12 professors and 295 students; Fort Worth University (M. E.), 45 professors and 711 students; Fort Worth Polytechnical College (M. E. So.), 21 professors and 500 students (mostly preparatory); the Southwestern University (R.C.), Georgetown, 59 professors and 440 students; Burleston College (Bapt.), Greenville, 8 professors and 207 students; Texas Christian University, Waco, 31 professors and 400 students; Baylor University (Bapt.), Waco, 90 professors and 725 students. The State Agricultural and Mechanical College, founded in 1871, has 44 instructors and 385 students. The Prairie View State College (normal and industrial) for colored youths has 19 professors and 379 students (all in the preparatory department).

UTAH.—In 1900 the percentage of illiterates in the population was only 0.5, the number being 6,141, of whom 3,167 were foreign born. The public school system, introduced in 1890, includes kindergarten, primary, grammar, and high schools, an agricultural college, a university, "and such other schools as the legislature may establish." Educational affairs are controlled by the Superintendent of Public Instruction and a Board of Education. There are city and county boards of education. School attendance for 20 weeks annually (10 consecutive), in large cities 30 weeks (10 consecutive), is compulsory on children from 8 to 16 years of age. In 1906 the public elementary schools had 1,795 teachers and 75,797 enrolled pupils; the public high schools had 97 teachers and 2,150 pupils. A State normal school with 8 teachers and 183 pupils in 1905 is maintained in connection with the university. The University of Utah was organized in 1850, and had 60 instructors and 755 students in 1908. It has a school of arts and sciences, a State school of mines, a State normal school, and a branch normal school and kindergarten. The Utah Agricultural College (founded in 1890) has 50 instructors and 882 students. Both of these institutions receive annual grants from the State. The Mormon Church maintains Brigham Young College at Logan, organized

1877, which has (1908) 44 instructors and 886 students; the Latter Day Saints College at Salt Lake City with 50 teachers and 993 students, and an academy at Provo with 50 teachers and 1,542 students. There are colleges of other religious bodies, one of which, the Collegiate Institute, is Presbyterian, having 7 teachers and 80 pupils; 2 are Roman Catholic, one, for men, with 15 teachers and 180 students, the other, for girls, with 12 teachers and 250 students. The Protestant Episcopal College for girls has 8 teachers and 92 students.

VERMONT.—School attendance during the full school term is compulsory for children from 8 to 15 years of age. No child under 16 who has not completed the 9 year school course may be employed in any railway, factory, mine, or quarry work, or as a messenger during school hours. In 1906 the public schools had 3,071 teachers and 66,681 pupils. Of the public schools 77 were high schools with 213 teachers and 5,218 pupils. There were also 18 private secondary schools with 99 teachers and 1,694 pupils. In the three normal schools were 17 teachers and 219 students. The University of Vermont (1791) had, in 1908, 80 instructors and 788 students; Norwich University (1834) 14 instructors and 180 students; Middlebury College (1800) 14 instructors and 220 students.

VIRGINIA.—Elementary instruction is free, and the legislature may make it compulsory between the ages of 8 and 12. No child under 12 may be employed in any mining or manufacturing work. White and colored children must not be taught in the same school. For the regulation of education there is a State Board consisting of the Governor, the Attorney General, the Superintendent of Public Instruction (who is president), and 3 other members, elected for 4 years by the Senate. The State is divided into school divisions (counties or cities, singly or united) with superintendents, and school districts (magisterial districts), each with 3 trustees. There are school boards for counties, for cities, and for districts.

In 1906 the public elementary schools had 8,814 teachers with 356,192 enrolled pupils; the public high schools had 258 teachers and 5,580 pupils. In 1905 there were 3 public normal schools with 53 teachers and 1,034 students, besides 2 private normal schools with 9 teachers and 112 students. The more important institutions for higher instruction are:—

Begun.	Institutions.	Professors.	Students.
1693	William and Mary College, Williamsburg (State)	22	238
1749	Washington and Lee University, Lexington	36	560
1825	University of Virginia, Charlottesville (State)	72	788
1830	Randolph-Macon Coll., Ashland (M. E. So.)	15	140
1832	Richmond College (Bapt.)	18	321
1853	Roanoke College, Salem (Luth.)	16	206
1893	Randolph-Macon Woman's College, Lynchburg	34	413
1899	Virginia Union University, Richmond (Bapt.)	16	250

Virginia has 4 schools of theology, with 166 students; 3 of law, with 290 students; 3 of medicine, with 577 students; 2 of dentistry, with 78 students; and 2 of pharmacy, with 59 students, besides many business schools, and schools for industrial and manual training. There are Baptist, Lutheran, Methodist, Methodist-Episcopal, and Presbyterian colleges.

WASHINGTON.—In the public schools formal religious teaching, or regular reading from the Bible, is not permitted, but moral training is given and moral principles inculcated. Education is given free of cost, and is compulsory for children from 7 to 15 years of age. The State schools include common schools (lower and higher), 3 normal, and technical and other schools, besides the university. Supervision is exercised by a State Superintendent, a State Board of Education, county superintendents, and boards of directors for districts. In 1906 public elementary schools were taught by 5,777 teachers and attended by 179,294 children; the public high schools had 411 teachers and 9,496 pupils. In 1905 3 State normal schools had 55 teachers and 828 students.

The University of Washington, near Seattle, had, in 1908, 103 professors and teachers and 1,703 students. Students are admitted by examination or by certificates from accredited high schools. The State college at Pullman for science and agriculture had 97 professors or teachers and 1,446 students.

The proceeds of the sale of land in "sections 16 and 36 of each township," set aside for school purposes, constitute a fund of which, however its amount may be otherwise increased, only the income can be used. In addition there is revenue from a State school tax and a district school tax; the cost of instruction in the State in 1905 amounted to $4,185,810.

WEST VIRGINIA.—Most of the denominations have colleges within the State. Elementary education is free for all from 6 to 21 years of age, and school attendance for 20 weeks annually is compulsory for all children between the ages of 8 and 14 years. The public or free schools are non-sectarian. A rigid code of moral instruction is enforced, but no sectarian teaching is permitted. For the whole State there is a Superintendent of Free Schools and also one for each county. Each magisterial district has an elective board of education and is divided into sub-districts, in each of which there is a primary school. There are, moreover, about 50 independent school districts created by special legislative enactments. Each embraces a town of some importance, and usually there is a board of education, though in some the mayor and common council of the town manage the school affairs. In 1906 the public schools had 255,160 enrolled pupils and 7,830 teachers. These numbers include 46 public high schools with 200 teachers and 3,125 pupils. In the State were also 12 private secondary schools with 87 teachers and 1,019 pupils. The six public normal schools had 92 teachers and 2,240 students.

The money for the maintenance of these schools is derived from three sources, viz.: (1) The interest on the invested school fund derived from the State lands and properties and limited by a constitutional amendment in 1902 to $1,000,000. (2) The general or distributable school fund derived from taxation, fines, and other sources. (3) The local levies of the boards of education.

The West Virginia University, founded in 1867, at Morgantown, offers higher instruction free to all residents of the State, and at nominal fees to those from other States. In 1908 it had 78 professors and 1,208 students. Bethany College has 18 instructors and 300 students. There are two other institutions, one at Barboursville, the other at Elkins, with, together, about 300 students.

WISCONSIN.—The supervision of public instruction is vested in the State Superintendent of Schools, who is elected for a term of 4 years. School attendance is compulsory for all children between 12 and 14 years of age, in cities for the entire school year, and in towns and villages for 8 months a year. For educational purposes the State is divided into districts, none of which may exceed 36 square miles in area. District meetings are held annually and elect the district school board. In cities and in towns under the township system of school government there are also school boards. Another educational division is that into superintendent districts, each county forming one or two districts. In 1906 the public elementary schools had 12,918 teachers, and 442,235 enrolled pupils. The public high schools had 1,162 teachers and 25,819 pupils. The 11 public normal schools had 156 teachers and 2,657 pupils in 1905.

The University of Wisconsin at Madison was begun in 1850. It is governed by a Board of Regents, consisting of one member from each congressional district, and two from the State at large, appointed by the Governor for a term of 3 years. It has 395 professors and over 4,500 students. Other important colleges in the State are: Beloit College, of Beloit, non-sectarian, 35 instructors and 481 students; Lawrence University, of Appleton, interdenominational, with 37 instructors and 610 students; Ripon College, non-sectarian, with 23 instructors and 279 students; Concordia College (Lutheran), Milwaukee, with 9 professors and 252 students; and Northwestern University, Watertown (Lutheran), with 12 instructors and 278 students. There are, besides, several smaller colleges.

WYOMING.—Wyoming has a full public school system, the general supervision of which is intrusted to the State Superintendent of Public Instruction. In every county there is a school superintendent. In 1906 the public elementary schools had 767 teachers and 18,134 enrolled pupils. The public high schools had 33 teachers and 637 pupils. Teachers are trained in the normal school, which is carried on in connection with the University of Wyoming, at Laramie. This university was founded in 1887 and in 1908 had 40 professors and 230 students. Besides the normal school it comprehends an agricultural college, a school of mines, a college of mechanical engineering, a school of commerce, and a school of music.

ALASKA.—An Act of Congress of January, 1905,

constitutes the Governor *ex officio* superintendent of the public schools. The district is well supplied with schools, those for whites being under the Governor, and those for natives under the Bureau of Education. Schools in the incorporated towns are supported by a municipal tax. Schools for the natives are maintained by various missions and by the United States, there being an appropriation by Congress for this purpose. There are altogether about 52 schools, 62 teachers, and 3,080 enrolled pupils. At the United States Indian Training School at Carlisle, Pa., there are about 80 Alaskan children.

HAWAII.—Of the population over 10 years of age, 33.1 per cent. are illiterate. Schools are established all over the islands, the sum allotted for public instruction for the biennial period of 1905-1907, $806,880. Elementary education has been free since 1888. The language in general use in schools is English, only about 2 per cent. of the children being taught in Hawaiian. In 1905, there were 147 public schools with 414 teachers and 15,202 enrolled pupils; also 57 private schools with 273 teachers and 5,204 enrolled pupils. Of the public school pupils in 1905, 8,256 were Hawaiian or part Hawaiian, 4,345 Portuguese, 5,594 Asiatics, 877 American, 205 British, and 321 German. In Hawaii there are, besides, a normal and training school, and a reformatory industrial school for boys.

PORTO RICO.—In 1899 over 83 per cent. of the population was illiterate. In 1899 a general board of education and local school boards were formed, education was made compulsory, and authorities were required to provide suitable accommodation. In 1904 the population of school age (5-17) numbered 393,786; schools open, 1,073; teachers, 1,204; enrolled pupils, 61,168; average attendance, 41,798. In 1906, there were 1,074 schools with 41,802 pupils in average attendance. The sum devoted to instruction (1903-1904) amounted to $577,027. There is a high school in operation at San Juan, and a large normal school at Rio Piedras, where a university also has been established. A system of agricultural schools gives instruction to over 1,000 pupils.

PHILIPPINE ISLANDS.—Education is under the direction of the Secretary of Public Instruction, under whom is a general superintendent. The archipelago is divided into 35 districts, each of which has a superintendent, aided by a superior school board and local boards. The teaching staff comprises over 800 American teachers for all grades, and 485 Filipino teachers on Insular pay, and 5,656 Filipino teachers paid by the municipalities. English is taught in all the public schools, to the number of over 3,000. In March, 1906, there were more than 500,000 enrolled pupils. Night schools for adults have 25,000 pupils. The central government pays the American functionaries and teachers; the municipalities pay the Filipino teachers and uphold local school buildings. The annual cost is about $2,700,000. A school for training teachers has been opened, and industrial and trade schools have been established. The St. Thomas University at Manila has several faculties, including one of medicine.

GUAM (LADRONES).—There are 1,600 children from 7 to 13 years of age under a compulsory school system, both in Agana and in the villages. The children are taught in English, and learn also many handicrafts. An agricultural experimental station has been established, and is attended by a class of 30 boys.

SAMOAN ISLANDS.—There are 3 religious missions at work: The London Missionary Society, the Roman Catholic (French) mission, and the Mormon mission, and education is in the hands of these bodies. There are 37 schools in the islands, attended by 798 boys and 643 girls.

Public Education. United States.

NAME OF STATE.	NUMBER OF TEACHERS.			NUMBER OF PUPILS.			
	Primary and Grammar.	High Schools.	Colleges and Universities.	Primary and Grammar.	High Schools.	Private Schools and Academies.	Colleges and Universities.
Alabama	5,150	250	156	394,897	5,103	1,686	1,667
Arizona	610	16	26	24,962	398	67	226
Arkansas	7,417	164	151	341,131	4,015	1,248	2,552
California	8,181	1,038	829	297,102	25,912	2,913	8,313
Colorado	4,197	375	414	135,066	8,941	184	3,560
Connecticut	4,263	466	441	163,482	10,491	2,977	3,674
Delaware	835	62	26	35,353	1,542	225	252
District of Columbia	1,635	229	542	54,103	4,381	1,076	3,425
Florida	3,130	159	88	127,607	2,858	311	706
Georgia	10,041	319	227	491,957	7,128	2,818	3,281
Idaho	1,677	76	26	61,151	1,575	392	310
Illinois	26,097	2,031	1,718	936,175	50,861	3,436	21,207
Indiana	14,354	1,878	634	551,561	44,781	2,034	7,525
Iowa	28,263	1,387	855	517,447	32,002	2,427	9,784
Kansas	11,258	778	662	361,346	20,249	746	7,422
Kentucky	10,167	282	358	494,807	6,675	3,333	4,515
Louisiana	4,498	182	193	206,746	3,370	810	2,218
Maine	6,228	430	162	120,498	9,959	2,397	1,595
Maryland	4,964	280	448	221,017	6,597	2,130	3,379
Massachusetts	12,564	1,886	1,378	469,684	49,948	6,460	10,742
Michigan	15,265	1,558	585	485,753	35,710	1,347	7,076
Minnesota	12,677	920	531	410,697	20,993	2,147	5,882
Mississippi	8,685	237	147	399,148	4,449	1,334	2,726
Missouri	16,447	1,227	790	724,830	30,233	3,206	8,492
Montana	1,594	147	64	45,667	3,077	160	449
Nebraska	8,832	807	508	261,453	18,079	1,291	5,010
Nevada	336	23	33	8,302	346	.....	286
New Hampshire	2,614	221	138	59,747	4,666	2,383	1,341
New Jersey	8,430	726	259	353,032	16,377	3,844	2,653
New Mexico	880	39	48	39,377	651	93	328
New York	33,818	3,442	2,384	1,252,672	82,882	10,327	22,573
North Carolina	9,871	123	327	483,180	2,972	4,438	4,487
North Dakota	5,956	347	118	113,378	2,854	92	1,442
Ohio	23,539	2,460	1,295	774,060	58,032	2,303	14,081
Oklahoma	5,175	108	129	196,988	2,563	369	1,302
Oregon	4,228	400	230	103,266	8,350	863	1,974
Pennsylvania	31,222	2,009	1,391	1,178,613	50,433	10,510	16,148
Rhode Island	1,852	195	105	67,125	4,300	808	1,048
South Carolina	5,837	207	192	313,396	4,679	996	2,876
South Dakota	5,090	265	158	110,094	5,009	312	1,893
Tennessee	8,936	253	542	502,168	6,148	3,471	7,103
Texas	16,184	932	392	733,467	22,552	3,427	6,285
Utah	1,795	97	145	75,797	2,150	2,536	2,030
Vermont	3,071	213	93	66,681	5,215	1,410	791
Virginia	8,814	258	322	356,192	5,580	3,376	4,058
Washington	5,777	411	232	179,294	9,496	508	2,809
West Virginia	7,630	200	89	252,035	3,125	1,098	1,656
Wisconsin	12,918	1,162	463	442,235	25,819	1,416	5,620
Wyoming	767	33	21	18,134	637	20	236

FOREIGN UNIVERSITIES.

Date of Foundation.	UNIVERSITY.	Number of Students.
1494	Aberdeen, Scotland	862
1872	Adelaide, Australia	634
1874	Agram, Croatia, Hungary	1,092
1409	Aix-en-Provence, France	1,269
1887	Allahabad, India	1,257
1875	Angers (Catholic University), France	229
1836	Athens, Greece	2,574
1882	Auckland, New Zealand	1,800
1450	Barcelona, Spain	1,887
1460	Basel, Switzerland	604
1875	Beirut, Syria (St. Joseph)	200
1863	Beirut, Syria (Syrian Prot. College)	883
1838	Belgrade, Servia	490
1809	Berlin, Germany	6,496
1832	Bern, Switzerland	1,661
1422	Besançon, France	325
1900	Birmingham, England	848
1158	Bologna, Italy	1,626
1857	Bombay, India	1,604
1818	Bonn, Prussia	3,348
1441	Bordeaux, France	2,496
1506	Breslau, Germany	2,075
1834	Brussels, Belgium	777
1864	Bucharest, Roumania	4,140
1769	Budapest, Hungary	6,068
1821	Buenos Aires, Argentina	2,650
1431	Caen, France	814
1596	Cagliari, Italy	243
1857	Calcutta, India	1,045
1229	Cambridge, England	3,463
1727	Camerino, Italy	355
1873	Canterbury, Christchurch, N. Zealand	....
1873	Cape of Good Hope, Capetown, Africa	590
1882	Caracas, Venezuela	....
1444	Catania, Sicily	832
....	Catholic University College, Dublin	240
....	Chinese University, Tientsin	....
1811	Christiania, Norway	1,470
1808	Clermont-Ferrand, France	281
1290	Coimbra, Portugal	1,042
1479	Copenhagen, Denmark	1,200
1613	Cordoba, Argentina	....
1364	Cracow, Austrian Poland	2,623
1692	Cuzco, Peru	....
1875	Czernowitz, Austria	764
1818	Dalhousie, Halifax, Canada	335
1722	Dijon, France	966
1632	Dorpat, Russia	1,676
1591	Dublin, Ireland	1,089
1880	Dundee, Scotland	531
1831	Durham, England	1,926
1582	Edinburgh, Scotland	3,278
970	El Azhar, Cairo	9,758
1743	Erlangen, Germany	1,065
1264	Ferrara, Italy	226
1349	Florence, Italy	633
1457	Freiburg, Germany	2,472
1889	Fribourg, Switzerland	472
1878	Geneva, Switzerland	1,408
1812	Genoa, Italy	1,193
1816	Ghent, Belgium	387
1607	Giessen, Germany	1,192
1887	Gothenburg, Sweden	1,118
1737	Göttingen, Germany	2,004
1450	Glasgow, Scotland	2,580
1531	Granada, Spain	1,003
1586	Graz, Styria, Austria	1,756
1456	Greifswald, Germany	970
1339	Grenoble, France	896
1614	Gröningen, Holland	484
1502	Halle, Germany	2,192
1728	Havana, Cuba	600
1386	Heidelberg, Germany	1,933
1640	Helsingfors, Finland, Russia	2,088
1890	Hobart, Tasmania	373
....	Imperial University, Peking	....
1673	Innsbruck, Tyrol, Austria	1,081
1860	Jassy, Roumania	629
1558	Jena, Germany	1,501
1804	Kazan, Russia	873
1804	Kharkov, Russia	1,660
1665	Kiel, Germany	1,278
1832	Kijew, Kiev, Russia	2,326
1840	Kingston, Canada	1,108
1872	Klausenburg, Hungary	2,201
1544	Königsberg, Germany	1,084
1875	Kyoto, Japan	1,596
1890	Lausanne, Switzerland	724
1904	Leeds, England	1,161
1575	Leiden, Holland	1,435
1409	Leipzig, Saxony, Germany	4,148
1784	Lemberg, Austria	3,097
1808	Lille, France	1,560
....	Lille, France (Catholic University)	600
1903	Liverpool, England	1,188
1836	London, England	5,270
1905	London University College, England	914
1426	Löwen or Louvain, Belgium	1,402
1666	Lund, Sweden	874
1817	Lüttich or Liège, Belgium	1,425
1808	Lyons, France	2,783
1540	Macerata, Italy	357
1857	Madras, India	2,163
1508	Madrid, Spain	5,118
1880	Manchester, England	1,612
1527	Marburg, Germany	1,883
1854	Marseilles, France	515
1853	Melbourne, Australia	860
1838	Messina, Italy	570
1683	Modena, Italy	474
1876	Montevideo, Uruguay	530
1181	Montpellier, France	1,752
1821	Montreal, Canada (McGill University)	1,331
1852	Montreal, Canada (Laval University)	728
1755	Moscow, Russia	4,496
1472	Munich, Germany	6,009
1771	Münster, Germany	1,552
1572	Nancy, France	1,841
1224	Naples, Italy	5,386
1870	New Zealand	1,800
1880	Nottingham, England	1,900
1865	Odessa, Russia	1,714
1869	Otago, Dunedin, New Zealand	....
....	Ottawa, Canada (Roman Catholic)	500
....	Oviedo, Spain	900
1214	Oxford, England	3,742
1222	Padua, Italy	1,385
1779	Palermo, Sicily, Italy	1,094
1253	Paris	15,789
1025	Parma, Italy	695
1361	Pavia, Italy	1,516
1266	Perugia, Italy	305
1343	Pisa, Italy	1,083
1431	Poitiers, France	962
....	Prague, Austria (Bohemian University)	3,471
....	Prague, Austria (German University)	1,416
1882	Punjab-Lahore, India	1,178
1852	Quebec, Canada	359
....	Quito, Ecuador	216
1808	Rennes, France	1,498
1303	Rome, Italy	2,556
1582	Rome, Italy (Pontiff University)	1,030
1419	Rostock, Germany	696
1880	Royal University, Ireland	2,412
1411	St. Andrew's, Scotland	328
1572	St. Mark's, Peru	....
1819	St. Petersburg, Russia	3,753
1605	St. Thomas, Manila	1,200
1243	Salamanca, Spain	1,200
1743	Santiago, Chile	1,000
1474	Saragossa, Spain	1,180
1556	Sassari, Italy	199
1502	Sevilla, Spain	1,000
1905	Sheffield, England	2,120
1246-48	Siena, Italy	225
1888	Sophia, Bulgaria	943
1878	Stockholm, Sweden	365
1567	Strassburg, Germany	1,622
1850	Sydney, Australia	1,054
1868	Tokyo, Japan	4,801
1888	Tomsk, West Siberia	559
1827	Toronto, Canada (Univ. of Toronto)	2,547
1233	Toulouse, France	2,475
....	Trujillo, Peru	....
1477	Tübingen, Germany	1,727
1412	Turin, Italy	2,750
1477	Upsala, Sweden	1,835
1671	Urbino, Italy	267
1636	Utrecht, Holland	1,012
1500	Valencia, Spain	1,728
1346	Valladolid, Spain	4,586
1830	Victoria, Toronto, Canada	300
1880	Victoria, England	3,000
1897	Victoria Univ. Col., Wellington, N. Z.	....
1365	Vienna, Austria	7,360
1893	Wales, Great Britain	1,301
1816	Warsaw, Poland, Russia	1,485
1877	Winnipeg, Canada	335
1402	Würzburg, Germany	1,408
1832	Zürich, Switzerland	1,418

Public Education—Countries of the World.

Name of Country.	Number of Schools.				Number of Teachers.			Number of Pupils.			
	Grammar, Elementary Schools.	High, Gymnasia.	Academies, Private Schools.	Colleges, Universities.	Grammar, Elementary Schools.	High, Gymnasia.	Colleges, Universities.	Grammar, Elementary Schools.	High, Gymnasia.	Academies, Private Schools.	Colleges, Universities.
Argentine Republic	5,250	16	....	6	14,118	450	....	543,881	4,103	....	3,003
Austria	21,502	5,348	....	8	86,969	673	1,815	4,001,645	437,145	....	20,511
Belgium	9,969	4,244	295	4	....	....	....	1,132,894	234,107	....	3,990
Bolivia	710	18	....	17	1,126	126	65	48,560	2,530	....	688
Brazil	(a)	....	14	2	(a)	....	....	(a)	....	....	....
Chile	2,620	....	62	3	4,484	....	....	190,706	....	13,865	1,540
China	....	....	....	....	....	....	....	....	....	....	....
Colombia	(a)	....	....	3	(a)	....	....	(a)	....	....	....
Costa Rica	386	2	....	3	991	....	....	22,274	412	....	....
Cuba	1,936	....	....	1	3,593	....	....	143,085	....	....	600
Denmark	2,940	130	89	1	....	....	85	341,356	55,000	....	400
Ecuador	1,088	35	9	1	(b)1,498	(b)	32	(b)63,380	(b)	....	216
France	81,937	510	609	....	151,385	....	....	5,566,882	130,724	64,575	38,197
1 Algeria	1,456	19	....	1	2,769	....	....	151,105	5,506	....	1,184
2 French Congo	(c)53	....	....	....	....	....	....	(c)3,604	....	....	....
3 Madagascar	(b)590	(b)	....	....	(b)1,305	(b)	....	(b)48,804	(b)	....	....
4 Mayotte and the Comoro Islands	(b)3	(b)	....	....	(b)3	(b)	....	(b)78	(b)	....	....
5 Réunion	(b)161	(b)	....	....	(b)388	(b)	....	(b)16,827	(b)	....	....
6 French West Africa	(d)	....	....	....	(d)	....	....	(d)	....	....	....
7 Tunis	1,574	5	20	1	....	....	....	20,377	....	....	....
8 Guadeloupe	113	2	....	....	230	....	....	12,182	728	....	....
9 Guiana	24	....	1	....	....	....	....	2,500	....	....	....
10 Martinique	90	2	....	1	....	....	....	12,644	565	....	216
11 St. Pierre	6	....	3	....	19	....	....	451	....	300	....
12 New Caledonia	(e)	....	....	....	....	....	....	....	....	....	....
German Empire	59,991	1,904	427	21	146,540	....	3,257	8,966,107	....	....	46,455
1 Alsace-Lorraine	2,913	166	....	1	5,224	....	165	226,102	....	....	1,622
2 Baden	1,720	302	144	2	6,401	2,253	292	331,739	39,784	13,495	4,305
3 Bavaria	7,549	430	....	3	16,727	....	380	964,922	8,803	....	8,482
4 Bremen	63	....	....	....	684	....	....	31,534	....	....	....
5 Brunswick	453	....	....	....	1,293	....	....	81,396	....	....	....
6 Hamburg	222	15	76	....	3,339	....	....	115,629	8,867	18,441	....
7 Hesse	993	990	41	1	3,430	....	91	195,217	42,353	3,693	1,192
8 Lippe	128	....	....	....	261	....	....	23,895	....	....	....
9 Lübeck	52	9	4	....	346	....	....	12,109	4,603	1,030	....
10 Mecklenburg-Schwerin	1,242	74	71	1	....	....	64	94,816	7,813	4,845	696
11 Mecklenburg-Strelitz	233	....	....	....	382	....	....	16,057	....	....	....
12 Oldenburg	595	36	....	....	1,897	296	....	73,530	6,108	....	....
13 Prussia	38,048	1,574	1,089	10	136,810	21,886	1,761	6,176,645	360,532	111,501	23,102
14 Reuss, Elder Branch	60	....	....	....	181	....	....	13,206	....	....	....
15 Reuss, Younger Branch	117	....	....	....	337	....	....	21,702	....	....	....
16 Saxe-Altenburg	197	8	....	....	518	....	....	37,246	6,816	....	....
17 Saxe-Coburg-Gotha	244	....	....	....	704	....	....	39,422	....	....	....
18 Saxe-Meiningen	315	....	....	....	1,819	....	....	47,832	....	....	....
19 Saxe-Weimar	464	18	....	1	1,036	204	113	61,153	3,245	....	1,501
20 Saxony	4,329	95	3	1	....	....	233	872,120	30,127	1,610	4,148
21 Schaumburg-Lippe	44	....	....	....	77	....	....	7,648	....	....	....
22 Schwarzburg-Rudolstadt	138	....	....	....	265	....	....	16,222	....	....	....
23 Schwarzburg-Sondershausen	94	....	....	....	218	....	....	13,918	....	....	....
24 Waldeck	124	....	....	....	172	....	....	10,294	....	....	....
25 Württemberg	2,415	193	....	1	5,422	....	106	325,916	24,002	....	1,727
Greece	3,548	46	29	2	5,179	325	127	232,609	6,426	1,408	2,744
Guatemala	1,192	19	7	1	....	....	....	36,477	....	....	....
Haiti	400	5	....	....	....	....	....	....	....	....	....
Honduras	851	4	....	2	....	....	....	30,025	646	....	135
Hungary	19,064	1,073	....	62	39,957	12,037	968	2,217,975	219,665	....	13,172
Italy	70,495	1,203	762	21	79,121	....	....	3,267,254	150,828	30,127	23,337
Japan	27,993	5,325	....	2	115,985	16,917	444	5,482,544	388,959	....	6,317
Korea	(f)	....	....	....	....	....	....	....	....	....	....
Liberia	176	4	....	1	220	....	12	5,643	....	....	120
Mexico	11,475	101	....	....	(b)18,310	(b)	....	756,314	13,660	....	....
Montenegro	(g)	1	1	....	....	....	....	....	98	....	....
Netherlands (The)	4,942	382	....	(h)4	26,722	3,497	187	857,135	43,655	....	3,384
1 East Indies	(i)214	18	....	....	903	186	....	23,715	2,402	....	....
2 West Indies (a) Dutch Guiana (b) Curaçao	86	2	....	....	....	....	....	14,110	....	....	....
Nicaragua	323	....	....	12	....	....	631	17,803	....	....	....
Norway	8,725	92	103	1	....	....	....	359,581	16,305	4,856	1,470
Panama	(k)	....	....	....	....	....	....	....	....	....	....
Paraguay	400	....	(l)	1	700	....	15	25,000	(l)	....	205
Persia	(m)	....	....	....	....	....	....	....	....	....	....
Peru	1,871	(n)	(n)	....	2,165	....	....	104,970	....	....	....
Portugal	6,719	67	(o)	16	....	....	....	....	14,350	(o)	3,156
Roumania	4,264	(p)107	....	2	6,194	1,110	148	500,158	20,153	....	4,072
Russia	90,727	1,634	31	(q)29	204,736	....	....	5,515,185	434,480	....	23,886
Finland	2,477	(r)229	....	2	....	....	....	134,845	26,937	....	2,474
Salvador	600	20	....	....	....	....	....	30,177	....	....	....
Santo Domingo	(b)300	(b)	....	....	....	....	....	(b)10,000	(b)	....	....
Servia	1,267	28	A few	1	2,219	439	60	122,278	7,097	....	490
Siam	65	8	....	(s)2	....	....	....	7,855	1,004	....	177
Spain	31,521	(t)	(t)	9	....	....	391	1,961,694	....	....	16,000
Sweden	12,939	143	....	(u)2	18,805	....	....	762,397	28,826	....	2,709
Switzerland	5,527	(v)638	(v)	7	12,017	2,613	771	536,768	55,666	....	6,425

Public Education—Countries of the World.—Continued.

Name of Country.	Number of Schools.				Number of Teachers.			Number of Pupils.			
	Grammar, Elementary Schools.	High, Gymnasia.	Academies, Private Schools.	Colleges, Universities.	Grammar, Elementary Schools.	High, Gymnasia.	Colleges, Universities.	Grammar, Elementary Schools.	High, Gymnasia.	Academies, Private Schools.	Colleges, Universities.
Turkey	(*b*)36,230	(*b*)	(*b*)	3	....	....	....	1,331,200	....	....	480
1 Bulgaria	4,584	385	....	1	8,785	2,145	52	400,216	44,051	....	943
2 Crete	466	26	....	....	607	75	....	32,106	4,174	....	....
3 Egypt	10,000	(*w*)	....	(*w*)	....	....	....	200,000	....	....	....
United Kingdom											
1 Un. King.—Eng. & Wales	20,543	(*b*)688	(*b*)	79	164,456	....	....	6,054,073	115,594	....	21,248
2 Un. King.—Scotland	3,262	55	....	4		1,203	462	808,169	16,840	....	7,579
3 Un. King.—Ireland	8,602	267	....	2			197	728,176	10,866	....	3,501
4 Malta	(*b*)174	(*b*)	71	1				(*b*)20,041	(*b*)	3,322	196
5 Ceylon	(*b*)3,906	(*b*)	(*b*)	1				(*b*)276,691	(*b*)	(*b*)	104
6 Hongkong	(*b*)79	(*b*)	156	1				(*b*)5,755	(*b*)	4,052	....
7 India	(*b*)160,434	(*b*)	(*b*)	5				(*b*)5,242,041	(*b*)	(*b*)	7,247
8 Straits Settlements	(*b*)209	....		1				(*b*)21,334	(*b*)	....	....
9 Basutoland	(*b*)250	(*b*)		....				(*b*)12,275	(*b*)	....	....
10 Cape of Good Hope	(*b*)3,291	(*b*)		1				(*b*)171,021	(*b*)	....	590
11 Uganda Protectorate	(*b*)117	(*b*)		....				(*b*)12,560	(*b*)	....	....
12 Mauritius	....	29		....				18,726	659	....	....
13 Natal	490	8		....				25,926	360	3,300	....
14 Orange River Colony	(*x*)	....		....				....	....	....	
15 The Transvaal	711	....		(*y*)				46,445	1,896	....	
16 Southern Nigeria	....	....		....				(*b*)11,892	(*b*)	....	
17 W. Afric. Colonies	(*b*)252	(*b*)		1				(*b*)20,890	(*b*)	....	17
18 Bermudas	(*z*)27	....		....				(*z*)1,791	....	....	
19 Canada	(*b*)20,566	(*b*)		30	(*b*)31,001	(*b*)		(*b*)1,230,848	(*b*)	....	20,000
20 Falkland Islands	(*b*)5(*aa*)	(*b*)		....	....			(*b*)261	(*b*)	....	
21 Honduras, British	39	5		....	....			3,945	261	....	
22 Newfoundland & Labrador	881	....		3	....	....		44,105	....	....	991
23 West Indies											
(*a*) Bahamas	87	....	10	....	....	....		9,146	....	326	
(*b*) Barbados	169	5	....	1	....	....		14,648	235	....	15
(*c*) Jamaica	687	5	....	....	....	....		84,450	....	....	176
(*d*) Leeward Islands	115	6	....	....	....	....		12,143	199	....	
(*e*) Trinidad	250	....	....	2	....	....		41,110	....	....	427
(*f*) Windward Islands	46	....	....	....	....	....		10,124	....	....	
24 New South Wales	(*b*)2,885	(*b*)	852	(*bb*)1	(*b*)5,563	(*b*)	84	(*b*)237,493	(*b*)	58,707	1,054
25 Victoria	1,953	(*cc*)17	757	3	4,598	158		229,179	3,506	48,732	5,418
26 Queensland	1,089	10	167	17	2,401	81		69,771	877	11,956	4,280
27 South Australia	(*b*)708	(*b*)	217	1	....	....		(*b*)62,721	(*b*)	10,570	
28 West Australia	(*b*)376	(*b*)	108	....	....	....		(*b*)28,927	(*b*)	7,515	
29 Tasmania	523	(*dd*)	....	21	....	....		32,882	....	....	2,092
30 New Zealand	1,947	(*ee*)28	314	4	4,077	249	64	143,476	4,270	17,230	1,332
31 Fiji	(*b*)1,305	(*b*)	....	....	....	....	....	(*b*)19,433	(*b*)	....	
United States	257,729	8,031	1,529	493	435,219	30,844	12,278	16,641,970	722,692	101,755	130,078
1 Alaska	(*b*)52	(*b*)	....	....	(*b*)62	(*b*)	....	(*b*)3,080	(*b*)	....	
2 Hawaii	(*b*)204	(*b*)	....	....	(*b*)687	(*b*)	....	(*b*)20,406	(*b*)	....	
3 Porto Rico	1,074	1	....	....	1,204	....	....	41,802	....	....	
4 Philippines	(*b*)6,941	(*b*)	....	....	....	....	....	(*b*)500,000	(*b*)	....	
Uruguay	908	1	....	1	1,920	....	112	74,870	2,591	....	530
Venezuela	1,330		....	35	....	....	....	....	....		

†Total number of pupils, 218,941. (*a*) Primary education not compulsory. (*b*) This number gives the total statistics. (*c*) Mission schools. (*d*) A uniform system was established Nov. 24, 1903. About 10,000 pupils are receiving instruction. (*e*) In 1906, there were 40 primary schools with 1,974 pupils. (*f*) The elementary school system is being revised and schools established under State supervision. There is an English school at Seoul with 100 pupils. (*g*) Schools for elementary education supported by Government. Education is compulsory and free. (*h*) There are many special schools and a private university with 168 students. (*i*) 31 for girls only. 1832 elementary schools for natives with 227,080 pupils. (*k*) Education of a primary character, but elementary, high, normal, art and trades, commerce, and language schools, also an academy of music has been formed. (*l*) Private schools are subsidized by the Council of Education. There are several Protestant schools, and an agricultural school. (*m*) Most of the population are taught to read the Koran. There are a number of elementary and secondary schools, a polytechnic and two military schools, and a few colleges. (*n*) The Government maintains public high schools. There are a few private high schools, a central university, a school of mines and civil engineering. (*o*) There are a large number of private secondary schools. (*p*) 11 normal schools, 1489 pupils, besides schools in agriculture, engineering, etc. (*q*) There are besides a Catholic college at St. Petersburg, 6 medical, 3 juridical, and 5 philological schools, 1 archaeological, and 13 technical institutes, and 1 typographic, and an agricultural and engineering school. (*r*) Including navigation, industrial, agriculture, dairy, cattle managers, and horticultural schools. (*s*) There are a medical, a civil service, a military, a naval and survey residential college and law, gendarmerie and police non-residential schools. (*t*) Secondary education is conducted in "institutions," one in every province, besides many private schools. (*u*) There are a state faculty of medicine, (226 students) and a private judicial faculty in Stockholm, and private philosophical faculties in Stockholm and Göteborg. (*v*) Improvement schools (54,289 pupils), girls' schools (2076), gymnasia (6907), 22 commercial with 2,485, 82 complementary commercial with 9,435, 318 technical, 275 domestic economy schools, agricultural school with 809, 1 horticultural with 62, 10 winter agricultural, with 664, 6 viticultural with 17, and 3 dairy schools with 74. (*w*) There are 16 technical schools with 3,972 pupils, and 11 professional colleges with 1,475. (*x*) Government schools are attended by 17,700 pupils. A normal school and Grey College at Bloemfontein. (*y*) There is a Transvaal University College, affording general and technical work. (*z*) 3 garrison, 2 naval, 20 other primary and 5 secondary schools, receiving no Government grant. 3 Bermuda Rhodes scholars attend Oxford. (*aa*) Government camp schools have 137 pupils, and 1 private school has 32 pupils. (*bb*) Besides the technical colleges with 15,594 pupils, there are the Sydney Grammar School with 657, 1 reformatory and 2 industrial schools with 568. (*cc*) Secondary education is under control of private persons. These 17 schools are technical in character. (*dd*) 2 technical schools have 567 pupils and 2 schools of mines have 119. (*ee*) There are 7 schools of mines, 4 normal, 5 central schools of art, 11 industrial schools.

LIBRARIES.

Ancient Libraries.—While the ancient Egyptians are known to have made collections of their writings, no remains of their libraries have been found, though carved inscriptions persist in abundance. In ancient Babylonia libraries consisting of clay tablets inscribed with cuneiform characters were commonly preserved in their temples; and some of these, such as the recently discovered collection in the Temple of Bel, in Nippur, which was destroyed in 1782 B. C., have persisted to the present day. The ancient Greeks maintained private collections of writings, and, according to Pliny, the first Roman public library was established in 39. The most famous of all ancient collections was the Alexandrine library, which was founded about 300 B. C. by Ptolemy Soter, and which contained about 700,000 manuscript rolls at the time of Cæsar's visit (43 B. C.).

EARLY CHRISTIAN LIBRARIES were founded by Alexander, the Bishop, about 250, and by St. Jerome, St. Augustine, and St. Pamphilus. Constantine founded a library at Constantinople in 336, which became large and famous. The Crusaders caused its partial destruction, which was made complete by the Moslem conquest.

MEDIAEVAL LIBRARIES.—Throughout the Middle Ages, collections of books were preserved in monasteries, particularly those of the Benedictines. Many noted libraries had their origin in these collections. England is indebted to the Benedictines for her first library at Canterbury, which dates from 596, also for St. Peter's at York, St. Cuthbert's at Durham, those at Bury St. Edmunds, St. Albans, and others.

RENAISSANCE LIBRARIES.—The revival of learning following the dispersion of Greek scholars throughout Europe after the fall of Constantinople, and the invention of printing, created a new era in the history of libraries. While noted libraries such as Palencia, Spain (1212), Salamanca (1220), the University of Oxford (about 1230), the University of Prague (1348), and Heidelberg (1386), were founded previous to 1500, the great libraries of modern times have been established and developed since that date.

MODERN LIBRARIES.—Although libraries have steadily increased since the dissemination of printed books, their greatest development has taken place during the last century. The National Library, Paris, now the most extensive in the world, contained only 250,000 volumes in 1800. The British Museum Library ranks second, yet as late as 1837 its collections numbered only 250,000 printed books. The Imperial Library, St. Petersburg, which stands third, dates its great growth from 1795. The Library of Congress, ranking fourth, founded in 1800, was reduced by fire to only 20,000 volumes in 1851.

Great libraries have been developed in connection with leading universities,—notably those of Oxford and Cambridge in England, Paris, Vienna, Strassburg, Leipzig, Göttingen, Munich, Tübingen, and Heidelberg on the continent, and Harvard, Yale, Chicago, and Columbia in the United States, each of which contains more than 400,000 volumes. Among city libraries that of Boston (1852) has been one of the most noted and successful, ranking among the first ten libraries of the world, and, since 1895, the new Public Library of New York, formed by the consolidation of older libraries, has risen to foremost rank.

LEADING FOREIGN LIBRARIES

Founded	City and Country	Library	Volumes (Minerva 1907-8)
1902	Aarhuus, Denmark	City	200,000
1754	Amsterdam, Netherlands	University	500,000
1837	Athens, Greece	University	200,000
1537	Augsburg, Bavaria	City	200,000
1611	Bamberg, Bavaria	Royal Public	300,000
1460	Basel, Switzerland	Public	250,000
1661	Berlin, Prussia	Royal	1,230,000
1861	Birmingham, England	Birmingham Free	312,870
1712	Bologna, Italy	Royal University	255,000
1818	Bonn, Prussia	University	355,000
1738	Bordeaux, France	Public	200,000
1702	Breslau, Prussia	Royal University	350,000
1837	Brussels, Belgium	Royal	600,000
1802	Budapest, Hungary	Magyar Nemzeti Museum	400,000
1635	Budapest, Hungary	University	259,524
1229	Cambridge, England	Cambridge Univ.	550,000
1811	Christiania, Norway	Royal University	420,000
1665	Copenhagen, Denmark	Royal	720,000
1482	Copenhagen, Denmark	University	325,000
1364	Cracow, Galicia	University	384,000
1817	Darmstadt, Hesse	Royal Grand Ducal	490,032
1802	Dorpat, Russia	Imperial Univ.	228,922
1580	Dresden, Saxony	Royal Public	490,000
1601	Dublin, Ireland	Trinity College	297,009
1682	Edinburgh, Scotland	Advocates'	527,000
1583	Edinburgh, Scotland	University	230,000
1743	Erlangen, Bavaria	Royal University	237,973
1671	Fermo, Italy	Public	212,397
1714	Florence, Italy	Royal Central Nat'l	544,021
1484	Frankfort, Prussia	City	322,901
1457	Freiburg, Baden	Grand Ducal Baden University	270,000
1816	Ghent, Belgium	University	350,000
1450	Glasgow, Scotland	University	200,000
1737	Göttingen, Prussia	University	536,018
1798	Hague, The, Netherlands	Royal	500,000
1696	Halle, Prussia	University	228,000
1529	Hamburg, Germany	City	359,000
1650	Hanover, Prussia	Royal	200,000
1386	Heidelberg, Baden	Grand Ducal Univ.	400,000
1558	Jena, Saxe-Weimar	Grand Ducal Univ.	250,000
1804	Kasan, Russia	Imperial Univ.	247,046
1665	Kiel, Prussia	Royal University	263,093
1534	Königsberg, Prussia	Royal University	278,700
1536	Lausanne, Switzerland	Cantonale	280,000
1870	Leeds, England	Central Public Free	266,624
1409	Leipzig, Saxony	University	550,000
1796	Lisbon, Portugal	National	400,000
1850	Liverpool, England	Public	271,721
1753	London, England	British Museum	2,000,000
1840	London, England	London	220,000
1794	Lucca, Italy	Government	212,426
1711	Madrid, Spain	National	600,000
1508	Madrid, Spain	University	204,000
1804	Mainz, Hesse	City	200,000
1852	Manchester, England	Public Free	369,833
1770	Milan, Italy	National	238,271
1828	Moscow, Russia	Public	800,000
1756	Moscow, Russia	Imperial Univ.	314,458
1550	Munich, Bavaria	Royal	1,100,000
1472	Munich, Bavaria	University	500,000
1734	Naples, Italy	Royal National	385,670
1865	Odessa, Russia	Imperial Univ.	250,110
1815	Ottawa, Canada	Parliament	300,000
1602	Oxford, England	Bodleian	500,000
1760	Palermo, Italy	Public	216,000
1367	Paris, France	National	3,000,000
1762	Paris, France	University	477,590
1781	Paris, France	Arsenal	454,000
1624	Paris, France	St. Genevieve	340,000
1643	Paris, France	Mazarin	250,000
1769	Parma, Italy	Royal	303,836
1348	Prague, Bohemia	Royal University	340,200
1889	Prague, Bohemia	Museum	200,000
1807	Rio de Janeiro, Brazil	National	275,766
1875	Rome, Italy	National Central	400,000
1450	Rome, Italy	Vatican Apostolic	250,000
1419	Rostock, Mecklenburg	University	340,000
1714	St. Petersburg, Russia	Imperial Public	1,594,240
1728	St. Petersburg, Russia	Imperial Academy	400,000
1819	St. Petersburg, Russia	Imperial Univ.	366,800
1773	St. Petersburg, Russia	Gornyj Institute	250,000
17—	Schwerin, Mecklenburg	Grand Ducal	225,007
1585	Stockholm, Sweden	Royal	314,902
1870	Strassburg, Alsace	University	898,000
1765	Stuttgart, Württemberg	Royal	531,000
1872	Tokio, Japan	Imperial Univ.	358,895
1868	Tokio, Japan	Imperial	220,000
1880	Tomsk, Siberia	University	200,000
1477	Tübingen, Württemberg	Royal University	475,000
1720	Turin, Italy	National	350,000
1620	Upsala, Sweden	Royal University	315,654
1582	Utrecht, Netherlands	Rijks University	250,000
1468	Venice, Italy	National Marciana	415,752
1440	Vienna, Austria	Imperial	900,000
1775	Vienna, Austria	University	707,188
....	Vilna, Russia	Public	200,000
1817	Warsaw, Russia	Imperial Univ.	545,205
1650	Weimar, Saxe-Weimar	Grand Ducal	270,000
1568	Wolfenbüttel, Brunswick	Ducal	300,000
1402	Würzburg, Bavaria	Royal University	370,000

LARGEST LIBRARIES OF THE UNITED STATES.

When Founded.	CITY.	LIBRARY.	Number of Volumes.
1818	Albany	New York State Library	430,831
1886	Allegheny	Carnegie Free Library	57,340
1821	Amherst	College Library	80,000
1826	Annapolis	Maryland State Library	80,000
1841	Ann Arbor	University of Michigan General Library	241,128
1820	Augusta	Maine State Library	97,000
1882	Baltimore	Enoch Pratt Free Library	244,345
1876	Baltimore	Johns Hopkins University Library	136,000
1857	Baltimore	Library of the Peabody Institute	160,626
1887	Baltimore	New Mercantile Library	81,000
1883	Bangor	Public Library	61,746
1873	Berkeley	Univ. of Cal. Library	173,000
1820	Bloomington	Indiana Univ. Library	59,800
1807	Boston	Boston Athenæum	220,000
1853	Boston	Congregational Library	54,977
1861	Boston	Mass. Institute of Technology Library	78,161
1852	Boston	Public Library	903,349
1826	Boston	State Library of Mass.	138,825
1857	Brookline	Public Library	64,803
1887	Brooklyn	Free Library of Pratt Institute	92,000
1896	Brooklyn	Public Library	510,514
1794	Brunswick	Bowdoin College Library	91,546
1885	Bryn Mawr	Bryn Mawr College Library	55,000
1836	Buffalo	Public Library	235,530
1791	Burlington	University of Vermont and State Agr. College	76,412
1807	Cambridge	Andover Theological Seminary	60,000
1857	Cambridge	Cambridge Public Library	73,393
1638	Cambridge	Harvard Univ. Library	815,636
1825	Charlottesville	Univ. of Virginia Library	70,000
1894	Chicago	The John Crerar Library	206,347
1887	Chicago	Newberry Library	283,458
1872	Chicago	Public Library	339,282
1857	Chicago	University of Chicago	473,175
1855	Cincinnati	Public Library	377,813
1819	Cincinnati	Univ. of Cincinnati Lib.	100,000
1835	Cincinnati	Young Men's Mercantile Library	77,000
1826	Cleveland	Adelbert College Library	62,000
1881	Cleveland	Case School of Applied Science	64,000
1869	Cleveland	Public Library	291,882
1826	Cleveland	Western Reserve University Library	96,868
1812	Clinton	Hamilton College Library	50,000
1839	Columbia	University of Missouri	88,063
1817	Columbus	Ohio State Library	102,374
1870	Columbus	Ohio State Univ. Library	73,633
1820	Concord	New Hamp. State Library	123,915
1860	Dayton, Ohio	Dayton Public Library and Museum	70,000
1844	Delaware	Ohio Wesleyan University Library	60,000
1886	Denver	Public Library of the City of Denver	98,040
1838	Des Moines	Iowa State Library	89,902
1865	Detroit	Public Library	217,502
1851	Evanston	Northwestern Univ. Lib.	126,051
1861	Fall River	Public Library	78,000
1821	Frankfort	State Library of Kentucky	100,000
1819	Hamilton	Colgate Univ. Library	51,400
1779	Hanover	Dartmouth College	105,000
1790	Harrisburg	State Library of Pennsylvania	134,000
1834	Hartford	Case Memorial Library	87,492
1839	Hartford	Public Library	92,000
1823	Hartford	Trinity College Library	56,000
1858	Hartford	Watkinson Library of Reference	70,542
1873	Indianapolis	Public Library	121,629
1847	Iowa City	State Univ. of Iowa Lib.	165,000
1865	Ithaca	Cornell University Library	353,638
1838	Jackson, Miss.	Mississippi State Library	89,000
1889	Jersey City	Free Public Library	101,852
1828	Lansing	Michigan State Library	160,000
1864	Lawrence	Univ. of Kansas Library	60,000
1869	Lincoln	Univ. of Neb. Library	82,000
1846	Little Rock	Arkansas State Library	51,000
1872	Los Angeles	Public Library	105,269
1844	Lowell	City Library	71,355
1862	Lynn	Free Public Library	74,049
1849	Madison	Univ. of Wis. Library	135,000
1852	Medford	Tufts College Library	65,000
1831	Middletown	Wesleyan Univ. Library	80,000
1878	Milwaukee	Public Library	172,865
1889	Minneapolis	Public Library	160,000
1851	Minneapolis	Univ. of Minn. Library	118,000
1888	Newark	Free Public Library	111,916
1852	New Bedford	Free Public Library	96,000
1766	New Brunsw'k	Rutgers College Library	57,025
1701	New Haven	Yale University Library	550,000
1889	New Orleans	Howard Memorial Library	52,000
1896	New Orleans	Public Library	70,000
1754	New York City	Columbia Univ. Library	420,000
1820	New York City	Free Library	115,700
1828	New York City	Library of the New York Law Institute	65,777
1820	New York City	Mercantile Library	235,947
1754	New York City	N. Y. Society Library	100,000
1895	New York City	Public Library	1,267,154
1836	New York City	Union Theological Seminary Library	85,867
1831	New York City	University Library	92,000
1852	New York City	Y. M. C. A. Library	55,454
1894	Northampton	Forbes Library	101,460
1872	Notre Dame	Lemonnier Library	65,000
1833	Oberlin	Oberlin College Library	177,070
1872	Omaha	Public Library	71,563
1891	Palo Alto	Leland Stanford, Jr., University Library	107,000
1880	Peoria	Public Library	93,143
1894	Philadelphia	Free Library	310,630
1731	Philadelphia	Library Company	231,184
1821	Philadelphia	Mercantile Library	200,000
1740	Philadelphia	Univ. of Penn. Library	285,000
1895	Pittsburg	Carnegie Library	254,562
1867	Portland, Me.	Public Library	60,522
1864	Portland, Ore.	Library Asso. of Portland	60,645
1861	Poughkeepsie	Vassar College Library	63,000
1746	Princeton	Princeton Univ. Library	342,000
1767	Providence	Brown University Library	150,000
1753	Providence	Library of the Providence Athenaeum	68,363
1874	Providence	Public Library	123,895
1823	Richmond	Virginia State Library	160,000
1884	Rochester	Reynolds Library	60,000
1850	Sacramento	California State Library	138,136
1865	St. Louis	Public Library	223,000
1846	St. Louis	St. Louis Mercantile Library Association	129,731
1853	St. Louis	Washington Univ. Library	60,000
1848	Salem	Essex Institute Library	95,378
1879	San Francisco	Sutro Library	106,300
1877	So. Bethlehem	Library of Lehigh Univ.	87,500
1818	Springfield, Ill.	Illinois State Library	50,000
1857	Springf'ld, Ms.	City Library Association	152,345
1872	Syracuse	Syracuse Univ. Library	71,422
1796	Trenton	New Jersey State Library	73,558
1889	Washington	Cath. Univ. of Am. Lib.	55,365
1800	Washington	Library of Congress	1,433,848
1789	Washington	Library of the Department of State	65,000
1789	Washington	Georgetown Univ. Library	98,000
1789	Washington	Library of House of Representatives	125,000
1865	Washington	Library of the Surgeon General's Office	162,295
1898	Washington	Public Library of the District of Columbia	92,937
1789	Washington	Riggs Memorial Library	91,129
1836	Washington	Scientific Library of Patent Office	84,386
1846	Washington	Smithsonian Inst. Library	180,000
1868	Washington	U. S. Bureau of Education Library	82,000
1882	Washington	U. S Geological Survey Library	65,000
1869	Washington	U. S. Senate Library	190,000
1870	Waterbury	Silas Bronson Library	69,664
1875	Wellesley	Wellesley College Library	63,088
1802	West Point	Library United States Military Academy	70,000
1793	Williamstown	Williams College Library	62,080
1894	Wilmington	Wilmington Inst. Free Lib.	59,096
1869	Woodst'k, Md.	Woodst'k College Library	75,000
1812	Worcester	American Antiquarian Society Library	130,000
1887	Worcester	Clark University Library	50,000
1859	Worcester	Free Public Library	160,000

MUSEUMS.

History.—A museum was originally a place sacred to the Muses, but later the name was used to designate institutions for the study of art or philosophy, the earliest being the celebrated museum of Ptolemy Soter at Alexandria. The use of the name to denote institutions preserving and exhibiting works of art and specimens of natural history is modern as are the institutions themselves. Some maintain that the modern museum has been evolved from the ancient custom of placing votive offerings in temples, and from the mediæval method of preserving sacred and historical objects in monasteries and churches. In this connection it is interesting to note that the ancient navigator Hanno, upon returning from a long voyage, presented skins of animals now supposed to have been gorillas to the Temple of Astarte in Carthage where they remained until the Romans destroyed the city.

Museums were first formed by rulers and by the rich, usually without system or purpose, chiefly to gratify curiosity. At a much later period scientific men began to form collections for study, and from combinations of these have arisen most of the great modern museums.

Art Museums date from the fourteenth century in Italy, where the collections of Cosimo de' Medici in later years grew into the celebrated treasures of the Uffizi Gallery, the Pitti Palace, and the National Museum at Florence. The vast art wealth of the Vatican in Rome had its beginnings in the collections made by Pope Julius II. (1503-1513). Between 1553 and 1586 collections were established in the Zwinger at Dresden, resulting later in the foundation of the Dresden Museum (1711-1722).

The transformation of the old feudal castle of the Louvre at Paris into a modern palace began in 1546, and its slowly completed galleries became repositories of the royal treasures of art, which, in 1710, contained over 2,400 paintings. In 1793 the National Museum was opened at Louvre, composed very largely of these royal collections, and in 1818 the National Museum of the Luxembourg, whose foundation dates from 1750, was reorganized and devoted to contemporary art. The Hermitage Gallery in the Winter Palace at St. Petersburg was built during the reign of Catherine II. (1765-1796). The National Gallery in London, which had its beginnings in collections made about 1820, was opened in 1838. Other noted museums were established at this time. At Munich the Glyptothek was founded in 1830 and the Pinacothek was completed in 1836. At Berlin the Royal Museum was organized in 1830, and the City Museum of Leipzig dates from the same year.

In the United States, the Philadelphia Academy of Fine Arts, founded in 1805, was the first institution to maintain a gallery and a school of instruction—all of the large museums of art being established during the last three decades of the nineteenth century: Boston and New York in 1870, Chicago in 1879, Cincinnati in 1881, the Corcoran Gallery in Washington in 1894, and the Carnegie Museum in Pittsburg in 1896.

Natural History Museums are, on the whole, a much later development, though some cabinets of natural objects were of early foundation; those of the Zwinger in Dresden, dating from 1553 to 1582, became organized about 1720 as the Dresden Museum, which is now one of the finest in Europe. The famous Jardin des Plantes in Paris, founded in 1626, early contained zoölogical collections which have since been developed into the most noteworthy natural science museum in France. In 1667 Elias Ashmole began the collections which in time became the Ashmolean Museum at Oxford, while the British Museum was founded in 1753 upon the collections of Sir Hans Sloane. For a full century these grew slowly, being little known to the public, and comparatively few others were established. However, during the last 60 years since museums have become inspirational in function, in addition to their primitive use for investigation and instruction, general interest in them has increased amazingly, and in England and America in particular, great national expositions or world's fairs have been factors of notable importance in establishing new ones. The Victoria and Albert Museum at South Kensington, London, was the direct outcome of the World's Fair of 1851, and a similar result followed the Glasgow Exposition.

In the United States, the earliest noteworthy endeavor to found a general museum was that of C. W. Peale, who opened the Philadelphia Museum in 1785, followed by similar attempts in other cities, none of which was permanent. In 1808 Silliman procured a cabinet of minerals for Yale College, an acquisition unique in its time and the forerunner of the magnificent collections now in possession of the great universities. The State Cabinet of specimens illustrating geology, botany, and entomology at Albany dates from 1836. The Smithsonian Institution became the repository of government collections in 1846. The now world-famous Museum of Comparative Zoölogy at Cambridge was established in 1859, largely through the efforts of Louis Agassiz. The American Museum of Natural History, New York, was organized in 1869, and as a result of the interest aroused by the Centennial Exhibition, the National Museum was founded at Washington in 1876. The Field Columbian Museum of Chicago, established in 1893, owes its origin to the World's Columbian Exposition of that year, and at the close of the "Midwinter Exposition" in 1894, a similar institution was organized in Golden Gate Park, San Francisco. The Carnegie Institution at Pittsburg, containing a museum, was completed in 1895. Since 1870 many states, cities, universities, colleges, and natural history societies have founded museums, and, while not so numerous as libraries, they are considered necessary adjuncts of every well equipped college or university, and every section of the country now possesses museums of more or less importance.

Number of Museums.—In Germany, which possesses nearly 500 museums, about 150 are devoted to natural history. In France the natural history museums number about 300, and in England there are 250. Of the list of some 250 natural history museums, as compared to about 8,000 libraries in the United States, 175 belong to schools and universities, 30 are maintained by learned societies, 30 are state museums, and 15 are supported by municipal and privately contributed funds. New York leads, with over 30 natural history museums; Pennsylvania follows, with about 20; Massachusetts has 17; Illinois, 15; Ohio, 14; and California, 10.

Character and Educational Value.—The scope of modern museums has been expanded far beyond the restricted groups of art and natural history objects of the early cabinets. Museums of art, besides painting and sculpture, now include antiquities, ceramics, glasses, porcelains, gems, fabrics, metal work, and numerous other collections. The modern natural history museums embrace a vast range of systematized material—palaeontological, geological, mineralogical, archaeological, ethnological, and anthropological, in addition to the zoölogical and botanical collections of the early museums. Besides there are also historical, military, clerical, technological, commercial, and educational museums. While the natural science and other collections of colleges, universities, and learned societies are chiefly utilized by students for instruction and investigation, and are made use of only to a limited degree in public education, museums in some of the larger cities have contributed extensively to public instruction, notably through popular lectures, traveling and loan exhibits, journals, bulletins, and in various other ways. The National Museum at Washington gives instructive special exhibits of remains of prehistoric culture, aboriginal modes of life, and the arts, industries, and occupations of various native and foreign races, and also loans duplicate collections for exhibition elsewhere. At the American Museum of Natural History of New York City much emphasis is laid upon educational extension, which is promoted by free public lectures on travel, natural science, and geography, and special Saturday lectures are given for the benefit of teachers, who are also granted the use of large series of lantern slides and other materials for use in giving lectures to their own students. Prepared sets of birds, insects, and other animals are loaned to schools, and lecture materials are distributed through the Department of Public Instruction. The Field Columbian Museum gives a series of popular lectures each year and publishes many scientific contributions. These, and similar forms of educational extension, are being everywhere rapidly developed, and are factors of increasing importance in public instruction. Technological museums display raw materials of use in the industrial arts and the several stages during manufacture. Commercial museums advance the interests of trade by exhibits of products, raw and finished, and supply data on prices, costs, and the needs of other countries.

DICTIONARY OF NOTED EDUCATORS.

ABBOTT, EDWIN (1838-). A celebrated English Shakespearean scholar and theologian; assistant master in King Edward's School in Birmingham; head master of the City of London School, which he made one of the best day schools in London (1865-1880); his works include the well-known *Shakespearean Grammar*.

ABELARD, PIERRE (1079-1142). The boldest thinker of the twelfth century; was born in France. He wandered about, seeking masters and opponents, and by this method of controversy did more than any one else to increase the love of study and intellectual pursuit in Paris. Everything he did then caused adverse criticism, but his example as an independent teacher led to the founding of schools and universities.

ADAMS, HENRY CARTER (1851-). Born in Iowa; graduated at Iowa College; has been lecturer at Cornell, University of Michigan, and Johns Hopkins, and since 1887, professor of political economy and finance at the University of Michigan; is statistician of the Interstate Commerce Commission, and president of the Economic Association.

ADLER, FELIX (1851-). German-American educator and reformer; professor of Hebrew at Cornell University (1874), and in 1876 founded Society of Ethical Culture. His principal literary works are *Creed and Deed* and *The Education of Children*.

AGRICOLA, RUDOLPH (1443-1485). A distinguished Dutch humanist; educated at the Universities of Louvain and Paris, and studied in Italy. After 1482 he was very influential in promoting the popularity of Greek and Roman literature. He was a forerunner of Erasmus. His most important work is *De Inventione Dialectica*.

ALBERTUS, MAGNUS, COUNT OF BOLLSTADT (1193-1280). A Dominican friar; was a celebrated teacher of science, theology, and philosophy. He received a bishopric, but retired to a convent in Cologne to devote himself to literary pursuits. He wrote a number of works, principally on *Aristotle*, the best *Summa Theologiae* and *Summa de Creaturis*.

ALCOTT, AMOS BRONSON (1799-1888). An American lecturer. In 1828 he became an educational reformer, establishing a school in Boston which attracted much attention by the novelty of the methods used. His teaching was largely by the conversational method, but he met with so much opposition that he gave up the school and removed to Concord, where he promulgated his views on education, society, civics, and theology, through lectures in Boston and vicinity. He tried to found a community in Harvard, Mass. He published *Concord Days, Table Talk, Sonnets and Canzonets* and an *Essay on R. W. Emerson*.

ALCUIN or **FLACCUS ALBINUS** (735-804). The most distinguished scholar of the eighth century, was an Englishman. Charlemagne made his acquaintance, invited him to his court, himself became his pupil, and established the Palatine School at his court, committing its supervision to Alcuin. Alcuin retired to the abbey of St. Martin in Tours, in 796, teaching clerics and the laity alike, for the love of it. He left many copies of the new books of that time, besides numerous theological writings, works of his own. He was the educational light of the age of Charlemagne.

ALDERMAN, EDWIN ANDERSON (1861-). President of the University of Virginia; born in Wilmington, N. C.; superintendent of Goldsboro, N. C., schools; professor of English in the State Normal College; professor of pedagogy in, and later president of, the University of North Carolina; president of Tulane University; author of several historical books.

ALLEN, WILLIAM (1784-1868). An American author; born at Pittsfield, Mass. He prepared the *American Biographical and Historical Dictionary*, the first work of general biography written in the United States. The first edition contained but 700 names; the third, published in 1857, contained over 7,000. He was president of Dartmouth College (1817-1820), and of Bowdoin (1820-1850).

ANDREWS, ELISHA BENJAMIN (1844-). A native of Hinsdale, N. H. He was successively pastor of a Baptist Church; president of Denison University; professor of homiletics in Newton, of history and political economy at Brown University and later at Cornell; was president of Brown University (1889-1898); was superintendent of the Chicago schools for two years. Since then he was chancellor of Nebraska University until he resigned in 1908. He has published several books, among them *Institutes of Constitutional History, An Honest Dollar, Wealth and Moral Law*, and *History of the United States in Our Own Time*.

ANGELL, JAMES BURRILL (1829-). Born in Scituate, R. I.; professor of modern languages at Brown; editor of the Providence *Journal* for several years; president of the University of Vermont, and in 1871 was president of Michigan University. He has twice had leave of absence to accept important diplomatic missions, first to China to procure a revision of treaties between that country and the United States, second to Turkey on a similar mission. He was appointed to help arrange a treaty with Great Britain upon the fisheries questions. He is regent of the Smithsonian Institution. He has written *Progress in International Law* and *The Higher Education*.

ANTHON, CHARLES, LL.D. (1797-1867). Classical scholar and teacher; born in New York City. Served as tutor and professor of Greek and Latin for nearly fifty years in Columbia College. He is chiefly remembered by his annotated editions of numerous classical authors, long used here and in England as school and college text-books. He published also a new edition of Lemprière's *Classical Dictionary* and a dictionary of Greek and Roman antiquities.

APGAR, AUSTIN CRAIG (1838-). Born at Peapack, N. J., and was graduated at the New Jersey State Normal School, where he now teaches. He is the author of *Geographical Handbook, Geographical Drawing Book, Trees of the Northern United States*, and *Birds of the United States*.

AQUAVIVA, CLAUDIUS (1543-1615). An Italian, became the head of the order of Jesuits at the age of 38, and was chiefly responsible for its organization. In 1584 he appointed a commission of six Jesuits to frame rules for regulating the studies of the order. The result, after revision and approval by Aquaviva, was *Ratio Atque Institutio Studiorum Societatis Jesu*, a famous pedagogical book.

AQUINAS, THOMAS (1225-1274). Born of a noble Italian family, encountered the strongest opposition when he entered the order of the Dominicans. He became a public teacher at Paris until Pope Urban called him to teach philosophy in Italy. He declined an archbishopric to devote himself to study and lecturing. He was called the "Father of Moral Philosophy," and his *Summa Theologiae* is one of the first attempts at a complete theological system.

ARNOLD, SARAH LOUISE (1859-). Born in Abington, Mass. She taught in several states, and then became successively principal of the training school in Saratoga, N. Y.; supervisor of schools in Minneapolis and Boston; dean of Simmons College since 1902; author of *Waymarks for Teachers, Stepping Stones to Literature, Reading—How to Teach It*, and *The Mother Tongue*.

ARNOLD, THOMAS (1795-1842). The celebrated head master of Rugby; born on the Isle of Wight. His success was due to his endeavor to apply the principles of Christianity to school life. His literary fame rests upon his *History of Rome*.

ASCHAM, ROGER (1515-1568). Born in Yorkshire, Eng. Having pursued the study of the classics, especially Greek, with great ardor, he was appointed by the University to read Greek lectures. In 1548 became the tutor of the Princess Elizabeth in languages; was Queen Mary's Latin secretary, and Elizabeth retained him as tutor and secretary until his death. His treatise on classical education, *The Schoolmaster*, was published in 1570.

AVERY, ELROY McKENDREE (1844-) Author; born in Michigan; principal of high and normal schools, but his chief educational work has been as the author of a series of text-books on physics and chemistry which are used in the public schools throughout the country. He is writing a *History of the United States and its People*, to be completed in 15 volumes.

BACON, FRANCIS (BARON VERULAM) (1561-1626). A celebrated English philosopher. He was the first of his time to make the method of induction the object of investigation, and began the reform of existing sciences and the harmonizing of all knowledge. By his *Essays, Advancement of Learning*, and *Novum Organum*, he directed the attention of learned men to the reform of school methods. He exerted a wonderful influence on the scientific thought and teaching of the

European scholars who succeeded him. (See ENGLISH LITERATURE.)

BACON, ROGER (1214-1294). An English monk and philosopher; born at Ilchester, Eng. In his *Opus Majus*, an encyclopedia of all sciences, grammar, logic, mathematics, physics, and moral philosophy, he shows the need of different methods of study in language and nature. He made remarkable chemical discoveries, invented the magnifying glass, and rectified the calendar.

BAILEY, HENRY TURNER (1865-). An American art teacher, lecturer, and author; born at Scituate, Mass. After being supervisor of drawing in Lowell, was agent of the Massachusetts State Board of Education, in the interest of Industrial Drawing; official representative for the United States to the International Congress of Public Art at Brussels in 1898. He is the author of *First Year in Drawing, The Blackboard in Sunday School, The Great Painters' Gospel*, and editor of *School Arts Book*.

BAIN, ALEXANDER (1818-1903). English psychologist; born at Aberdeen, Scotland; taught in Aberdeen University; made professor of physics in the Andersonian University, Glasgow; in 1860 became professor of logic in the University of Aberdeen, and in 1881 was elected its rector. He is the exponent of physical psychology, and his chief work, *The Senses and the Intellect*, together with *The Emotions and the Will*, is the most learned and exhaustive treatise on the human mind in the English, or perhaps in any, language. Among his many writings are *English Grammar, Mental and Moral Science, Logic—Deductive and Inductive*, and *Education as a Science*.

BALLIET, THOMAS M. (1852-). Educated at Franklin and Marshall College, and at Yale; taught for several years, and then for a year devoted his time to lecturing on educational subjects in the West; was superintendent of schools in Reading, Pa., for two years, and in Springfield, Mass., for seventeen years. He has written and lectured much with inspiration and wide influence. The manual training movement found him one of its earliest and most ardent supporters. He is now dean of the School of Pedagogy in New York University, and is associate editor of the *Pedagogical Seminary*.

BARIZZA, GASPARINO (1370-1431). An Italian scholar; professor of Latin at Padua, coming from Milan. With Petrarch, he led in the movement for the revival of classical Latin, the recovery of the Latin text, and for the founding of libraries; he developed boarding schools for boys; wrote a manual of rhetoric for use in schools.

BARKER, GEORGE FREDERICK (1835-). Born at Charlestown, Mass.; professor of physiological chemistry and toxicology at Yale; professor of physics at the University of Pennsylvania from 1872 to 1900; now professor emeritus; xpert in poisons in criminal cases, and in patent suits; has written a text-book on chemistry.

BASCOM, JOHN (1827-). Born at Genoa, N. Y.; professor of rhetoric in Williams, and for thirteen years president of Wisconsin University; returned to Williams to accept the chair of political science, remaining till 1901; has been prominent as a lecturer on sociology and economics, but is most widely known as an efficient teacher and scholarly writer on economics, philosophy, and sociology; author of a *Political Economy, Ethics, Evolution and Religion*, etc.

BASEDOW, JOHANN BERNARD (1723-1790). Born at Hamburg, came under the influence of Rousseau's *Emile*, and proposed a general reform in education in Germany. His *Elementarwerk* appeared in 1774, combining the principles of Rousseau with the methods of Comenius. The *Philanthropinum* was established as a result, and exerted a wide influence.

BEDE, THE VENERABLE (673-735). The most distinguished scholar of his age; born in England. He obtained all the learning possible in those days, being acquainted with both Latin and Greek. He spent his life teaching and writing at Jarrow. He composed an encyclopedic work for his pupils, and wrote homilies, hymns, epigrams, history, and a work on grammar. His last work was a translation of the Gospel of St. John into Anglo-Saxon.

BELL, ALEXANDER MELVILLE (1819-1905). Scotch-American educator, born in Edinburgh; lecturer and instructor at Edinburgh University, the University of London, and Queen's College, Kingston, Canada, successively; famous as the inventor of "visible speech" a system of phonetic notation, very successfully used in the instruction of deaf mutes. He has written *Visible Speech, Principles of Phonetics*, and *World-English*.

BELL, ANDREW (1753-1832). A Scotch educational reformer; born at St. Andrew's. He went to India as a chaplain, but became the principal of an orphan school at Madras founded by the East India Company. The scarcity of properly qualified assistants forced him to use pupils to instruct one another under his direction, thus beginning the "Monitorial System," sometimes called the "Madras System." In 1797 Bell published *An Experiment in Education Made at the Male Asylum of Madras*, which attracted little attention until 1803, when Joseph Lancaster in an educational treatise recommended Bell's Monitorial System, the forerunner of the public graded schools.

BLOW, SUSAN E. The foremost pioneer of the kindergarten training movement in the United States. With Superintendent William T. Harris, in 1873, she made her first experiment, gladly proffering her own services gratuitously to the St. Louis Board of Public Schools. Sixty children were assigned her, quickly dispelling the Froebelian notion that only 12 or 15 could be successfully taught. Miss Blow's success marked a new epoch in the history of elementary education. Her well-known book, *Symbolic Education*, has already become a classic, and her later book, *Letters to a Mother*, is a further welcome addition to kindergarten literature.

BOYNTON, FRANK DAVID (1863-). Superintendent of schools in Ithaca, N. Y.; born in Potsdam; became principal of the Ithaca High School, and director of the Ithaca Conservatory of Music; was chairman of the commission to revise the regents' academic syllabus in 1900 and 1905, and of the commission appointed by the University of the State of New York to arrange courses of study for the secondary schools of the state, and is a member of the state examining board. He is the author of *School Civics, Manual of Civics*, and *Plane and Solid Geometry*.

BROWN, ELMER ELLSWORTH (1861-). Born at Kiantone, N. Y.; taught in high schools and universities; United States Commissioner of Education; member of the International Congress of Arts and Sciences at St. Louis in 1904 and president of the National Council of Education; has written *The Making of our Middle Schools, The Origin of American State Universities*, and a monograph entitled *Secondary Universities*.

BRYAN, WILLIAM LOWE (1860-). Born near Bloomington, Indiana; instructor in Greek, professor of philosophy, and vice-president at the University of Indiana from 1885 to 1902, since which time he has been its president.

BURGESS, JOHN WILLIAM (1844-). Born at Conersville, Tennessee; was professor of political science and history at Amherst, but, since 1876, has been connected with Columbia University as professor of political science and constitutional law; appointed the first Roosevelt professor of American history and institutions at the University of Berlin; published important works on political science and history.

BUSS, FRANCES MARY (1827-1894). A pioneer in the movement for the higher education of women in England, but chiefly in promoting secondary education for girls. A small private school, with the aid of the Brewers' and Clothiers' Companies, developed into the North London Collegiate and Camden Schools, the first school for girls in England offering educational facilities corresponding to the English grammar schools for boys, serving as a model for the many secondary schools founded by the Girls' Public Day School Company, the Church Schools Company, and many others.

BUTLER, NATHANIEL BUTLER (1853-). Born at Eastport, Me., is a graduate of Colby University and has been teacher and professor in high schools and colleges; was president of Colby from 1895 to 1901, and has been dean of the College of Education, University of Chicago, since 1905; largely identified with the University Extension movement.

BUTLER, NICHOLAS MURRAY (1862-). Born in Elizabeth, N. J. Since 1885, he has been connected with Columbia College, as tutor, dean, and professor of philosophy and education, and finally president; he is president of Barnard College, Teachers College, and of the College of Pharmacy; trustee of the Carnegie Foundation for the Advancement of Teaching, and president of the University Settlement Society. In 1893 he founded the *Educational Review*, of which he is still the editor, as he is of the *Great Educators* series; president of the N. E. A. in 1895;

has served on various boards of education, and has also been active in civil and political reform; founded the New York College for the Training of Teachers (now Teachers College), and was its first president. Author of *The Meaning of Education*, and of a number of monographs on *Education in the United States*.

CALKINS, NORMAN A. (1822-1895). Born at Gainesville, N. Y.; successively, teacher, principal, and superintendent of schools; conducted teachers' institutes for many years in New York and adjoining states; assistant-superintendent of schools in New York City and instructor in methods and principles of education in the Saturday Normal School; active in the National Education Association; author of *Primary Lessons* and other books for teachers.

CAPEN, SAMUEL PAUL (1878-). Professor of modern languages at Clark College since 1902; president of Public Education Association since 1908.

CARDAN, JEROME (CARDANO, GIROLAMO) (1501-1575). Born in Italy, studied medicine at Padua, and became a celebrated physician at Milan, and professor of mathematics there, at Bologna, and at Rome; a man of great learning and an original thinker, being the first to demonstrate the formula for the resolution of equations of the third degree. His published works, in ten volumes, include treatises upon almost every department of learning.

CASSIODORUS, MAGNUS AURELIUS (about 468 to 568). Roman historian and statesman. The most profound and enlightened scholar of an age of barbarism. He may be regarded the father of the monastic *scriptorium* to which we owe the preservation of most of the classic literature; writer of text-books on rhetoric and grammar which had great vogue in the Middle Ages.

CAVANAUGH, JOHN WILLIAM (1870-). Roman Catholic clergyman; born at Leetonia, Ohio; was superior of Holy Cross Seminary, Indiana, from 1898 to 1905. He has been professor of English literature, and since 1905 president at the University of Notre Dame. Member of the Rhodes scholarship committee for Indiana; author of *Priests of the Holy Cross*.

CHAMBERLAIN, ALEXANDER FRANCIS (1865-). A Canadian educationist, born in England; educated in Canada; graduated at Toronto University (B.A., 1886; M.A., 1889); at Clark University (Ph.D., 1892), where he has since been assistant professor of anthropology; member of several learned societies; made special investigations of the Kootenay (B.C.) Indians; editor of *Journal of American Folk-Lore* since 1900; department editor *American Anthropologist*; author of essays, sonnets, short poems, and hymns.

CHANCELLOR, WILLIAM ESTABROOK (1867-). Born in Dayton, Ohio; lecturer on sociology, history, and economics, at Brooklyn Institute; superintendent of schools in Bloomfield, and Paterson, N. J., and since 1906 in the District of Columbia; lecturer on school administration at Chicago University, and on education and history at the George Washington University; member of several important scientific associations. His principal important scientific works are *Mathematical Series* in 10 volumes, *American History, Graded City Spellers*, and *A Theory of Education*.

CHEEVER, EZEKIEL (1615-1708). Born in London, but came to New England in 1637. He taught in New Haven, Ipswich, and Charlestown, for thirty-two years. In 1670 he went to Boston, and for thirty-eight years served as head master of the Boston Latin School; the most famous of colonial schoolmasters. He wrote the *Accidence*, which was used as a text-book in Latin for over a century, and *Scripture Prophecies Explained*.

CHILD, FRANCIS JAMES (1825-1896). A distinguished American scholar and teacher; born in Boston, Mass.; professor of English at Harvard (1876-1896); wrote *Observations on the Language of Chaucer* and *Of Gower's Confessio Amantis*. His greatest work is the edition of *English and Scottish Ballads* in eight large volumes.

CHRYSOLORAS, MANUEL (? -1415). A Byzantine Greek scholar, the first important teacher of Greek of the Renaissance; taught in Constantinople, and, at the invitation of the Florentine Republic, in Florence; later, in other cities of Italy; his most important work was a *Greek Grammar*, published in Venice in 1484.

CLARKE, SIR CASPAR PURDON, KT. (1846-). Director of the Metropolitan Museum of Art, New York (1905-1910); born in London, England; educated in England and France; for a time he was principal of the School of Arts, Calcutta, India, and is a recognized authority on Indian Art; afterwards, he became director of the Art Museum, South Kensington, London, which contains the finest collection in the British Empire.

COCHRAN, DAVID HENRY (1828-1909). Born in Springville, N. Y.; president of the New York State Normal College, and of the Brooklyn Collegiate and Polytechnic Institute; when president of the Brooklyn Y. M. C. A., he organized evening schools and a course of scientific lectures.

COLBURN, DANA POND (1823-1859). Horace Mann's attention being attracted to him by his teaching of arithmetic, he was appointed an institute instructor. In 1852, opened a private normal school in Providence, which became a state institution and of which he was the first principal. He published *Arithmetic and its Applications* and *Common School Arithmetic*.

COLBURN, WARREN (1793-1833). A distinguished American mathematician and educator; born in Massachusetts; his *First Lessons in Intellectual Arithmetic* was immensely popular in America and England and was widely translated. He wrote a *Sequel* to his arithmetic and an *Algebra*.

COMENIUS (or **KOMENSKY**), **JOHANN AMOS** (1592-1670). Bishop of the Moravian Church; born in *Moravia*; in 1631, published his *Janua Linguarum Reserata* in which he attempts to systematize the entire field of knowledge, so as to bring it in outline within the grasp of each child; organized the schools in Moravia, Sweden, and Holland. He recommended a system of schools like the American system of kindergarten, elementary and secondary schools, and university. His *Orbis Pictus* was a description, in short and easy sentences, of objects illustrated by rude engravings, and was the most popular text-book in Europe. He was the forerunner of Rousseau, Pestalozzi, and Froebel.

COMPAYRE, JULES GABRIEL (1843-). Born in France; professor of philosophy and the history of education in normal schools, and rector of the Academy at Poitiers and at Lyons; member of the higher council of public instruction, and of the commissions appointed to reorganize primary instruction; was inspector-general of public education in 1905; is considered one of the foremost French writers of this century on pedagogic questions. His principal writings are: *Histoire critique des doctrines de l'education en France*, a brilliant and valuable work, *Etudes sur l'enseignement et l'education*, *Histoire de la pedagogie*, and *Abelard and the Origin of Universities*.

COOLEY, EDWIN GILBERT (1857-). Born at Strawberry Point, Iowa; was superintendent of schools, principal of a high school, and elected principal of Chicago Normal School, but before taking the position was elected to the superintendency of the Chicago Schools; was president of the National Education Association for 1907-1908.

DABNEY, CHARLES WILLIAM (1855-). President of the University at Cincinnati; professor of chemistry in the University of North Carolina and state chemist; discovered the phosphate deposits and tin ore in North Carolina, and was largely instrumental in establishing an industrial school at Raleigh; was president of the University of Tennessee and assistant secretary of agriculture at Washington during Cleveland's administration; author of *Old College and New*, *Washington's Interest in Education*, and *Agriculture and Education*.

DANA, EDWARD SALISBURY (1849-). Born in New Haven, Conn.; curator of the mineral collection at Yale, and professor of physics; trustee of Peabody Museum and editor of the *American Journal of Science*. His text-books on mineralogy have been deservedly popular and are in use in many schools.

DAVIS, WILLIAM MORRIS (1850-). Geographer and geologist; born in Philadelphia; for three years assistant at the Argentine National Observatory; has been connected with Harvard since 1878 as professor of physical geography and geology; a member of the Carnegie Institution Expedition to Turkestan in 1903, and traveled in South Africa two years later; author of *Physical Geography* and *Elementary Meteorology*, and is associate editor of *Science*, *American Naturalist*, and *The American Journal of Science*.

DAY, JAMES ROSCOE (1845-). Born in Maine; was clergyman in Portland, Boston, and New York Methodist churches; chancellor of Syracuse University since 1894; was elected Bishop of the Methodist Episcopal Church in 1904, but resigned.

DEGARMO, CHARLES (1849-). Born in Wisconsin; professor of modern languages, professor of psychology in the University of Illinois, and president of Swarthmore College. Since 1898 he has been professor of the science and art of education at Cornell; author of *Essentials of Method, Herbart and Herbartians, Language Lessons,* and *Principles of Secondary Education.*

DEWEY, MELVIL (1851-). Born in New York State; while at Amherst College he was acting librarian; planned and directed three national educational societies—the American Library Association, the Metric Bureau, and the Spelling Reform Association; also the Library Bureau for advancing library interests. From 1883 to 1888, he was chief librarian and professor of library economy at Columbia; founder and director of the Albany Library School; has written *Library School Rules* and *Decimal Classification and Relative Index.*

DOLBEAR, AMOS EMERSON (1837-1910). For the last 33 years professor of physics at Tufts College, and now professor emeritus; invented the writing telegraph, the magneto-telephone, the static telephone, and the air space telegraph cable; discovered the convertibility of sound into electricity, telegraphing without wires, and photographing with electric waves; has written several books, *Matter, Ether, and Motion* being his principal work.

DRAPER, ANDREW SLOAN (1848-). Born in New York State; American lawyer and educator; served on the City Board of Education in Albany; member of the Court of Commissioners on Alabama claims in 1885; state superintendent of public instruction in New York, and he accomplished among other reforms, the adoption of a system of uniform examinations; superintendent of the Cleveland, Ohio, schools for two years, and president of the University of Illinois for ten years; elected first commissioner of education for the state of New York, and declined the election to the first superintendency of the schools of Greater New York; member of the Board of United States Indian Commissioners since 1902. He has published *The Rescue of Cuba* and many addresses, having received medals for his work as an educational writer and speaker.

DUNSTER, HENRY (about 1612-1659). Born in Lancashire, England, and educated at Cambridge. He emigrated to America (1640) and at once became president of Harvard College, resigning in 1657.

DUTTON, SAMUEL TRAIN (1849-). A teacher, principal and superintendent of schools (1874-1900); professor of school administration and superintendent of Horace Mann Schools, Teachers College, N. Y., since 1900; lecturer in pedagogy at Harvard; author of several valuable text-books.

DWIGHT, TIMOTHY (1828-). Born at Norwich, Conn.; for twenty-eight years professor of sacred literature and New Testament Greek at Yale Theological Seminary; president of Yale University, as was his father before him; member of the American committee for the revision of the Bible; translated and edited several foreign works on the Epistles of the New Testament, and has published a volume of his sermons entitled *Thoughts of and for the Inner Life,* and *Memories of Yale Life and Men.*

ELIOT, CHARLES WILLIAM (1834-). Called the "First Living Citizen of America"; born in Boston, Mass.; was tutor in mathematics and chemistry at Harvard several years, later professor of analytical chemistry in the Massachusetts Institute of Technology, whence he was elected president of Harvard University (1869). In this position he has led most of the colleges in the country to substitute electives for the former uniform courses of study. He resigned the presidency of Harvard and was elected president emeritus (1909). By his lectures and writings, and by his work on the "Committee of Ten" in the National Education Association, he has also been active in reforming the courses in secondary and common schools. Some of his published works are *The Working of the American Democracy, Educational Reform,* and *Essays and Addresses.*

ELY, RICHARD THEODORE (1854-). Born at Ripley, N. Y.; was professor of political economy at Johns Hopkins, and since has held a similar position at the University of Wisconsin; founded the American Economic Association and the American Bureau of Industrial Search; has been president of the American Association for Labor Legislation since 1900. He is the author of a number of works on political economy, among them *Taxation in American States and Cities, The Social Law of Service, Monopolies and Trusts,* and *Studies in the Evolution of Industrial Society.*

ERASMUS, DESIDERIUS (1467-1536). Born at Rotterdam; one of the greatest scholars of the Renaissance and Reformation period; was famous as chief interpreter to the peoples of northern Europe of the great intellectual movement of the fifteenth century. Having hopes of preferment from Henry VIII., he went to England and became professor of Greek at Oxford. He was a man of profound learning and brilliant wit. Besides editing several classic authors, he prepared the earliest edition of the Greek testament. His *Colloquia* has exerted the greatest influence of all his writings.

ERIGENA, JOHANNES SCOTUS, "JOHN THE SCOT" (about 810 to about 875). A distinguished British philosopher, whose early and late years are shrouded in obscurity; he was invited to France by Charles the Bald and placed in charge of the court school. Erigena translated the writings of Pseudo-Dionysius, the Areopagite. His great work is *De Divisione Naturae,* first printed in Oxford, 1681. His teachings mark the transition from the older Platonism to Neo-Platonism.

FALCONER, REV. ROBERT A. (-). Leading educator; born in Nova Scotia. Matriculation honors at Toronto University, gaining B.A. (1888), M.A. (1889); B.D. (1892) at Edinburgh University. Ordained to the ministry; appointed lecturer on New Testament Exegetics in Presbyterian College, Halifax (1892), professor (1895).

FAUNCE, WILLIAM HERBERT PERRY (1859-). Born at Worcester, Mass.; was graduated at Brown; instructor of mathematics at Brown; pastor of Baptist churches at Springfield, Mass., and New York City until his election to the presidency of Brown University in 1899; has been lecturer at University of Chicago and at Yale.

FELLOWS, GEORGE EMORY (1858-). Born at Beaver Dam, Wis.; taught for ten years in high schools; professor of European history at Indiana University and assistant professor of history at Chicago University. Since 1902 he has been president of Maine University; author of *Outlines of the Sixteenth Century* and *Recent European History.*

FENOLLOSA, ERNEST FRANCISCO (1853-1908). Born at Salem, Mass.; went to Japan as professor of political economy and philosophy in Tokyo University; was imperial fine arts commissioner to the Japanese government in 1886; professor of aesthetics and manager of the Tokyo Arts Academy; became curator of the oriental art department of the Museum of Fine Arts in Boston; professor of English literature in the Imperial Normal School in Tokyo; lectured on the Orient, and was the author of several books, including two volumes of poems and monographs on oriental art.

FINLEY, JOHN HUSTON (1863-). Born at Grand Ridge, Ill.; secretary of the State Charities Aid Association in New York; the founder and editor of the *State Charities Record* and *The Charities Review* of New York; professor of politics at Princeton; president of New York College since 1903.

FITCH, JOSHUA G. (1824-). An English educator; vice-principal of the British Normal College, then principal; finally inspector of schools, including the training college for teachers. His books, *Lectures on Teaching, Art of Questioning,* and *Art of Securing Attention,* are well known.

FRANCKE, AUGUST HERMANN (1663-1727). A distinguished German educator. In 1695 he became pastor of a small town near Halle, where he started a private school in his house, which at his death had grown to be a large educational and charitable institution with 2,165 students, comprising three departments, the Pedagogium, for the children of the wealthy, the Latin School, and the common schools. The teachers were students at the University of Halle. This institution was the first to combine Christian and practical training with normal school work. Francke's ideas were opposed both to extreme rationalism and the classical school. He advocated the use of the vernacular.

FROEBEL, FRIEDRICH WILHELM AUGUST (1782-1852). Famous German educationist and originator of the *Kindergarten,* an institution for simultaneously furthering the physical, moral, and intellectual growth of children between the ages of three and seven; a "garden of children" in which young human

plants are nurtured. He held that the essence of education was to be found in wisely directed but spontaneous action, and that play was a child's most natural employment. The master-stroke of Froebel's genius was his organization of children's play. In 1826, he published his great work, *The Education of Man*, and seventeen years later, the *Mutter-und-Kose-lieder* (Songs, Games, and Stories for use of Mothers). Froebel holds that education creates nothing in the children, but merely directs the growth of inborn qualities. To him education meant unity of development in perfect accordance with the laws of being.

FRYE, ALEXIS EVERETT (1859-). Educator and author, teacher of methods and practice, Chicago Normal School; superintendent in California and Cuba; organizer of Cuban school system; educational lecturer; author of many school text-books relating to nature study and geography.

GALLAUDET, EDWARD MINER (1837-). Born in Hartford, Conn.; taught in his father's institution for deaf-mutes at Hartford before organizing, in 1857, the institution for Deaf, Dumb, and Blind at Washington; founded in 1864, Gallaudet College for the Deaf, which is the only college of its kind in the world. He is professor of moral and political science there, and president of the convention of American Institutions for the Deaf. He has written *Popular Manual of International Law*, and the *Life of Thomas Hopkins Gallaudet*.

GALLAUDET, THOMAS HOPKINS (1787-1851). American educator of deaf and dumb; born in Philadelphia, Pa., of French Huguenot ancestry. Familiarizing himself with the system of the Abbé Sicard in Paris, and with that of Braidwood and Watson in London, he founded an institution in Hartford, Conn., for the deaf and dumb.

GENUNG, JOHN FRANKLIN (1850-). An American educator; born in Willseyville, N. Y.; is professor of rhetoric in Amherst College; has written a number of excellent text-books.

GILDERSLEEVE, BASIL LANNEAU (1831-). Distinguished classical scholar; born at Charleston, S. C.; professor of Greek in the University of Virginia; appointed to the professorship of Greek at Johns Hopkins University, which position he still holds; edited the *American Journal of Philology* since its establishment in 1880. Among his numerous works are: *A Latin Grammar*; *Persius*; *Justin Martyr*; *Pindar*; *Essays and Studies*; *Greek Syntax*.

GILMAN, ARTHUR (1837-1909). Born in Alton, Ill.; planned the Harvard Annex School (1876), which became Radcliffe College (1894), of which Gilman became regent; founded the Cambridge school for girls, since known as the "Gilman School" (1886); wrote *Boston Past and Present*, *Shakespeare's Morals*, *History of the American People*, *The Making of the American Nation*, etc.

GILMAN, DANIEL COIT (1831-1908). Born at Norwich, Conn.; successively librarian, secretary of the Sheffield Scientific School, and professor of physical and political geography; president of the University of California, first president of Johns Hopkins University, continuing from 1875 to 1901, and then president emeritus; president of the Carnegie Institution at Washington; member of the United States Commission on the boundary line between Venezuela and British Guiana; trustee of the Russell Sage Foundation and of Carnegie Institution. He published *Life of James Monroe*, *University Problems*, and *The Launching of a University*. He was editor-in-chief of the New International Encyclopedia.

GOODWIN, WILLIAM WATSON (1831-). Well-known American classical scholar; born at Concord, Mass.; Eliot professor emeritus of Greek at Harvard University; first director of the American School of classical studies at Athens; author of various text-books.

GRIGGS, EDWARD HOWARD (1868-). Widely-known lecturer; born in Minnesota. Instructor in English literature and professor of literature at Indiana University; professor of ethics, and of ethics and education at Leland Stanford Junior University. Since 1899 he has been giving courses of lectures on ethics and literature to cultured audiences in the larger cities. His writings include *The New Humanism*, *A Book of Seventy Meditations*, and *Moral Education*.

GROSVENOR, EDWIN AUGUSTUS (1845-). American historian; born in Newburyport, Mass.; professor of European history at Amherst from 1892-1899; author of various historical works including: *Constantinople*, *Contemporary History of the World*, also a translation from the French of Duruy's *History of Modern Times*, etc.

GULICK, LUTHER HALSEY (1865-). Born in the Hawaiian Islands; secretary of the physical training department of the International Committee of the Y. M. C. A.; one of the faculty of the International Y. M. C. A. Training School at Springfield, Mass.; principal of Pratt Institute High School; director of physical training in the public schools of Greater New York until 1908, when he began to serve on the Russell Sage Foundation for playgrounds. His writings are *Physical Measurements*, and *Physical Education by Muscular Exercise*, and *Mind and Work*.

HADLEY, ARTHUR TWINING (1856-). Born in New Haven, Conn.; professor of political science and political economy until 1899, when he became president of Yale; has been lecturer on railroad administration, and commissioner of labor statistics. He has published *Railroad Transportation—Its History and its Laws*, *The Education of the American Citizen*, *Freedom and Responsibility*, and *Standards of Public Morality*. His writings give him first rank among American economists.

HAILMANN, WILLIAM NICHOLAS (1836-). Born in Switzerland; after teaching several years, was elected superintendent of the public schools of La Porte, Indiana; became national superintendent of Indian schools and later superintendent of schools at Dayton, Ohio. Since 1904 has been head of the department of psychology at the Chicago Normal School. His writings include a large number of educational works, among which are *History of Pedagogy*, *Early Education*, *Kindergarten Culture*, *The English Language*, and *The Laurel Primer*.

HALL, GRANVILLE STANLEY (1846-). Born in Ashfield, Mass.; professor of psychology at Antioch College; lecturer on psychology at Harvard and at Williams, and professor of psychology at Johns Hopkins, becoming then (1888) president and professor of psychology at Clark University. He has made child-study a specialty, and is a well-known lecturer and writer in various publications on that subject. His books include *Aspects of German Culture*, *Adolescence*, and *Youth—Its Education, Regimen and Hygiene*. He is the founder and editor of *The American Journal of Psychology* and the *Pedagogical Seminary*.

HARPER, WILLIAM RAINEY (1856-1906). An American educator; born at New Concord, Ohio; professor of Hebrew at the Baptist Seminary, Chicago (1879), where he perfected a method of teaching Hebrew by correspondence; professor of Semitic languages and biblical literature at Yale (1886-1889); president of the University of Chicago (1891-1906); wrote *Elements of Hebrew*, *Hebrew Vocabularies*, *Hebrew Method and Manual*, *Elements of Hebrew Syntax*, and *Prospects of the Small College*.

HARRIS, ABRAM WINEGARDNER (1858-). Born in Philadelphia; taught mathematics at Wesleyan and elsewhere; director of the Office of Experiment Stations, United States Department of Agriculture; from 1893 to 1901 president of the University of Maine; since 1906 president of Northwestern University.

HARRIS, GEORGE (1844-). President of Amherst College since 1899; born in Maine; professor of Christian theology in Andover Theological Seminary; one of the editors of the *Andover Review*; author of *Moral Evolution*, and *Inequality and Progress*.

HARRIS, WILLIAM TORREY (1835-1909). One of the most eminent American educators; was United States Commissioner of Education from 1889 to 1906; superintendent of St. Louis public schools (1867-1888); lecturer at the Concord School of Philosophy; represented the United Bureau of Education at the Brussels Educational Congress and the Paris Exposition in 1889; established the *Journal of Speculative Philosophy*, and was regarded as the best exponent in this country of the philosophy of Hegel. He helped edit Appleton's School Readers, edited Appleton's educational series, department of philosophy in Johnson's Cyclopædia, and was editor-in-chief of Webster's International Dictionary. He was the author of *Introduction to the Study of Philosophy*, *Hegel's Logic*, and *Psychologic Foundations of Education*, besides many other works.

HAZARD, CAROLINE (1856-). Born in Rhode Island; member of the Massachusetts State

Board of Education; president of Wellesley (1899-1910). Author of *Some Ideals in the Education of Women.*

HECKER, JOHANN JULIUS (1707-1768). A German educator; born at Werden, Prussia. Pupil of Francke. By command of Frederick II. of Prussia he formulated a system for the government of common schools, which is now partly in force, and established the first permanent real-schule.

HEGIUS, ALEXANDER (1433-1498). A German humanist; born at Heek. He was a pupil of Thomas à Kempis, and in his turn instructed Erasmus, Pope Adrian VI., and Conrad Goclenius. He used no mediaeval text-books, but made Latin his standard. His works include treatises on pedagogy, psychology, and morals.

HERBART, JOHANN FRIEDRICH (1776-1841). A German philosopher and eminent educationist. Following at first in his teaching the methods of Pestalozzi and Fichte, after more reflection he formed one of his own, now familiarly called the *Herbartian System.* The theory of "Apperception" was fully set forth by him as well as the problem of how to realize the ideas of freedom, perfection, right, equity, and benevolence within the sphere of education. Many training schools have been established on his methods. His writings fully explain his position and theories, among them *Herbart's A B C of Sense-Perception, Application of Psychology to the Science of Education,* and *Outlines of Educational Doctrine.*

HIRSCH, EMIL G. (1852-). Born in Luxemburg, Ger. He became a rabbi in 1877, and in 1892 was appointed professor of rabbinical literature and philosophy at Chicago University; for several years editor of the *Zeitgeist,* and now edits the *Reform Advocate,* Chicago.

HOPKINS, MARK (1802-1887). Born at Stockbridge, Mass.; was appointed professor of moral philosophy and rhetoric at Williams in 1830; elected to the presidency of Williams in 1836, which office he held for thirty-six years, retaining the professorship of mental and moral philosophy after resigning the office of president. As a teacher he made a wonderful impression upon his classes, and his administration of the college was remarkably successful. Among his published works are *The Law of Love, Love as a Law,* and *Teachings and Counsels.*

HOWARD, OLIVER OTIS (1830-1909). Born at Leeds, Me. From 1865 to 1874, he was commissioner of the Freedmen's Bureau, establishing within three years 1,400 schools and 700 Sabbath schools; he was largely instrumental in establishing Howard University, Washington, and was its president from 1869 to 1873; superintendent at West Point for a year; founded Lincoln Memorial University in 1895. He wrote *Donald's School Days, Nez Perces Joseph,* and *Our Wild Indians.*

HOWE, SAMUEL GRIDLEY (1801-1876). An American educational reformer and philanthropist; born in Boston. His name will long be remembered for his work among the blind. In 1832 he established the famous Perkins Institution for the Blind, and later was the means of a number of similar institutions being founded throughout the country. He introduced many improvements in the printing and preparation of books for the blind.

HUNTINGTON, EMILY (1841-). A writer as well as educator; born in Lebanon, Conn. In 1872 she became the head of the Wilson Industrial School for Girls, in New York, the first school of its kind in America, laboring for twenty years; started the first boys' club and the first kitchen garden; author of many books on gardening.

HYDE, WILLIAM DEWITT (1858-). Born at Winchendon, Mass. Pastor of a church in Paterson, N. J.; called to be the seventh president of Bowdoin College in 1885. He has frequently written and spoken on educational topics. Some of his published works are *Practical Ethics, Social Theology, The Evolution of a College Student, The Art of Optimism,* and *From Epicurus to Christ.*

ISIDORE, ARCHBISHOP OF SEVILLE (?570-636). Most famous ecclesiastic of the seventh century, and most learned man of his time. We are indebted to him for many fragments of Greek and Latin authors. His *Etymologies,* in twenty books (edited by Otto Leipsig, 1833), formed the great mediaeval encyclopedia.

ISOCRATES (436-228 B. C.). The most celebrated teacher of his age, was educated at Athens, being taught by Socrates. In 392 B. C. he opened a school at Athens, where he taught the art of rhetoric. Cicero gained much from him, and said that in his school the eloquence of Greece was developed and perfected. His writings include orations and letters.

JAMES, EDMUND JANES (1855-). Political economist; born in Jacksonville Ill.; professor of public finance and administration, Wharton School of Finance and Economy, University of Pennsylvania (1883-1895); professor of political and social science in the same university (1884-1895); professor of public administration, University of Chicago (1896-1901); president of the Northwestern University from 1902 to 1904; now president of the University of Illinois; editor and author of a number of works on political economy and social science and public law.

JAMES, WILLIAM (1842-). American psychologist and philosopher, born in New York; has filled the following offices at Harvard: assistant professor of comparative anatomy and physiology; assistant professor of philosophy; professor of psychology and philosophy; besides being Gifford lecturer on natural religion at Edinburgh. He has contributed much to analytical psychology and to metaphysical analysis in philosophy. Some of his works are: *Principles of Psychology, The Will to Believe, Talks to Teachers on Psychology, Human Immortality, Pragmatism.*

JEROME, SAINT (about 340-420). The most learned of the early fathers of the Latin Church, and a contemporary of Ambrose and Augustine. He presided over a monastery founded by Paula in Bethlehem and finished the book to which he owes his fame, viz., *The Latin Translation of the Bible.*

JESSE, RICHARD HENRY (1853-). Born in Virginia; instructor in the universities of Louisiana and Tulane until called to the presidency of the University of Missouri in 1891; prominent in the National Education Association, being one of the Committee of Ten on the course of study for secondary schools (1892-1893). President of Southern Association of Colleges and Secondary Schools; author of many pamphlets and addresses.

JOHNSON, EMORY RICHARD (1864-). American educator; professor of commerce and transportation, University of Pennsylvania, since 1896; expert on transportation and railway property for U. S. government (1899-1905); author of works on transportation.

JOWETT, BENJAMIN (1817-1893). A distinguished English scholar and educationist. A brilliant university career was followed by a fellowship and tutorship at Balliol, of which college he was master from 1870 until the time of his death. Jowett exercised a marked personal influence over his pupils, and did more perhaps than any of his contemporaries toward shaping the life and thought of his generation. He was the foremost Greek scholar of his day.

JUDSON, HARRY PRATT (1849-). Born at Jamestown, N. Y. Teacher and principal of the high school at Troy, N. Y.; professor of history in the University of Minnesota; head professor of political science, and dean of the faculties of art, literature, and science, at the University of Chicago. Since 1907 he has been president of the University of Chicago; author of a number of books on historical and educational subjects.

KING, HENRY CHURCHILL (1858-). Born at Hillside, Mich.; was associate professor, professor and dean of Oberlin College from 1884 to 1902, when he was elected its president; was a member of th Committee of Ten in the National Education Association to report on secondary school studies; author of *The Appeal of the Child, Personal and Ideal Elements in Education,* and *Letters to Sunday School Teachers.*

LADD, GEORGE TRUMBULL (1842-). American psychologist and philosopher; born at Painesville, Ohio; professor of philosophy at Bowdoin College. He has written numerous works on psychology and philosophy, including *Philosophy of Religion, Outlines of Physiological Psychology, Philosophy of Mind, Philosophy of Conduct.*

LANCASTER, JOSEPH (1778-1838). English educator; born in London. He made use of, and improved, Bell's Monitorial System; established the Royal Lancastrian Society from which grew the British and Foreign School Society.

LA SALLE, JEAN BAPTISTE DE (1651-1719). A French priest; born at Rheims; founder of the order commonly called the "Christian Brothers," having for its object the providing of schools for the poor. After establishing schools in various parts of France, he went

to England and James II. intrusted to him the educating of fifty Irish boys of good family. In 1699 he established the first technical school. At his death the order comprised 274 Brothers and 10,000 pupils. Some of his books have been translated into English: *The Rules of Christian Politeness* and *Management of Christian Schools.* La Salle was canonized by Pope Leo XIII.

LILY, or LILLY, WILLIAM (about 1468-1522). A celebrated English grammarian. He was graduated from Oxford, traveled to the Orient, lived at Rhodes and Rome to perfect his knowledge of Greek and Latin. He opened the first private or aristocratic school in London for training gentlemen's sons for Oxford and Cambridge in the dead languages. He was the first headmaster in Colet's School, in St. Paul's Churchyard, the first public school in England. He was probably the first teacher of Greek in England and was one of the chief exponents of the "new learning" in that country. He edited and published a work known as *Lilly's Grammar.*

LOW, SETH (1850-). An American administrator; born in Brooklyn, N. Y.; graduated at Columbia University (1870); president Columbia University (1890-1901); united its several departments, expanded its scope, promoted removal to its present commanding site, and gave to it the great library building completed at a cost of over $1,000,000 to his private fortune; mayor New York City (1902-1903).

LOWELL, ABBOTT LAWRENCE (1856-). Was graduated from Harvard (1877); and from Harvard Law School (1880); legal practitioner (1880-1897); lecturer on government at Harvard (1897-1899); professor of the science of government (1900-1909); president of Harvard University (1909); trustee of the Lowell Institute of Boston; author of *Essays on Government, Governments and Parties in Continental Europe,* a widely used treatise; and *The Government of England.*

LOYOLA, IGNATIUS DE (?1491-1556). Founder of the Jesuits; born in Spain. At the age of thirty-three he began to teach the rudiments of grammar in a public school to little boys; continued his studies in Paris, where Francis Xavier was one of his chosen companions; became a priest and founded the Order of the Jesuits in 1534, establishing a number of orphan asylums for boys and girls. At his death no fewer than 130 colleges had been established by the Jesuits. Loyola was canonized in 1622.

LYON, MARY (1797-1849). Pioneer in the movement for the higher education of women; taught at Derry, N. H., and from 1828 to 1834 was principal of Ipswich Seminary; founded in 1837 Mt. Holyoke Seminary, where women could fit themselves for teaching. For the sake of economy and to give the young women exercise and practice in household tasks, she arranged the course so that each student should perform some household labor each day.

McCARTHY, CHARLES HALLAN (1860-). American educator; professor American history, Catholic University of America, since 1904; author of *Lincoln's Plan of Reconstruction.*

MacCRACKEN, HENRY MITCHELL (1840-). Born at Oxford, Ohio. He was teacher of classics, school superintendent, chancellor of Western University, then went to New York University as vice-chancellor and professor of philosophy. He has been since 1891 chancellor of New York University; author of *Kant and Lotze,* and *A Metropolitan University.*

McIVER, CHARLES DUNCAN (1860-1906). Born in North Carolina; taught for several years and was elected president of the State Normal and Industrial College for women; organized many associations for the betterment of educational conditions in his own state and through the South.

MACKAY, ALEXANDER HOWARD. Born at Mount Dalhousie, Pictou, N. S. He was successively principal of Annapolis, Pictou, and Halifax academies; superintendent of education for Nova Scotia. He is very active in the educational field, advocating reforms in the systems of weights and measures, and spelling. He has been connected editorially with various educational and scientific periodicals.

MACY, JESSE (1842-). American educator and political economist; professor constitutional history and political science, Grinnell, since 1885; author of the *British Constitution,* texts on civics, and other works on political science.

MAIN, JOHN HANSON THOMAS (1859-). Born at Toledo, Ohio; professor of ancient languages at Moore's Hill College; professor, acting president, dean, and now president of Grinnell College.

MANN, HORACE (1796-1859). President of Antioch College (1852-1859). As secretary of the board of education appointed by the state legislature of Massachusetts (1837) to revise the school laws and to reorganize the school system, Mann wrote 12 volumes of annual *Reports* (1837-1848) which are educational classics; wrote *Lectures on Education, On the Study of Physiology in Schools, Slavery Letters and Speeches.*

MARTIN, GEORGE H. (1841-). Born at Lynn, Mass. He was a teacher at Bridgewater Normal School for 18 years; agent of the Massachusetts State Board of Education for two years; supervisor of the Boston schools from 1892-1904, since which time he has been secretary of the State Board of Education. His works include *Civil Government,* a text-book for schools, and *Hints on Teaching Civics.*

MATHER, INCREASE (1639-1723). A colonial divine; born at Dorchester, Mass.; in 1681 he was made president of Harvard, but his régime was characterized by various intrigues. He was a voluminous writer, his books including: *A Brief History of the War with the Indians in New England, Cometographia, Cases of Conscience, Concerning Witchcraft.*

MAXWELL, WILLIAM HENRY (1852-). Born in Ireland. He came to the United States, became superintendent of schools in Brooklyn, and finally since 1898 superintendent of the greater New York City schools. He is author of two school grammars.

MUIR, ALEXANDER (1834-). Scotch birth; B.A. at Queen's University, Kingston (1851); taught at Scarboro, Newmarket, Beaverton, Toronto (1880); principal Gladstone avenue public school, Toronto (1897). Well known national poet; author of "The Maple Leaf Forever," the national song of Canada (1866); also "Canadâ," "The Old Union Jack," and "Canada Forever." Member Orange Order; president Army and Navy Veterans' Association, Toronto (1892); bard to Militia Veterans '66 (1894).

MONROE, PAUL (1869-). Professor of history of education since 1902, in Teachers College, Columbia University; author of several books, including *Text-book in the History of Education,* and a brief course in the same subject.

MOULTON, RICHARD GREEN (1849-). An English literary critic; born at Preston, England; a well-known University Extension lecturer; now professor of English at the University of Chicago. Among his many writings may be mentioned: *Shakespeare as a Dramatic Artist, Ancient Classical Drama, Four Years of Novel Reading, The Literary Study of the Bible, Introduction to the Literature of the Bible, Modern Readers' Bible.*

MULCASTER, RICHARD (1530?-1611). An English schoolmaster of wide repute; first head master of the Merchant Taylors' School (1561-1586); subsequently high master of St Paul's School, London, (1596-1608). His best known books are: *Positions, wherein those primitive circumstances be examined, which are necessarie for the training up of children, either for skill in their book or health in their bodie* (1581); and the *Elementarie, which entreateth Chefelie of the right writing of our English tung* (1582). He strenuously advocated physical training as well as music for boys.

MULLANY, PATRICK FRANCIS (BROTHER AZARIAS) (1847-1893). Born in Ireland. President of Rock Hill College for seven years; teacher of literature at De La Salle Institute, New York; author of *Philosophy of Literature* and *Phases of Thought and Criticism.*

MUNRO, DANA CARLETON (1866-). American educator; instructor and professor of history at University of Pennsylvania (1893-1902); since 1902 professor of European history, University of Wisconsin; author of *Mediaeval History, Source Book of Roman History,* and *Mediaeval Civilization.*

MUNSTERBERG, HUGO (1863-). A German-American psychologist. He became instructor in psychology at the University of Freiburg, Germany, assistant professor in 1891; and in 1892 professor of psychology at Harvard University. He has devoted himself chiefly to the psychological side of psychology, and it was under his direction that the psychological laboratory at Harvard was organized. Some of his important publications are *Psychology and Life, Grundzüge der Psychologie, American Traits, Principles of*

Art Education, Science and Idealism. He is editor of *Harvard Psychological Studies.*

MURPHY, THOMAS EDWARD (1856-). Born in New York; professor of Latin and Greek at Georgetown University, as well as vice-president; president of the College of St. Francis Xavier, and since 1906 of Holy Cross College, Worcester.

NEEDHAM, CHARLES WILLIS (1848-). Born in Castile, N. Y.; elected dean of the Schools of Law of Columbian University, Washington, D. C., and later appointed professor of law. He organized the School of Comparative Jurisprudence and Diplomacy at Washington, and was elected its dean (1898); professor of transportation and interstate commerce. President of George Washington University since 1902.

NICHOLS, ERNEST FOX (1869-). Born in Leavenworth, Kan.; professor of physics at Cornell, Colgate, and Dartmouth successively; professor of experimental physics, Columbia (1903-1909); president of Dartmouth College (1909); writer on radiation.

NOLLEN, JOHN SCHOLTE (1869-). American educator; professor modern languages, Grinnell (1893-1903); professor of German, Indiana University (1903-1907); president Lake Forest University since 1907; author *Outline History Modern German Literature*; editor, Schiller's *Maria Stuart*, and other poems.

NORTHROP, CYRUS (1834-). Born in Connecticut; professor of rhetoric and English literature at Yale from 1863 to 1884, when he was elected president of the University of Minnesota.

NORTON, CHARLES ELIOT (1827-1908). Born in Massachusetts. He was editor, with James Russell Lowell, of the *North American Review*; became professor of the history of art at Harvard College, retaining that position until he was made professor-emeritus in 1900. He represented the highest ideal of culture, was especially a student of Dante, and an authority on art. Among his writings are *Notes of Travel and Study in Italy* and *The Divine Comedy of Dante.* He was also the literary executor of Lowell, Emerson, Curtis, Carlyle, and Ruskin.

O'CONNELL, DENNIS J. Born at Charleston, S. C.; secretary to Cardinal Gibbons; head of the American College in Rome for several years; rector of the Catholic University of America, and president of the Catholic Educational Association.

ORIGEN (about 185-about 254). The most famous Christian writer and teacher of the third century; born in Alexandria. Educated at the famous Alexandrian School, under Clement, whom he succeeded as head of the Catechetical School. During the persecutions of the Christians by Maximinus he fled to Caesarea, where he ultimately succeeded in raising a school rivaling the fame of Alexandria. He was imprisoned and tortured for heresy, and died from the effects of his injuries. Few of his voluminous writings have come down to us.

OSLER, WILLIAM (1849-). American educator and physician; born in Ontario. In 1874 he was appointed professor of physiology and pathology in McGill University, and ten years later was elected professor of chemical medicine in the University of Pennsylvania; subsequently, professor in the Johns Hopkins University; at present in the University of Oxford. His writings include: *Histology Notes, Cerebral Palsies of Children, The Principles and Practice of Medicine.*

PAGE, DAVID PERKINS (1810-1848). Born at Epping, N. H. Principal of the State Normal School at Albany. His *Theory and Practice of Teaching*, the most popular of American pedagogical books, has given him a high place among the educators of the nineteenth century.

PALMER, ALICE FREEMAN (1855-1902). Born in Colesville, N. Y.; elected to the chair of history at Wellesley in 1879; acting-president the next year, and in 1882 appointed president; appointed non-resident dean of the women's department of the University of Chicago.

PALMER, GEORGE HERBERT (1842-). An American educator. Born in Boston; educated at Harvard and in Germany; became Oxford professor of natural religion, moral philosophy, and civil polity at Harvard in 1889; is a writer on classical and pedagogical subjects, his chief works being: *New Education, Self Cultivation in English, The Glory of the Imperfect.*

PARKER, FRANCIS WAYLAND (1837-1902). An American educator; born in Bedford, N. H.; principal of schools in Manchester, N. H., and Dayton, Ohio; superintendent at Quincy, Mass., and supervisor in Boston, Mass. In 1883 he was made principal of the Cook County Normal School, and in 1896 of the Chicago Normal School. He was appointed president of the Chicago Institute in 1899. His publications include: *Talks on Teaching, Course in Arithmetic*, and *How to Study Geography.*

PARKIN, GEORGE ROBERT (1846-). Principal of the Upper Canada College, Toronto (1895-1902). Author and lecturer on Imperial Federation, organizing representative of the Rhodes Scholarship Trust since 1902. Publications include *Reorganization of the British Empire, Imperial Federation, Geographical Unity of the Empire, The Great Dominion*, and *The Life of Dr. Edward Thring.*

PARSONS, FRANK (1854-). American educator. Born in New Jersey; professor of political science and economics, dean of College of Liberal Arts, Ruskin University, Mo.; director of history, Bureau of Economic Research, Washington; authority on railroads; noted lecturer on economics and sociology; has written *Our Country's Need, The Drift of Our Time, The New Political Economy, Direct Legislation*, and other works.

PAYNE, WILLIAM HAROLD (1836-). Born in New York State. Superintendent of schools for several years; professor of the art and science of teaching in the University of Michigan; chancellor of the University of Nashville and president of the Peabody Normal College; returned to the University of Michigan. His works include *School Supervision, Contributions to the Science of Education, The Education of Teachers*, and translations of several of Compayre's pedagogical books.

PEABODY, ELIZABETH PALMER (1804-1894). Born in Billerica, Mass. She became an ardent disciple of Froebel, and was one of the most active in introducing the kindergarten system into the United States. She published *Kindergarten Culture* and *Letters to Kindergartners.*

PESTALOZZI, JOHANN HEINRICH (1746-1827). A Swiss educational reformer, and the chief founder of modern pedagogy. He was, with the exception of Froebel, the greatest educational reformer since the time of the Revival of Learning. Realizing that social reform must come through education, he early allied himself with the reformers of the day. His principles were elaborated and carried out, and formed the basis of the Educational Movement of the nineteenth century. The modern enthusiasm for technical education is, for example, largely due to his teachings. In 1801 he gave a summary of his ideas on education in the book *Wie Gertrud Ihre Kinder Lehrt* (''How Gertrude teaches her children''). His great idea was to "psychologize education'' (his own expression). Pestalozzi's method is to proceed from the easier to the more difficult; to begin with observation and then pass to consciousness, and from consciousness to speech. Instead of the ''three R's'' he would substitute language, number, and form, as the elements of education. In his masterpiece, *Leonard and Gertrude*, he centers the education in the home itself, and seeks to reform the child's first teacher—the mother. What he strove for was not the mere enlightenment of the mind, but the regeneration of the race through sounder methods of education.

PLATTER, THOMAS (1499-1582). Swiss educator. For thirty-seven years professor of Hebrew at Basle. His autobiography is one of the best pictures extant of the school life of that time.

PRITCHETT, HENRY SMITH (1857-). Was assistant astronomer at U. S. N. Observatory, and later at Morrison Observatory; professor of astronomy at Washington University, St. Louis; superintendent of the United States Coast and Geodetic Survey; elected president of the Mass. Institute of Technology in 1900 and resigned in 1906 to accept the presidency of the Carnegie Foundation for the Advancement of Teaching.

QUICK, ROBERT HERBERT (1831-1891). An English educator; the first to lecture at Cambridge University on the history of education; wrote *Essays on Educational Reformers*, and other educational articles. The former is still a leading text-book in the study of education.

QUINTILIAN (MARCUS FABIUS QUINTILIANUS) (about 35-about 97 A. D.). A Roman rhetorician, born in Spain. Educated in Rome, he revisited Spain to teach oratory, but returned with Galba to Rome in 68. As a teacher of elocution he won great fame. Among his pupils were Pliny the Younger and the two grand nephews of Domitian. His modern reputation is based

on his great work *De Institutione Oratoria*, a complete system of rhetoric in twelve books.

RAND, THEODORE HARDING (1835-). Canadian educationist; born in Nova Scotia. Became superintendent of education for Nova Scotia, and later was appointed to a similar post in New Brunswick; professor of history and didactics in Acadia College; professor of education and English history in the University of New Brunswick. He was the founder of the *Journal of Education*.

RATICHIUS (Ger. **RATKE** or **RATICH**), **WOLFGANG** (1571-1635). A famous educational reformer; born at Wilster, Germany; first to apply the Baconian theory of induction in methods of education; his influence has been far reaching.

REMSEN, IRA (1846-). Born in New York; professor of chemistry at Williams College and at Johns Hopkins; president of Johns Hopkins University in 1901; editor of the *American Chemical Journal*; author of various works on chemistry, among which are *The Elements of Chemistry* and *Chemical Experiments*.

RICHARDS, CHARLES RUSSELL (1865-). American educator; director of science and technology at Pratt Institute (1888-1898); director of manual training at Teachers College, Columbia University (1898-1908); since 1908 director of Cooper Union, New York.

RICHARDSON, CHARLES FRANCIS (1851-). An American author and educator; born at Hallowell, Maine. Since 1882 he has been professor of Anglo-Saxon and English language and literature in Dartmouth College. His writings include *A Primer of American Literature*; *The Choice of Books*; and two octavo volumes, *American Literature*.

ROGERS, HENRY WADE (1853-). American educator and jurist; professor of law, University of Michigan (1883-1890); president of Northwestern University (1890-1901); professor of law, Yale (1901-1903); dean of law department, Yale, since 1903; joint author of *Two Centuries of American Law;* published *Illinois Citations and Expert Testimony*.

ROGERS, WILLIAM BANKS (1857-). Born in Cincinnati, Ohio; taught English and the classics at St. Ignatius and St. Xavier's; president of Marquette College for two years, and since 1900 president of St. Louis University.

ROSS, HON. GEORGE WILLIAM (1841-). Canadian statesman and educator. Born in Ontario, of Scotch parentage; appointed inspector of public schools for the county of Lambton, and towns of Petrolea and Strathroy; leader in promotion of normal schools, serving as inspector of them; author of *The History of the School System of Ontario*.

ROUSSEAU, JEAN JACQUES (1712-1778). A distinguished French writer of the eighteenth century; born at Geneva. In 1762 he published *Emile*, which had a marvelous effect throughout Europe, continuing in influence upon the whole educational world to the present time. In the opening sentence of his book he sounds the keynote of all his teachings: "All is good as it comes from the hand of the Creator; all degenerates in the hands of man." The burden of his message was nature, the nature of an idealist, perhaps, but still worthy of our efforts. Rousseau presented a negative idea of moral education. "The first education consists not in teaching the principles of virtue or truth, but in guarding the heart against vice and the mind against error." With him, all education was to come by development from within, an expansion of natural powers and not an acquisition of knowledge.

SCHURMAN, JACOB GOULD (1854-). Born on Prince Edward Island; professor at Acadia, at Dalhousie, and at Cornell, where he has been president since 1892; appointed by the president chairman of the U. S. Philippine Commission, he spent most of 1899 in the Philippines. Has written *The Ethical Import of Darwinism* and *Agnosticism and Religion*.

SEAVER, EDWIN PLINY (1838-). American educator, born in Northborough, Mass. He taught in the Boston schools and was superintendent of the same for fourteen years; is a member of the American Academy of Arts and Sciences, and the Massachusetts Historical Society. He is the author of the *Franklin Arithmetic*, *Algebra*, and *Trigonometry*, and the *Mathematical Handbook*.

SEELYE, JULIUS HAWLEY (1824-1895). President of Amherst College (1879-1890) and inaugurated the "Amherst system" of self-government; wrote a translation of Schwegler's *History of Philosophy*; *The Way, the Truth, the Life*, etc.

SEELYE, LAURENUS CLARK (1837-). Born in Connecticut. Pastor of North Congregational Church at Springfield, Mass.; later professor of rhetoric and English literature at Amherst College; first president of Smith College (1873-1909).

SEERLEY, HOMER HORATIO (1848-). President of Iowa State Normal School since 1886; president of N. E. A., 1884.

SHEPARD, IRWIN (1843-). Born at Skaneateles, N. Y. He has held various head masterships since 1871, but is more widely known as the permanent secretary of the National Education Association.

SLOCUM, WILLIAM F. (1857-). Born at Grafton, Mass.; president of Colorado College; extensive writer on sociology

SMITH, NORA ARCHIBALD. American author of kindergarten and children's books, born at Philadelphia. She taught in Mexico and Arizona and in 1880 entered kindergarten work in San Francisco, part of the time as superintendent; author of *Children of the Future*, *Kindergarten in a Nutshell*, *The Message of Froebel*, *Kindergarten Principles and Practice*, *Golden Numbers*, *The Posy Ring*, *The Fairy Ring*, and many others.

SPENER, PHILIPP JAKOB (1635-1705). Founder of the German Pietists; born in Alsace; in 1670 held meetings at his house to cultivate greater evangelical piety; reformed the methods of catechising and religious instruction for children; his ideas were practised later by Francke.

STRONG, FRANK (1859-). Born in Venice, N. Y. Principal of the High School, St. Joseph, Mo.; superintendent of schools at Lincoln, Neb.; lecturer on history at Yale; president of the University of Oregon (1899-1902); chancellor of the University of Kansas; author of *Life of Benjamin Franklin*, *A Forgotten Danger to the New England Colonies*, *Causes of Cromwell's West Indian Expedition*, and *Government of the American People*.

STURM, JOHANN (1507-1589). The most renowned teacher of his age, and has left his mark on the secondary school system of all northern Europe; born in Germany; reorganized the educational system of Strassburg. His plan aimed at an extended, systematic, and well-balanced course of study. His method of teaching Greek and Latin was by double translation. The important pedagogic ideas in his method were: subjects to be kept within range of pupils' ability; all teaching to be clear and definite; little at a time; all instruction should have an ethical and a spiritual side. The instruction in our classical preparatory schools of the United States still shows Sturm's influence in a marked degree, possibly tracing its origin through English public schools like Eton, Rugby, and Harrow.

SWEET, HENRY (1845-). English philologist; foremost British authority on phonetics as well as a distinguished Anglo-Saxon scholar. He has contributed largely to both subjects; in particular, his works on phonetics have done much to foster more scientific methods in the study and teaching of modern languages.

TERTULLIAN (QUINTUS SEPTIMIUS FLORENS TERTULLIANUS) (about 160-about 230). An early Father of the Church; born in Carthage, son of a Roman centurion; converted to Christianity; he was a man of great originality and genius, and his writings display great wit, keen imagination, and profound learning. His chief work is the *Apologeticus*, a weighty defense of Christianity.

THOMAS, M. CAREY (1857-). Born at Baltimore, Md.; the first woman to receive the Doctorate of Arts at a European university; in 1885 appointed professor of English, and in 1894 president of Bryn Mawr College.

THRING, EDWARD (1821-1887). A famous schoolmaster, head of Uppingham School, England, from 1853 until his death; pioneer of many important reforms in secondary education and public school life; first head master in England to evince sympathy with the liberal education of girls. To English composition, pursued *pari passu* with composition in foreign languages, he assigned a foremost place, while he held the opinion that English grammar, taught inductively and analytically, provided the very best basis for language training. His writings include *Education and School*, which sets forth his matured opinions on educational methods. Other books are: *The Theory and Practice of Teaching*, *Exercises in Grammatical Analysis*, also *School Sermons and Songs*.

THWING, CHARLES FRANKLIN (1853-) Born in Maine; president of Adelbert College and

Western Reserve University. His publications include: *American Colleges, The Reading of Books, Within College Walls, The American College in American Life.*

TUCKER, WILLIAM JEWETT (1839-). Born at Griswold, Conn.; professor at Andover, and founder of Andover House, a social settlement, in Boston; president of Dartmouth College from 1893 to 1909; author of *From Liberty to Unity* and *The Making and the Unmaking of the Preacher.*

UPSON, ANSON JUDD (1823-1902). Born in Philadelphia, Pa.; professor of logic and rhetoric from 1853 to 1870; in 1890 became chancellor of the University of the State of New York.

VAN HISE, CHARLES RICHARD (1857-). Educator and geologist; born at Fulton, Wis. Held the following appointments in the University of Wisconsin: instructor of chemistry and metallurgy, assistant professor of metallurgy, of mineralogy, and of archean and applied geology; professor of geology; elected president of the University (1903). He is the author of a number of books and papers on geological subjects: *Archean and Algonkian, Principles of North American Pre-Cambrian Geology, Some Principles Controlling the Deposition of Ores.*

VIETOR, WILHELM (1850-). German professor of philosophy in Marburg; one of the pioneers of modern language teaching by the "New Method" (*die neuere Richtung*); the author of many recognized works in modern language teaching, one of the best-known being *Elements of Phonetics* in German, English, and French.

VIVES, GIOVANNI LUDOVICO (1492-1540). Born in Spain; considered the most learned man of his time. After being tutor to the children of Ferdinand and Isabella he lectured at Paris and at Oxford, and taught Latin to Mary, future queen of England. He wrote several pedagogical books, *The Instruction of a Christian Woman* being the most popular book of the age.

VON CEULEN, LUDOLPH (1540-1610). Born in Holland; became teacher of mathematics in various cities of Holland, and professor in the University of Leyden; is famous for approximating the square of the circle, calculating the ratio of the circumference to the diameter to 35 decimal places. This number is called the Ludolph number, and the 35 decimals were cut into his tombstone. He wrote arithmetical works.

WASHBURN, GEORGE (1833-). American clergyman and educator; missionary in Turkey under the American Board of Commissioners for Foreign Missions (1858-1868); professor of philosophy and acting president of Robert College, Constantinople (1870-1877); president of Robert College from 1877 until his return to the United States in 1903.

WASHINGTON, BOOKER TALIAFERRO (1858-). American negro educator; born a slave in Virginia. In 1879 was appointed instructor in Hampton Institute, and introduced the night school, of which he took charge. In 1881 was appointed by the state to establish a colored industrial and normal school at Tuskegee, Ala., of which he is still the successful principal. He is known as an interesting and effective speaker, and for his work in uplifting his race. He has written *Up from Slavery* and *Character Building.*

WAYLAND, FRANCIS (1796-1865). An American educator and author; was graduated at Union College in 1813; assumed the presidency of Brown University in 1827, retiring after 28 years of service. He published several books regarding education, political economy, and religion.

WELLS, BENJAMIN WILLIS (1856-). American educator and editor; professor of modern languages at the University of the South (1891-1898). Besides numerous French and German text-books, he published *Modern German Literature, Modern French Literature,* and *A Century of French Fiction* (1898).

WELLS, WEBSTER (1851-). Mathematician and educator; born in Boston, Mass.; was graduated at the Massachusetts Institute of Technology in 1873, became associated with the department of mathematics in that institution, and was made full professor of that subject in 1893. His publications include *Logarithms* (1878), *University Algebra* (1878), *Plane and Spherical Trigonometry* (1884), *College Algebra* (1890), *Essentials of Algebra* (1890), *Complete Trigonometry* (1900), and numerous other educational books.

WHEELER, BENJAMIN IDE (1854-). Born at Randolph, Mass.; instructor at Brown and Harvard; professor of comparative philology and of Greek at Cornell and at Athens, Greece; president of University of California since 1899; wrote *The Greek Noun-Accent* and *Organization of Higher Education in the United States.*

WHEELOCK, ELEAZER (1711-1779). American educator; graduate of Yale College (1833); pastor (1735); 1754, opened a school to Christianize the Indians, with two Indian boys; 1764, increased to 30 pupils, mostly white youths; 1770, located the school at Dartmouth, N. H.; a charter from George III. gave it the title of college; in recognition of Lord Dartmouth's aid, called Dartmouth College.

WIGGIN, KATE DOUGLAS (*née* **SMITH**), or **MRS. GEORGE C. RIGGS** (1857-). Born in Philadelphia, Pa. She went to California, where she studied the kindergarten system and later organized the California Kindergarten Training School. She has written many kindergarten stories and books, also *Rebecca of Sunnybrook Farm, Penelope's Progress, Diary of a Goose Girl, Timothy's Quest, The Birds' Christmas Carol, Penelope's Experiences in Ireland.*

WILLARD, EMMA C. (HART) (1787-1870). Born in Connecticut; opened at Waterford (removing it to Troy in 1821) a seminary for the higher education of women, which she conducted with great success for seventeen years; one of the most noted women teachers of her time, her text-books having a large circulation.

WILSON, WOODROW (1856-). Born in Virginia; professor of history and political economy at Bryn Mawr, and at Wesleyan University, and of jurisprudence and politics at Princeton University, of which he has been president since 1902. He is the author of *A History of the American People.*

WIMMER, LUDWIG FRANDS ADALBERT (1839-). A Danish philologist; born at Ringkjobing, in Jutland; educated at the University of Copenhagen, where in 1876 he became professor of Norse philology. His contributions to the study of Scandinavian languages, and particularly to the study of runic writing, placed him among the foremost scholars in his line of study. His writings include *Old nordisk Formlaere, The Origin and Development of Runic Writing in the North,* and his great collection of Danish runes, *De historiske runemindesmaerker.*

WOOLLEY, MARY E. Born at South Norwalk, Conn. One of the first two women to receive the degree of A.B.; head of the department of Biblical history and literature at Wellesley College from 1895 to 1900; president of Mt. Holyoke College since 1900.

WOOLSEY, THEODORE DWIGHT (1801-1889). Professor of Greek at Yale until 1846, when he was chosen president, retaining the office 25 years. Among his publications are editions of the best known Greek dramas; also *Introduction to the Study of International Law,* besides many essays concerning religion and government.

WRIGHT, CARROLL DAVIDSON (1840-1909). An American economist, statistician, and educator; born in Dunbarton, N. H.; United States commissioner of labor (1885-1902); member of the anthracite coal strike commission (1902); one of the original trustees of the Carnegie Institution; president of the College Department of Clark University, Worcester, Mass.; wrote *The Industrial Evolution of the United States, Outline of Practical Sociology,* and numerous essays.

YOUNG, ELLA FLAGG (1845-). Superintendent of Chicago schools (1909); a teacher 47 years; district superintendent (1887-1899); professor of education, University of Chicago (1899-1905); principal of Chicago Normal School (1905-1909); member of Illinois State Board of Education since 1888; president of Illinois State Teachers' Association (1910); editor and author; president of N. E. A. (1910).

YUNG WING (1828-). Chinese official and educational reformer; born in Nan Ping, south China; entered a mission school at Macao; came to the United States in 1847; was graduated from Yale in 1854 (LL.D. 1876). Returning to China, he brought 120 Chinese youths to the United States (1872-1874) to be educated under the auspices of the Chinese government; was appointed associate minister resident in Washington for four years.

ZELLER, JULES SYLVAIN (1820-1900). French historian and educator; born in Paris. He was appointed professor of history at Aix in 1854, and was afterwards appointed to a position in the Sorbonne. From 1876 to 1888 he was general superintendent of higher education in France. Though voluminous he was not a particularly accurate or well-balanced historian. His most important work is *Histoire de l'Allemagne.*

DICTIONARY OF PEDAGOGICAL TERMS.

ABSOLUTE. That which is nowise relative.

ABSTRACT. A relative term implying that an aspect, quality, or relation of an object is considered as having a separate, independent, or substantive existence apart from the body possessing it. Abstract is the opposite of concrete.

ACADEMY. (1) A school or institution of learning ranking between a common school and a college. (2) A school where instruction is given in some special art. (3) An association of experts or learned men founded for the purpose of advancing the knowledge in some special art, science, or literature, or all of them.

ACCIDENTAL. That which is not essential or substantial. A further meaning makes it uncaused or fortuitous.

ACQUIRED. That which is added during the individual's life, from experience, to the original, innate equipment of the mind.

ACQUISITIVENESS. Relative ease of acquiring or learning; generally regarded as a natural fitness.

ADOLESCENCE. The period in the life of an individual, preceding the attainment of maturity.

ALUMNUS. A graduate of some college or higher institution of learning.

ANALYSIS. The act of separating a whole into its component parts for the purpose of studying their relation.

ANIMISM. The hypothesis, original with Pythagoras and Plato, that the universal soul (*anima mundi*), no matter how conceived, is the cause or principle of life.

ANTHROPOLOGY. The science of man or the natural history of mankind.

ANTHROPOMETRY. The science which deals with the measurements, physical proportions, and characteristics of the human body.

APPERCEPTION. A process of attention involving interaction between (1) the presentation of the subject to which attention is being given, (2) the whole of the previous matter relating to the subject and held in the mind, and (3) all of the performed mental processes. In education the term is used to denote the consideration and interpretation of new knowledge in the light and by the aid of that previously acquired.

ASSIMILATION. The union of thought elements by conscious process; or the association between like elements and compounds.

ASSOCIATION. In education the intentional and designed comparison of newly presented facts with other related facts already known.

ATTENTION. The act of the mind at work or beginning to work on a subject.

BOARDING SCHOOL. A school where pupils live at the institution, receiving board and lodging in addition to the instruction.

CALISTHENICS. The art, science, or practice of muscular exercise to promote health, strength, or grace of the body.

CAUSALITY. The necessary connection between events in point of time. It is opposed to the idea of logical necessity and to chance or freedom.

CHAIR. The seat of a presiding officer, or some other official, as a judge or professor; the office itself.

CLASSICAL COURSE. A course of study which includes courses in the Greek and the Latin languages.

CO-EDUCATION. The education together of persons of both sexes or of different races in the same institution of learning.

COGNITION. The state of being aware of an object.

COLLEGE. In the United States, an incorporated institution for the highest grade of learning. In France, generally a secondary school supported by the municipality.

COMMITTEE, SCHOOL. One or more persons elected or appointed to attend to the management of schools.

COMPARISON. The act of discerning the likeness and difference between two or more objects.

COMPOSITION. A brief essay, or exercise, written for practice in literary expression.

COMPULSORY ATTENDANCE. The forced attendance at school of children or illiterates by the laws of the government.

CONATION. The active element of consciousness which displays itself in tendencies, impulses, desires, and acts of the will.

CONCENTRATION. The voluntary centering of thought upon a subject.

CONCEPT. Cognition of a single whole as distinguished from the particular elements of which it is composed. It is a distinction between a universal and a particular.

CONCEPTUALISM. A psychological doctrine that the mind can form general conceptions of individual objects; it is opposed to both realism and nominalism.

CONSCIOUSNESS. The characteristic which distinguishes mental from all other life. It divides all that is mind from all that is not mind.

CONTENT. In logic, the sum total of the different attributes which constitute the meaning and are expressed in the definition of a certain conception.

CO-ORDINATION (of studies). A grouping of subjects mutually related in parts but essentially independent as branches of knowledge.

CORPORAL PUNISHMENT. Chastisement in which bodily pain is inflicted upon the subject.

CORRELATION. The forming of explicit relationships among the parts of a mental whole. In studies it is the arrangement of studies and topics with regard to their reciprocal relations. Topics in the same subject may be correlated as well as those which are related to topics in other subjects.

COURSE OF STUDY. The progression in a prescribed order of succession of the studying of one or more subjects.

CRAMMING. The process of crowding the memory with facts immediately before an examination; a hurried process of acquiring knowledge without assimilating it.

CRANIOLOGY. Systematic knowledge of the skull, including its anatomical, pathological, and morphological aspects.

CRANIOMETRY. A study of the skull with regard to its measurements as an indication of mental differences.

CULTURE. The result of mental and moral cultivation; a breadth of knowledge and refinement.

CURRICULUM. A specified fixed course of study in an institution of learning.

DAME SCHOOL. An elementary common school presided over by a mistress.

DEAD LANGUAGE. A language which is not in common, general use by a people, as Latin, Greek, or Hebrew.

DECLENSION. Modification of form in nouns, adjectives, and pronouns, to denote the relations of case.

DEDUCTION. A mental process or method in teaching, in order to anticipate the acquisition of further experience.

DEDUCTIVE REASONING. The form of reasoning by which conclusions are reached by necessary inferences from known premises.

DEGREE. An academical rank or grade conferred by a college or university upon its students in recognition of their attainments.

DEPORTMENT. Conduct, especially with regard to the courtesies and duties of life.

DIAGRAM. A simple drawing used to illustrate an oral explanation.

DIALECTICS. In education it is the art of teaching by means of discussion.

DICTATION. The act of expressing orally so that another may write down.

DIDACTICS. The science and art of teaching.

DIPLOMA. An official paper on which is a record of a degree conferred by some educational institution.

DISCIPLINE. Systematic training through education. The use of rewards and punishments to maintain authority. The term thus applies to both mental and physical training. The mental discipline resulting from some studies is greater than their cultural value.

DISCRIMINATION. A decision upon the difference between objects, each judged by the whole context of experience.

DISTRACTION OF ATTENTION. Inattention produced by stimulation of the attention to something else.

DISTRICT SCHOOL. A free, public school for children living within a specified district.

EDUCATION. The laws of human development as applied in the science and art of teaching whether accidental or purposive; the training of the mind and body by exercise and instruction.

EDUCATION, DEFINITION OF. The science and art of mental, moral, and physical development; the cultivation of the mind and manners, and the training of the body, through instruction and exercise.

EDUCATIONAL PSYCHOLOGY. That department of psychology which investigates the inner reaction that accompanies the manifold activities of man. The inner activities of man are educational.

EGO. Individual consciousness of the object-self as contrasted with the same individual's thought of another, known as the *alter*. Ego is the self; non-ego, the not-self.

ELECTIVE STUDY. In colleges and universities of America, an optional or non-compulsory course of study.

ELECTIVE SYSTEM. The system in vogue in many universities and colleges in which the taking of most of the courses of study offered is optional.

ELEMENTARY SCHOOLS. Schools in which first principles, the rudiments, or the initial part of knowledge are taught.

EMILE. A romance, named for the principal character, in which Jean Jacques Rousseau thinly disguised a treatise promulgating his radical views on education and natural religion.

EMOTIONAL TRANSMISSION. The communication of ideas or knowledge by arousing or appealing to the emotions.

EMPIRICAL. Relating to experience by being based upon, directed by, or derived from it. Opposed to rational.

EMULATION. Imitative rivalry; incentive to surpass or equal others. The Jesuits, in their teaching, called it "the whetstone of talent, the spur of industry."

ENDOWMENT. The settling a fund or making permanent provision for the support of any person or object, as a professorship.

ESSAY. A composition of a discursive nature but confined to a particular subject. ("Less methodical and finished than a treatise.")

ESSENCE. The necessary and constant nature of a thing as contrasted with its accidents.

ESSENTIAL. Relating to the constant and necessary nature of a thing. Opposed to accidental.

ETHNOGRAPHY. A branch of anthropology which deals with the study of human groups and organizations of society.

ETHOLOGY. The science of the formation of human character whether by individuals or in groups.

EXAMINATION. A process prescribed or assigned for ascertaining the qualifications or knowledge of a person who is a candidate for a certain rank.

EXCURSION, SCHOOL. A journey by a school with the purpose of gaining knowledge of conditions or objects by personal observation.

EXERCISE. Learning or training through doing or practice; also applied to the task, duty, or work which produces it.

EXPERIENCE. A phase or mode of conscious change; the events of the mental life as a whole.

EXPERIMENT. A change in phenomena purposely brought about in order to study the phenomena and to obtain knowledge regarding them.

EXPULSION. The non-voluntary dismissal of a person or thing, as a student from college.

FACULTY. In American colleges, the body of persons who do the teaching or instructing in a college or university or one of its departments.

FELLOWSHIP. In England, a position of privilege and emolument in a college which entitles the holder to the enjoyment of certain revenues and privileges. In America, an amount of money or a scholarship which enables a student to pursue his studies at a certain institution or abroad.

FORM. A grade, class, or rank of students in school; especially in England.

FORMAL CULTURE. The doctrine that mental power, derived from any form of exercise or by any means, is applicable to any department of human activity.

FRATERNITY. A body of men associated by some common tie for social purposes; a college secret society or club.

FREE SCHOOLS. (1) Schools which admit all pupils without discrimination and upon a footing of equality. (2) Schools supported by endowment or taxation so that no pupils pay tuition; public schools.

FROEBELIAN MOVEMENT. The movement advocating the Froebelian or kindergarten system of instruction. Its first principle is that the end and means of a child's education should be unrestricted, creative activity.

FUNCTION. Any conscious process which takes part in a larger group or system of processes.

FUERSTEN-SCHULEN. Schools in Germany founded by the territorial sovereign, in order to train poor but gifted youths for public service at the government's expense. (The first school was founded by Maurice of Saxony in 1543.)

GARDENS, SCHOOL. Gardens which are cultivated by school children.

GENETIC. Pertaining to or dealing with original production. Genetic science deals with the problems of origin and development. Genetic forces are those which produce results.

GERTRUDE, SAINT, OF EISLEBEN. B. 1256; d. 1311. She entered the convent of Helfta at the age of five and studied the liberal arts until the age of twenty-five. From that time she devoted herself to religious writing. She frequently experienced supernatural visions which she recorded in two books "Insinuationes Divinae Pietatis" and "Exercitia Spiritualia."

GRADED SCHOOLS. Schools divided into departments so that pupils pass from the lower to the higher departments.

GRADUATE SCHOOL. A school for students who have previously received degrees.

GRAMMARIAN. (1) One who has a fine knowledge of grammar. (2) Among the Greeks and Romans, one who was especially versed in any particular branch of learning, but especially one who excelled in the interpretation of poetical works.

GRAMMAR SCHOOL. In England, a school preparatory for college where Greek and Latin are taught. In America, the grade or department of grades where English grammar is taught.

GRAMMATIST. "A petty grammarian."—Webster.

GYMNASIUM. (1) In ancient Greece a place for instruction of the mind and for athletic exercise. (2) A school where the higher branches of science and literature are taught, especially in Germany. It is a classical rather than a technical school.

HEAD-MASTER. The master highest in authority in a school or seminary.

HERBARTIAN MOVEMENT. In pedagogy the followers of Herbart, laying emphasis upon his doctrine of apperception, put great stress upon the content of studies and the different processes of the mind.

HIGH SCHOOL. In the United States, the highest department in the free graded schools, coming between what is commonly known as the grammar school and a college or technical school; a free secondary school.

HONOR SYSTEM. The system practised in some schools of having no faculty supervision during examinations, the students being trusted to do only just and right things.

HUMANIST. One who in the time of the Renaissance, following the example of Petrarch, advocated by precept and example the study of classical, and especially Greek, literature.

HUMANITIES, THE. Learning and literature of a secular nature in opposition to the learning and literature of the nature of divinity. More particularly such subjects as the classics, poetry, philology, grammar, history, and archaeology were included under this head.

INCORRIGIBLE. One who is so constituted as to be incapable of any reform or amendment; one who is irreclaimable.

INDUCTION. The method of teaching by reasoning from particulars to generals.

INDUCTIVE REASONING. The process of reasoning from a part to a whole, or from particular cases to a general conclusion; opposed to deduction.

INDUSTRIAL SCHOOLS. Schools whose object it is to teach one or more branches of industry; schools for neglected children in order to reclaim them from bad habits and to teach them habits of industry.

INFANT SCHOOLS. A class or school for young children, ordinarily not over seven years of age.

INSTRUCTION. That mode of teaching whereby the pupil is informed and at the same time exercised for the attainment of knowledge and mental power.

INTEREST. The doctrine, in education, that the means (studies) should awaken the pupil's interest; and, conversely, that interest in the ends for which a pupil studies should arouse interest in the means.

INTERMEDIATE SCHOOLS. In the United States, that department of grades in the public school system which comes between the primary and grammar schools.

INTERSCHOLASTIC. Between schools, as an interscholastic debate.

INTROSPECTION. The close and critical examination by an individual of his own mental states and processes for the purposes of study.

INTUITION. In education, the grasp of knowledge through the use and employment of the senses.

JUDGMENT. The act of affirming, asserting, or predicating; also the mental function. The resulting affirmation, assertion, and predication is also a judgment.

KINAESTHESIS. The perception attendant upon muscular movements; the muscular sense.

KINDERGARTEN. A school for very young children in which play is the instrument of education in nature and society. The system was founded by Froebel (1782-1852). The first kindergarten was established at Blankenburg in 1837.

LABORATORY. A work room devoted to investigations or experiments in any branch of natural science.

LATIN GRAMMAR SCHOOL. A secondary school in which the study of the Latin grammar inordinately preponderated. It was introduced into America from England by the early colonists and the first such school was opened in Boston in 1635. It was of the gymnasium type of Germany and has been largely modified or in most cases displaced by the tendencies of modern education in the United States.

LECTURE SYSTEM. A system of teaching common in colleges, in which the professor, or other instructor, delivers discourses upon a subject to supplant or supplement the use of text-books.

LESSON. Something assigned to a pupil to be learned or studied for one recitation.

LIBERAL EDUCATION. An education of wide, ample scope and extent so that the mind is master of its own powers, irrespective of one's occupation.

MANUAL TRAINING. In schools, the educating of the hands to do various kinds of work, which supplements the mental training received.

MARK. In schools, a significant character or sign indicative of a pupil's standing or grade in one or more subjects.

MATRICULATION. The act of enrolling or registering, as in a college or university.

MEMORIZING. The act of committing to memory, or learning by heart.

MEMORY. The mental process which reproduces and recognizes prior experiences in their proper relative time order. The three mental functions, reproduction, recognition, and localization, are concerned in an act of memory.

MEMORY, DEFECTS OF. The chief classes are excess and defect. Amnesia is the name given to failure of retentiveness; paramnesia is a false memory or illusory memory; hypermnesia is an unusual exaltation of memory.

MENTAL DEVELOPMENT. The sum total of the processes through which the individual mind passes from birth to death.

METHOD. A systematic procedure in teaching and training

MILITARY SCHOOL. A school where, in connection with other instruction, the students are taught subjects pertaining to war, and especially the drills.

MIXED SCHOOLS. Coeducational schools.

MONASTICISM. The corporate life of communities of religious persons, who are bound by the three vows of poverty, celibacy, and obedience to a superior.

MONITOR. A senior pupil who instructs or looks after a class lower than his own.

MONITORIAL SYSTEM. The system used in some schools of using a senior pupil to instruct and look after a junior division or class; in some colleges in the United States, a pupil or student who keeps a record of the attendance of fellow students at certain exercises, as morning chapel.

NATURALISTIC MOVEMENT. The movement which, disregarding the supernatural, promotes the theory that the universe, and the world of experience, can be accounted for by methods similar to those of natural science.

NIGHT SCHOOLS. Schools, public or private, conducted in the evening for the benefit of the laboring classes.

NOMINALISM. The doctrine that wholes or universals have no objective existence. It goes further and holds that universals are only names adopted for convenience.

NORMAL SCHOOL. A training school for teachers. The methods are conformable to the highest standards and fixed rules.

OBJECT-LESSON. An exercise in the class room upon some concrete object, as a plant, mineral, or animal.

OBSERVATION. In education, the acquisition of knowledge by direct sense-perception. It is regarded as one step in a rational method of teaching.

PAROCHIAL SCHOOLS. Schools under the management and administration of a parish church.

PEDAGOGICAL PSYCHOLOGY. The application of psychology to the science and art of teaching.

PEDAGOGICS. The theory and practice of teaching as a profession; in it the sciences of the mind, of body, and of society are systematically applied to the work of education. It depends upon psychology for its methods, and upon civilization for its ends.

PEDAGOGY. The science or art of teaching; pedagogics.

PEDANTRY. The overestimate of mere knowledge; the vulgar or uncalled for display of learning.

PERCEPT. The cognition which results from actual sensation and not from a mental picture.

PERIOD. In schools a certain definite division of time devoted to a recitation or some school duty.

PHILOSOPHICAL SCHOOL. A system of philosophy, delivered by particular teachers, as the Socratic school.

PHYSIOLOGICAL PSYCHOLOGY. Investigates the vital processes which require the simultaneous application of the external and internal tests and methods of observation. It deals with the corporeal manifestations of mind.

PLAYGROUND. A piece of ground set apart for outdoor recreation.

POSTGRADUATE. Relating to an advanced course of study intended for students who have graduated.

PRECEPTOR. A teacher, instructor, principal, or tutor.

PRIMARY SCHOOLS. In the system of public schools in America the department of one or more grades that come between the kindergarten and the intermediate department.

PRINCIPAL. The chief or head teacher in a school.

PROFESSOR. One who teaches any branch of learning, especially in a university, college, or seminary.

PSYCHOLOGY. The science which deals with actual psychical processes, and treats of their objects, and of the conditions of their occurrence. Kulpe defines it as "the science of the facts of the experience in their dependency upon experiencing individuals." The science originated with Aristotle, who did more for psychology than any other individual contributor. Practically but slight advance was made in the science between his time and that of the birth of the modern

science. Descartes, Hobbes, and Spinoza are among the illustrious names during the earlier modern period. Incidentally Locke made important contributions to the science; among others he invented the expression "association of ideas." Hartley, Hume, and the two Mills, Herbart, Bain, Condillac, and Beneke are the chief workers in the field of the "new" psychology. Darwin, Spencer, Romanes, Morgan, Dahl, Wasmann, Bethe, Mills, and others contributed largely through the field of biology. Tarde, Baldwin, and Durkheim in the field of anthropology; Preyer, Baldwin, Miss Shinn, Sully, and many others in the field of child study; and Weber, Fechner, Helmholtz, and Wundt in the field of physiological psychology, have been prominent contributors to the science.

QUIZ. In colleges in the United States, an oral or written examination or review.

RATIONAL. Pertaining to the reason, being derived from, directed by, or based upon it. Opposed to empirical.

REALGYMNASIUM. A semi-classical school in Germany whose graduates were not admitted to the universities until the decree of the emperor near the beginning of his reign.

REALISM. (1) As the direct opposite of nominalism, this doctrine states that universals, such as genera, have an existence independent of our conceptions and are real things or entities. (2) As the direct opposite of idealism, this doctrine holds that to our sense perception a direct, individual, external object at once presents to our cognition itself, instead of an object representative of its genera or type.

REALSCHULE. A higher grade school, in Germany, which is not a classical secondary school but includes in its curriculum, besides various industrial courses, German, French, Latin, history, geography, geometry, mechanics, and drawing.

REFORM or REFORMATORY SCHOOLS. In the United States, schools supported by the government for the confinement and instruction of juvenile persons of idle or vicious habits.

REGENT. (1) An overseer or trustee, as of a university. (2) In England, a resident master of arts or a doctor in a university during his first period of a few years of residence. (3) In New York state, a member of the corporate body of the University of the State of New York. These regents have certain supervisory powers over incorporated institutions of learning and the public schools of the state.

REGISTER. An official record of a class or school in which is a list of the pupils and certain information concerning them.

RELATIVITY. Every aspect or phase of experience is influenced by every other aspect or phase of the experience at the same instant. This is called the law of relativity. There is a sense of relativity which conveys the idea that we can know about things only as they affect our minds, and not as the things themselves really are.

RHETORS, SCHOOLS. In ancient Greece. Schools for the object of studying rhetoric, or the art of persuasion by harmony of language. The curriculum covered courses in oratory, deliberative, epidictic, and judicial; and more strictly in rhetoric: invention, disposition, elocution, memory, and delivery.

SCHEDULE. A catalogue or list of courses of studies.

SCHOLARSHIP. (1) Learning. (2) A foundation for the maintenance or support of a student.

SCHOLASTICISM. (1) The name applied to the system of philosophy, taught in Roman Catholic institutions of learning, which is based upon the teachings of the early church fathers, as Augustine and Jerome, the teachings of Aristotle and of certain Arabian commentators. (2) That period in the history of philosophy in the Middle Ages, in which theology predominated over philosophy and which was characterized by excessive subtlety and refinement in reasoning.

SCHOOL BOARD. School committee.

SCHOOLMEN. The philosophers of the Middle Ages (eleventh century to the Reformation) who sought to apply the methods of philosophic thought to Christian dogma so as to place it upon a logical, scientific basis.

SECONDARY SCHOOLS. Schools not of the highest order, as high schools.

SELF-ACTIVITY. A change produced within a being through determination and without destroying the identity of the being.

SEMESTER. A term of one half the college or school year.

SEMINARY. A school of high grade, as a college or academy.

SENSE-PERCEPTION. A mode of consciousness produced by the present operation of an external stimulus upon the nervous system. It takes cognizance of all objects, independent and real.

SOCIAL CONTRACT. The implied agreement of men living together in one community or country to create and organize and abide by some form of government; and this agreement is the foundation of political society.

SOCRATIC METHOD. (1) The process of arriving at fundamental generalizations by an inductive method of question and answer. (2) The form of instruction described in the Dialogues of Plato, often called the "dialogic method." It is made up of two parts: (*a*) The Socratic irony to clear the mind of false or absurd ideas, and (*b*) the attempt to cause the student to discover fundamental definitions by inductive reasoning instigated by question and answer.

SPECIALIZATION. In colleges the act of taking many courses in one or two subjects to the exclusion of other subjects.

STATE UNIVERSITIES. Universities wholly or partially supported by taxation within one state.

SUMMA THEOLOGIAE. The most extensive work of Thomas Aquinas, attempting to give in the form of the scholastic method of philosophizing a complete theological survey of the divine, human, and natural worlds. Its chief contents are derived from the famous *Book of Sentences* collected from the Christian Fathers by Peter the Lombard and classified after the manner of Abelard into affirmative and negative statements (*Sic et non*). This work of Aquinas is one of a hundred similar expositions that exist in manuscript, and many of them in print.

SUPERINTENDENT, SCHOOL. One who has general oversight and charge of the schools of a certain district.

SUPERVISOR, SCHOOL. An overseer or superintendent of the instruction in one or more subjects taught in the schools, as a supervisor of drawing.

SUSPENSION. The compulsory, but temporary, cessation of attendance at school.

TECHNICAL SCHOOLS. Schools where the instruction tends to fit the students for some art, science, or trade; most frequently the mechanical arts are specified.

TEST. An examination or review.

TEXT-BOOK. A book used by students as the basis of their instruction.

THREE R'S, THE. Reading, writing, and arithmetic—readin', 'ritin', 'rithmetic.

TRADE SCHOOLS. Schools where the pupils receive instruction in some craft or business, as well as mental instruction.

TRUANT. A child who stays away from school without permission.

UNDERSTANDING. The mental instrument of scientific knowledge as opposed to reason, the instrument of philosophic knowledge. To the understanding all things are relative; and the faculty deals with all things and events dependent upon environment.

UNIVERSITY. An institution for the instruction of students in the higher branches of literature, arts, and sciences with the power to confer degrees recognized throughout the world as valid. It may or may not include a college, or may consist of many under one general administration.

UNIVERSITY EXTENSION. A plan, originating in England, for extending the influence and instruction of universities outside the site of the institution by means of classes and lectures at important centers.

VACATION SCHOOLS. Schools, either public or private, which hold their sessions in the time of the long vacations of other schools.

VOLITION. The decision upon a psychic issue by an individual.

BOOK XII.

ETHICS.

RELIGION.
Mural Decoration in Congressional Library, Washington.
BY CHARLES SPRAGUE PEARCE.

HISTORY OF THE DEVELOPMENT OF RELIGION. ETHNIC AND NON-CHRISTIAN RELIGIONS: ZOROASTRIANISM, BRAHMANISM, CONFUCIANISM, TAOISM, MOHAMMEDANISM, PRIMITIVE RELIGIONS. DICTIONARY OF MYTHOLOGY. CHRISTIANITY: EARLY, MEDIAEVAL, AND MODERN CHURCH. SCHOOLS OF PHILOSOPHY, ANCIENT AND MODERN. DICTIONARY OF TERMS, RELIGIOUS AND PHILOSOPHICAL. PROHIBITION. RELIGIOUS AND ETHICAL WRITERS AND REFORMERS. RELIGIOUS STATISTICS OF THE WORLD.

Religion of Ancient Egypt.—Ancient Egyptian religion had its origin in the low animism, or fetichism, of African tribes. Every village in those earliest days had a god or supernatural power which was worshiped as dwelling in a tree, a grove, a cave, or in some animal. Naturally, as civilization progressed, the special gods or demons of the larger and more important cities predominated, and in time alone survived. The worship of the sun developed at a very early day, and is spoken of in the religion by various names, such as Rê and Horus. Heliopolis had its own sun god, Atmu. Osiris was a local god of Abydos and Busiris. Gradually all of the gods came to be regarded as a form or variation of the sun; consequently there was no logical system possible, though Amenophis IV. sought to systematize religion and to have the sun regarded as the supreme source of light and power. This attempt at monotheism, though ardently carried forward by this king, did not endure longer than his own reign. While the higher thought tended toward pantheism, it was for a long time impossible to eradicate the ideas of fetichism that prevailed in the popular mind, which worshiped animals as the abode or dwelling place of their gods. It was the Greeks who failed to comprehend the ideas of the common people regarding these gods, and sought to regard them as symbols of loftier ideas. The ibis, Thoth, was regarded as the father of science and letters, and corresponded in the Greek mind to Hermes or Mercury. Ptah, worshiped at Memphis, they regarded as one of the creators of the world. He resembled Hephæstus or Vulcan. The chief god of Egypt after 1600 B. C. was Ammon of Thebes, who was a sun god. His wife, Mut, was the sky, and their child, Khonsu, was the moon. Min was the harvest god. In Elephantine the ram, Khnumu, and the goddesses, Anuket and Satet, presided over the harvest. Semitic gods were introduced under the new empire, and Baal, Astarte, Kadesh, and others, were highly esteemed. Among the animals worshiped by the Egyptians were the bulls, Apis at Memphis, Mnevis at Heliopolis, and Bachis; and the goat. Isis, the sister and wife of Osiris; Anubis, the custodian of the lower world; Set, the representative of the forces of nature opposed to the sun, and the god of war after 1000 B. C., were among the more important of the many gods

in Egyptian mythology. The Egyptians firmly believed that there was a spiritual part of man that existed after death. Man was considered in a threefold aspect: the mortal body, the living soul, and a ghost or double that existed during life and after death. As this ghost might inhabit the mortal body after death, the Egyptians considered it necessary to embalm their dead so as to keep the body always ready to receive this spiritual guest, and as they believed that it experienced the appetites, the relatives of the deceased provided food and other articles of comfort. Many ideas prevailed as to the abode of the soul after death; the most prevalent opinion was that the soul of the deceased was led by the god Anubis to the realm of the dead through pathways beset with dangers and difficulties, to be judged by Osiris and his 42 associates. It was believed that the famous Book of the Dead, if deposited with the body, would serve as a safe conduct through all of these dangers, and that the deceased could safely enter the hall of judgment. The penalties of adverse judgment were very horrible; a favorable judgment insured eternal abode in the Elysian Fields and perpetual banquet at the table of Osiris. They believed in the ability of the dead to return to earth by exercise of certain magical formulæ. A subsequent final judgment was passed upon the soul of the deceased by the 42 associates separately, which would seem to indicate that a very high degree of morality obtained among the better classes of Egyptians.

Babylonian and Assyrian Religions.—The religions of these two peoples were identical. Nature worship prevailed and the several objects in nature were personified. The sun and moon occupied the first place in this system. Each of the nature gods was associated with some particular place, and a deity seemed to grow in importance as the place to which he was attached developed. The god of the ancient capital, Asshur, called by the name of the city, grew to be chief god among all gods of Assyria, just as Marduk, the presiding god over the city of Babylon, became the center of the Babylonian system. Though the capital of these dominions was frequently changed, it would appear that both Asshur and Marduk had become so well established that they held their prominent places in the respective religions of these countries. Hymns, prayers, omens, and incantations formed an important part of the system of worship in these countries, and it appears from the Babylonian literature, dating before 2000 B. C., that there was a very complete form of ritual in use in Babylonia. The lofty spirit that breathes through many of these hymns and prayers seems to justify the opinion that out of the old ceremonies there grew a very close resemblance to the monotheistic conception of divine government, as found in the writings of the Hebrew prophets. It is indicated that at a later day the several gods did not disappear but were merged into the great central deity, Marduk, who seemed to concentrate in his own person all of the attributes and powers which had previously been shared by many local gods. As a part of the Babylonian and Assyrian worship, great temples were built at the several capitals of the country, and the architecture of these was wholly Babylonian in design. Assyrians introduced a means of learning the will of the deity by means of oracles and omens, and the works of the Babylonian priests stored up in the archives in the temples yielded a vast fund of literary production which served as a model for the later Babylonians and for the Assyrians. The earliest of these archives were written in cuneiform letters upon tablets of clay afterward baked hard.

Brahmanism is a philosophical and religious system established by the Brāhmans, the priestly caste of India, and based on the *Vedas*, the most ancient of the sacred books of that country, and its first literary productions. They are supposed to date from about the fifteenth century B. C., and consist of hymns, incantations, and sacrificial prayers addressed to the elements and powers of nature: Fire, the heavenly messenger and carrier of the sacrifice to the gods; Surya, the Sun; the Moon, etc., all personified. No one is superior to the others; but three—Fire, Wind, and Rain—were sometimes united into one as god, and were special objects of worship.

In connection with the worship of the divinities there grew up a system of sacrificial ritualism, etc. This was laid down by the Brāhmans in prose works called *Brāhmanas*, *Sutras*, and *Upanishads*. These have been tacked on to the *Vedas*, and are the foundation of all the higher thought of India.

Brahmanism identifies all the forces of nature with a spiritual being which when unpersonified is called Brahmā, the primordial essence, the only real entity, absolute, eternal, immaterial, invisible, and unappreciable by the senses. It receives no worship, but is an object of abstract meditation, the only way by which absorption into it and deliverance from life can be attained. Whatever appears to exist is identical with that spirit, and the end and aim of man should be to reunite with it. When dominated by activity this becomes Brahmā, the creator; as a disintegrator or destroyer it is called Shiva, and as a preserver Vishnu; and when manifested in the highest order of men Brāhmana or Brāhmans. These last formed a priestly class, and when the four castes were evolved they became the dominant caste, "holding in their hands the ministry of holy things and the performance of the sacrifice."

Another institution peculiar to Brahmanism prior to Buddha was the transmigration of the soul (but Buddha denied the existence of the soul). Everybody is subject to death and rebirth until absorbed into Brahmā. As in Buddhism *desire* during life was the cause. Desire produces action, and action, whether good or bad, is finite, and holds the actor within the chains of finite existence. It is only when one knows this and, acting on his knowledge, eradicates desire by separation from the world, that he secures release from the chains of finite existence and attains to Brahmā.

Out of Brahmanism has grown *Hinduism*. It differs from the former chiefly in giving little regard to Brahmā, the primordial essence, as well as Brahmā, the creator, but worships in place of both the popular deities, Vishnu and Shiva, modified to some extent by the creeds of the Buddhists and the non-Aryan races of India,

and the aborigines. It is polytheistic rather than pantheistic. Vishnu is the most popular of the deities, and has had *avatars* or incarnations (literally "descents") in different forms for different purposes. Shiva, the destroyer or disintegrator, has many votaries. He is of a gloomy nature, and is represented as sitting absorbed in thought, naked, with matted hair, a necklace of human skulls, and smeared with ashes. He has three eyes, and fire from them consumes those who disturb his devotions. Saraswati, the wife of Brahmā, is the goddess of learning; Lakshmi, the wife of Vishnu, is the goddess of prosperity; Devi or Durga, the wife of Shiva, is also the object of worship; and there are many others: as, for example, Indra, the god of the firmament;; Varuna, of the waters; Agni, of fire; Kuvera, of wealth; Kama, of love; and Yama, of the infernal regions. The followers of Vishnu and Shiva are broken up into a great variety of sects and divisions. There are also many mendicant orders.

The caste system is one of the most prominent features of Hinduism. We have already seen the rise of the Brāhmans. The other castes are: the Kshatriyas, or warriors; the Vaisyas, or husbandmen; and, lastly, the Sudras (originally the slaves), or servants. Each has its own place in the social system and must observe the laws peculiar to itself. The chief distinction between them appears to have been occupation, but there is now much relaxation, and a great many mixed castes have arisen. The highest law which concerns the Hindu is to eat correctly, drink correctly, and to marry correctly; that is, in accordance with the rules of his caste.

Zoroastrianism is the dualistic system taught by the ancient sage and prophet Zoroaster (or Zarathustra) of ancient Iran or Persia. He was born about 1000 B. C., and was killed during certain military operations at Balkh. His coming had been foretold, and at his birth all nature rejoiced, though the demons and the powers of evil tried to prevent it. At seven he was placed in the care of wise and learned men. At 15 he came of age, assumed the "sacrificial thread," began his religious preparation; at 20 he abandoned the world and its ways, and, desirous of laying hold of righteousness, left home and led a wandering life, denouncing demon worship, and inquiring for those most desirous of righteousness and the nourishing of the poor.

Revelation came to him at 30, after the "archangel of good thought" had come to him and led his soul in holy trance into the presence of God—Ahuramazda. His teachings are found in the work known as the *Avesta*, or *Zend-Avesta*, the "Book of Wisdom."

The system is a modified dualism. It recognizes two creative powers: Ahuramazda, or Ormazd, the god of light and the creator of good; and Ahriman, the god of darkness and the creator of evil; and between these two there is continual war. Ormazd, however, will in the end overcome Ahriman, and to this extent it is seen that while coexistent they are not coeternal.

Ormazd has six principal ministers called in Persian *amshaspands*, "immortal holy ones," who assist in administering the Kingdom of Light. There is also a very great number of angels, "wonderful ones," who guide the forces of nature and carry out the heavenly decrees in the governance of the universe. On the other hand Ahriman has a similarly large array of fiends, arch-fiends, demons, and evil spirits, who contend with the ministers and angels of good, keep the world in disorder, and strive to destroy the soul of man; and so the warfare of the principles of good and evil goes on.

Man's state after death depends on the preponderance of good or evil in his life. An evenly balanced account is provided for. The good in the universe will finally prevail, and Ahriman and his ministers, as well as man himself, will be redeemed from all evil. This struggle is to last 12,000 years. During the last 3,000 years each millennium will be presided over by a prophet or saviour of the seed of Zoroaster. The last one will preside over the resurrection; the world will be renewed and eternity will begin. The forces of evil will be utterly subdued, wicked men will disappear, and righteousness will be established.

Zoroaster's ethical teachings call for good thoughts, good words, good deeds. The purity of both body and soul must be preserved. The elements of fire, water, and earth must be carefully shielded from defilement, especially from contact with dead matter; hence the exposure of the dead, even at the present day, on "towers of silence" to be devoured by birds and dogs. (See MAGIANISM.)

The *Parsees* or *Parsis* (fire-worshipers) are the remnant of the Zoroastrians, especially in India, where, in 1906, they numbered 94,190. About a hundred years after the Arab invasion in the seventh century and the fall of the Iranian kingdom, a community of Zoroastrians, with their priests, moved down to Ormuz on the Persian Gulf to gain greater religious freedom. After 15 years they moved to India, remaining for 19 years, when they went to Sanjan, north of modern Bombay, and settled among the Hindus. With a second band they formed a flourishing community which existed for five centuries. The Mohammedans attacked them in 1315 and the Parsees were driven away, but in the sixteenth and seventeenth centuries they spread widely in Gujarat. Bombay is the center of the Parsee settlement in India, although they are found in other parts of India. As a class the Parsees are very well-to-do.

They have generally kept the tenets of their ancient creed, though not free from controversy, as there is evidence of several vigorous disputes with clerical leaders, one dispute over the calendar having led to a division.

The Parsees have kept for time immemorial the idea of ceremonial purification; care is taken to keep earth, fire, and water free from dead matter. Some of the less rigid belong to the fire department in Bombay, blow out a light, and smoke tobacco. They object to being called "Fire-worshipers," for their religion teaches that fire stands as an emblem of power of Ormazd only. They continue to wear the sacred shirt and girdle, and the priests are distinguished by their flowing white robes.

The Parsee observances connected with birth and marriage have somewhat modified, but the death rites remain unchanged. Their morality is of a very high order. They are noted for their charity, benevolence, and generosity. They

are very progressive in education, especially of women, being much inclined to follow European examples. Numerous editions of their ancient sacred literature and reprints of *Avesta* and *Pahlavi* texts are published every year.

The Parsees in Persia, about 9,000 in number, are called Ghebers, the origin of which name is questioned. It is applied as unbeliever to all non-Mohammedans. The misfortunes of these followers have been many and varied. The final conquest of Persia by Islam changed its religious life completely, the teachings of Allah and his Prophet being generally adopted. Those who were loyal to their faith and remained have endured persecution and oppression till they have decreased to a mere handful.

Magianism, or **Magism,** the cult which probably formed the basis of Zoroastrianism, the general tenets of which are the same. It seems to have been in existence long before Zoroaster's time, and is referred to by Herodotus, the "Father of History" (484-424 B. C.). It held to the doctrine of Ahuramazda, and the conflict of good and evil, believed in the resurrection, in a future life, the advent of a saviour, in the preservation from defilement of fire, earth, water,—especially fire. Fire altars were maintained and the fire was never allowed to go out, etc. Herodotus connects them with one of the six tribes of Media or western Iran, while Zoroaster, who himself was a Magian, labored mostly in Bactria or eastern Iran. The members of the priestly order were reputed to be very wise and learned, skilled in divination, connected with the priesthood of Babylonia and Chaldea, and seem to be referred to in Jeremiah xxxix, 3 and 13, where it speaks of Rab-mag, "chief of the Magi." By the time that Luke wrote Acts xiii, 6, the name had fallen into disrepute and denoted wizard, necromancer, magician, or sorcerer, etc. The wise men who came from the East in search of Him who was born King of the Jews, as mentioned in Matthew ii, 1-12, were also Magi.

Taoism, the Chinese philosophic teachings, hard to understand, of an old mystic named Lao-tse, the "Venerable Master" (or "Philosopher"). Little that is absolutely certain is known regarding him, though he is noticed in the great historical work, *Shi Ki* of Sze-ma Ts'ien, 100 B. C. He was born in 604 B. C., was partly contemporary with Confucius, who visited him when the latter was 50. Lao-tse was State Librarian and keeper of the Imperial Archives at Lo-yang (in the present Honan), the capital of the Chow dynasty (1122-220 B. C.), and Confucius had journeyed thither to deposit a book for preservation and to ask about "ceremonies."

His teachings are found in a small book of 5,000 words called the *Tao-teh-king*, "the classic of *tao* and virtue." The chief trouble in interpreting it lies in the translation of the word *tao*, which as found in the dictionaries means "road," "path," "way," "doctrine," "reason." His work has been described as treating of "the doctrine of the way," that is, of the eternal way of right conduct; some call it "Rationalism," while others speak of it as "Naturalism." In this sense it inculcates the practice and cultivation of naturalness in conduct, and the innocence and simplicity of early life and of former times, and refers to individual conduct rather than to the settlement of state and social problems, degenerate though the state then was. He inculcated unselfishness under the simile of an empty vessel. It is the "emptiness" that makes it a useful vessel. He also inculcated humility under the simile of water, which, though benefiting all, always seeks the lowest place; and he taught that unkindness should be requited with kindness. Chu-hi, the great scholar and speculative philosopher of the twelfth century, summed up Taoism as "the doctrine of surrender to others."

When and where Lao-tse died is not known. As he passed out one of the frontier gates leading toward Tibet he handed the manuscript of his book to the warden.

Taoism is also styled a "religion," but Lao-tse had nothing to do with it. During the centuries immediately preceding the Christian era a body of superstitious and fanciful notions about alchemy, geomancy, genii, immortality (in the flesh), the elixir of life, the "herb of immortality," etc., had grown up and was tacked on to *taoism!* The feudal system had been broken up, and the warrior who had accomplished this after centuries of war and bloodshed had proclaimed himself the First Universal Emperor. He then gave way to his hatred of the teachings of Confucius in regard to good government, resolved to wipe out such "pernicious" doctrines, burned all the books of that cult, and buried alive the scholars who had protested; and in the general disorder that prevailed these vagaries arose. Then nearly three centuries later, when Buddhism from India was introduced (67) and found favor everywhere from the emperor down, it was found necessary by some to counteract this alien system. Rites and ceremonies were evolved, temples and monasteries were built, and idols were set up; a taoist hell and purgatory were invented, and in imitation of the Buddhist Trimurti, a triad of "Three Pure Ones," of which Lao-tse is one, was established. A priesthood was introduced, and at the present time the priests are supposed to possess magic powers; they tell fortunes, etc., regulate the popular feasts, say prayers for the sick, chant prayers at funerals, etc. They have a sort of hereditary "pope," one Chang Tao-ling, who, like the lineal descendant of Confucius, has the rank of duke. An ancestor of his had compounded a pill of immortality and swallowed it!

Confucianism.—The teachings of the noted Chinese sage (551-478 B. C.), known to his own countrymen (especially since about the Christian era) as *K'ung-fu-tse*, that is, "K'ung, the Philosopher,"—K'ung being his family name—but known to Occidentals as *Confucius*, a latinized form of the native name. He was not a writer, the only thing from his pen being a small work of about 15,000 words, called *Spring and Summer*, containing a most meager statement of the annals (from about 742 B. C.) of his native state, Loo, in the modern province of Shantung. As a great scholar and archæologist he collected the traditions and existing historical documents, and the ballads and poetry of his own and preceding ages, and edited and arranged them, destroying whatever was trivial and untrustworthy. These form the

basis of the Chinese classics. As a public teacher he attracted many disciples, and it is principally from his scattered sayings collected by them long after his death and explained by later disciples, such as Mencius of the third century, B. C., and Chu-fu-tse, a great speculative philosopher of the twelfth century, that we can glean his doctrines and piece them into a system. They seem to have related to the well-being of man as an individual, and in relation to his family, his neighbors, and the state. The times in which Confucius lived were characterized by the most deplorable bloodshed, cruelty, and oppression. The feudal system had broken down; the vassal princes warred constantly against the emperor and among themselves, and with the departure of peace went prosperity. His aim was to remedy these conditions, and restore the universal happiness, virtue, peace, and prosperity which had prevailed in times of the ancient kings, 23 centuries before Christ, who by their virtues and their examples had introduced and maintained an age of universal concord. Hence the sage was forever pointing back to antiquity (and the Chinese have been looking back ever since); his models were there and inculcating the duties of the five relations of life as between prince and subject, parent and child, husband and wife, brother and brother, friend and friend. "When the prince is prince," said he, "and the minister is minister, when the father is father, and the son is son, then there is good government, righteousness will prevail, and the people will be happy, contented, and prosperous." It is thus seen that the system is purely ethical and political, and concerns itself exclusively with man as an individual, and in relation to his family and society, and cannot properly be classed as a "religion" or as one of the three religions of China—as is commonly stated. "Respect the gods," said he to his disciples, in answer to a query, "but have as little to do with them as possible."

The princes rejected his lessons, and two centuries later, when one of the princes had wiped out all the others and proclaimed himself the first "Universal Emperor," he showed his repugnance to the system by ordering the burning of all books relating to it, and put to death all the scholars who protested. Two or three centuries later interest in it revived, the memory of the author was ennobled, a "temple" in his honor has been erected in every city of the land, and he is universally reverenced, not worshiped.

Greek Religion.—The religion of the Greeks passed through several stages in its evolution from mythology to religion. What is true of the Greek religion at one time and in one place is often not true of the religion at another time or in another place. The relations between the gods and the Greeks were friendly. The Greeks felt the limitations of human power, and appreciated to the full the might and dominion of the several gods. The commonest outward acts were those of propitiation or seeking favor for the success of future enterprises, and thanksgiving for favors received or for great success. Gods presided in every Greek household. In front of every Grecian house stood a stone sacred to Apollo Agyieus, and sometimes a figure of Hermes; the altar of Zeus stood in the court, and by the hearth Hestia was worshiped. In the other apartments of the house appropriate deities presided. No need was felt for any intermediary or intercessory, as each individual Greek was free to offer his adoration or prayers to any of the gods. There was consequently a priestly class which ranked only as other public officials might, without special privileges, prerogatives, or power. It would appear from the mythological accounts of the Greek deities that Grecian morality was not based upon their religion, but in later days there was a strongly marked division between the ancient mythology and the more recent religion.

The system was polytheistic; the Greeks conceived that the gods were everywhere, and that all nature was full of divine life. The great number of deities recognized by the Greeks differed in rank and power; they comprised the gods proper, the daimones, the malevolent inferior spirits, and the heroes and the spirits of the day. The whole world and all the forces of nature were under the control of these gods, but the world was not made by them, and, while they were immortal, all had a beginning. Each god was personified, and was endowed with personal attributes on a much grander scale than those of the ordinary human being. The gods were localized, and there were three broad divisions: the gods of heaven, the gods of the earth, and the gods of the sea. The abode of the heavenly gods was either in the sky or upon some lofty mountain, as Mount Olympus in Thessaly. The gods of the earth were supposed to dwell under the earth. The father of gods and men was Zeus, the supreme ruler of the universe; Hera, his wife, was queen of heaven; Hephæstus was the god of fire and the patron of workers in metal; Athena, the daughter of Zeus, sometimes called Pallas, was the goddess of wisdom; Ares was the god of war; Aphrodite, the goddess of love; Hermes, the winged messenger of the gods; and Hestia, the goddess of the hearth. Of the gods of the earth, Hades was the ruler of the lower world, and Persephone, the daughter of Demeter, was his wife. Gæa was the earth mother. The presiding god over the sea was Poseidon, the brother of Zeus, who lived with his wife, Amphitrite, and around them circled the Nereids, Tritons, and lesser sea gods. The votive offerings and thanksgivings for deliverance generally took the form of magnificent temples erected to the gods. Many of the most beautiful buildings in Greece were erected in commemoration of victories which the Greeks believed were due to special favor by their protective deities. The oracle at Delphi was a remarkable variation from the belief in the ordinary priestly class of Greece. So firmly did many of the Greeks at certain periods of the country's history believe in fatalism and foreordination that few great national or even personal enterprises were undertaken without first visiting and consulting the oracle at Delphi. The replies given by the priests in such cases were invariably ambiguous, and if the course taken, in what was supposed to be obedience to the message of the oracle, did not turn out satisfactorily there was no reflection upon the power of the god but upon the person's own interpretation of the message.

Roman Religion.—Rome as a nation passed through so many stages of civilization and power that the religious beliefs of the people changed with these. Nevertheless, throughout her entire history Rome preserved many of the ancient religious rites and customs long after the religious beliefs upon which they were founded had been forgotten. So completely did the Grecian mythology efface the old Roman religion that it is almost impossible to distinguish as to its origin or extent. The Romans recognized two classes of gods: the *di indigetes*, or the original gods of the Roman State, and the *di novensides*, who were new or later introductions. The earliest Greek calendar of which we know had 45 fixed festivals in the year, together with other occasional days of commemoration. Such literary remains as we have of the earlier period of Roman history show that it was the custom of the Romans to invoke not only a separate deity upon different occasions in their life, but frequently several deities during the performance of one operation. At the time of the Tarquins, the last kings of Rome, Jupiter, Juno, and Minerva occupied the supreme place in Roman religion. Shortly after this Diana and the Sibylline Books were introduced, and later the erection of temples became common in honor of the three supreme gods. With the influx of foreigners to the city a knowledge of other gods came to Rome, and some of these were incorporated into the religious system. In this way Diana, Minerva, Hercules, Venus, and others came from Greece, as did also Apollo, Demeter, and Dionysus, in 496 B. C. Hermes came at about the same time, but his name was changed to Mercury. The Poseidon of the Greeks is known in Rome as Neptune, about 400 B. C. As the process of the Hellenization of Rome continued more of the Greek gods and of the Greek myths were adopted by the Romans, almost to the complete obliteration of the old system. The effect of the introduction of these and of the change from the old rites was the decline of the priestly class, and pontiffs, augurs, and other religious offices rapidly declined into mere political positions. So easy had the introduction of new gods into Rome become that it was not long before the imperial office was raised higher and higher, until reception among the gods of the Roman state after death was bestowed first upon Julius Cæsar, and then upon Augustus, Claudius, Vespasian, Titus, Nerva, and others. Amid this rapid change and frequent addition of deities it is not strange that the forms of the religion became varied and confused. It was customary to offer the firstfruits of the field or garden on behalf of the family or community at the domestic altars. The state made frequent sacrifices to individual gods, and these were often of very large size. The sacrifice of animals was common. The liturgy to be observed by the priest was precise and prescribed; the act of worship grew to be compulsory as an ordinance of the state. One of the most sacred of obligations was the public or private vow to make certain offerings to a god or to perform certain tasks in the event of the successful outcome of an enterprise. When such a vow was made by a ruler the performance of it became obligatory upon the entire state. Auguries played an important part in the Roman religious system, and practically governed the daily life of the people. To every occurrence, important or slight, the Romans attached a peculiar significance, and read in the most trivial things a revelation of the will of heaven. It was the duty of an officer known as the augur to read and interpret this correctly. Especially were the eagle, vulture, crow, raven, owl, and hen consulted, and these were regarded as messengers of the gods. The eagle and vulture revealed the will by flight, the other birds by their voices. The political influence and authority of the augurs grew extensively, for no public election was considered valid and no battle was undertaken unless the auspices were favorable.

Scandinavian and Teutonic Religions.—The religion of this group of people in northern Europe was founded upon what is popularly called Norse mythology. It persisted among the more remote people of this group until their conversion to Christianity in the year 1000. About that time the sacred or mythological books known to us as the Eddas, and other literary productions called Sagas, were first published, and it is from them that our ideas of the earlier forms of religion among the Scandinavian and Teutonic people are derived. The Eddas described the creation as proceeding from an abyss or chasm out of which the giants built a citadel for the gods and called it Asgard, which the gods reached by a rainbow bridge. The gods were many and lacked the polish and refinement with which the Grecians and Romans clothed their gods, being endowed with exaggerated human attributes and powers. They ate and drank with Teutonic appetites and were subject to impulses of generosity and rage. In this system the foremost of the gods is Odin, whose rule is supreme and who has endured eternally. He is represented as a rough, impulsive, but not unkind old man. Frigga was the wife of Odin. Their descendants are the Aesir. The first son is Thor, the most popular god of Scandinavia, the god of thunder. The second son is Balder, wondrously fair and beloved by all. Tyr, the third son, was originally a sky god bold and daring, but in the later religious system deteriorated into a war god. Bragi is famous for wisdom and learning. Loki is deceitful, cunning, ill-tempered, the evil one. The highest seat of the gods is Yggdrasil, the ash tree. The abode of the gods is Valhalla, where the righteous shall live and be with Odin. The gates of this abode opened readily to the souls of those who had fallen in battle. It was represented as an enormous hall decorated with shields and spears and approached by 540 doors, each so large that 800 heroes might walk abreast through it. At their banquets, they were attended by valkyries, who were directed by Freyja. The valkyries are the battle maidens, who confer victory upon Odin's favorites and conduct the fallen heroes to Valhalla. Valhalla was located at Gladsheim; the abode of the wicked was at Hel, where they passed to Niflheim. Despite the picture presented by this religious belief, there ever overhangs a terrible menace that the enemies of Aesir will one day break their bonds, conquer the gods, and precipitate the downfall of the world, which the Scandinavians speak of as Ragnarok. The word

means the "judgment of the gods," but has been softened to the "twilight of the gods," and it was upon this idea that Wagner built his *Götterdämmerung* as the introduction to his music drama, *Der Ring des Nibelungen*, more fully described in the STORIES OF THE OPERAS. From the names Tyr, Odin or Wodin, Thor, and the goddess Frigga we have derived the names of four of the days of our week, Tuesday, Wednesday, Thursday, and Friday. Around these several principal gods there hover in Norse mythology an innumerable band of spirits, demons, elves, dwarfs, giants, valkyries, swan maidens, and norns.

The Religions of Savage and Primitive Peoples.—Despite the great diversity in the actual practice of religious rites among primitive and savage people there are four points which are common to them all in a greater or less degree. First, animism, which endows all objects in the world with a soul, not only the lower animals but rocks, trees, and rivers. The Red Indian of America explains the lack of movement on the part of trees and stones to some malign influence which is exerted by an enchanter or other great power. He believes that the billows of the lake may move but that the lake itself is confined within the limits of its shores by some mysterious influence; while the brook and the river are permitted greater freedom, more or less subject to an enthralling influence, and while able to run over the land are yet confined to their beds. It is probable that all races during their primitive period have passed through some form of animism. It was this same belief that caused the Greeks to shun dark groves and lonely places, and in their imagination people them with mysterious supernatural beings. Animism held that all objects in the world exerted both beneficent and malevolent influences. If the river overflowed its banks and destroyed life and property by a flood, the river god or some synonymous idea was blamed; but if this flood resulted beneficently, as in the overflow of the Nile, and by irrigation the land was made fruitful, it was ascribed to a beneficent impulse on the part of the mysterious power. Second, an idea of magic pervades all primitive religions. The Red Indian of America believed implicitly in the great power for good which his fetiches possessed and exerted. Magical incantations and rites proved powerful instruments in the hands of the shaman, medicine man, or priest. Magic was considered as the power of controlling nature. If a charm or an incantation or other form of magic did not produce the desired result, it was not, in the opinion of the savage, the fault of the magic, but he concluded that the wrong form of magic had been used to attain the desired end, or there was some more powerful counter-magic exerting an overwhelming influence against him. Magic is to the primitive man all that science is to the cultured man. Implicit belief is reposed in its powers, and this, in a large measure, accounts for the importance that it has attained and preserved among savage people. Third, nature worship is inevitably necessary to all primitive religions as following directly from the beliefs of animism and of the power of magic. The same mind that will endow inanimate objects with dream powers of good and evil is prompted to offer adoration and reverence to those bodies, and especially is this true of the sun, moon, stars, and other great and conspicuous objects in nature. Fourth, ancestor worship is common to primitive religions, and is an outcome of the belief in magic. Fetichism and totemism follow directly from the fear inspired by a belief in magic, and totemism imagines a whole family or race to be descended from possibly some plant, which thenceforward becomes an object of reverence, not to be eaten or destroyed, and in its preservation and by its esteem is cultivated the idea of ancestor worship. The belief in magic and the complexity of religious systems among primitive and savage people gradually render necessary the erection of a certain class among the people, which assumes the profession of priest, interpreter, magician, sorcerer, medicine man, or shaman, and acts as an intermediary, standing to the people in the light of both physician and priest.

Celtic Religion.—The settlement of Gaul by the Celts has been variously estimated to have taken place from 1200 to 700 B. C. Celtic power was at its height about 400 B. C., when the Teutonic tribes of the East began to press upon them. Their religion included gods of the earth, of the woods, of the sun, of fire, and vast numbers of demons, elves, and tutelary beings. References to these abound in Celtic literature and folk lore. Human sacrifice, especially of prisoners taken in war, was an essential feature of their religious rites. The Druids combined the offices of priests, teachers, and judges. Cæsar gives the best account of the Druidic office and power. This powerful class opposed the Romans and incited the people of both Gaul and ancient Britain to rebellion. Claudius, the Roman emperor, put the religion under an interdict, and forbade worship under its rites; but the religion prevailed among the Britons until the introduction of Christianity. Magic was practised by the Druids. The oak tree with its parasite, the mistletoe, was sacred, and religious rites were often performed in oak groves. Pliny describes how a Druid clothed in white climbed the oak, and with a golden knife cut off the mistletoe. The wonderful stone structures called dolmens were composed of several great stone slabs set on edge in the ground and capped by another slab and are thought by archeologists to have been used as Druidical altars. They abound in the British Isles, France, Spain, northern Africa, Syria, and as far east as Japan. The larger monuments of Avebury and Stonehenge in England and of Carnac in Brittany are supposed to be remains of Druidical temples.

Mohammedanism (sometimes written *Mahometanism*, but properly called *Islam*) is the monotheistic religion founded by Mohammed (570-632), the prophet of God. He was a native of Arabia and belonged to its most distinguished tribe—the Koreish. He could neither read nor write and had lost his parents before he was six. Adopted by his uncle, he assisted him as a shepherd and camel driver. Later he became camel driver to Khadijah, a wealthy widow and the chief lady of Mecca, of which he was a native, and became her business agent, conducting many caravan expeditions, and in them visiting a great many places both within and

without Arabia. Later he married the widow though 14 years her junior, and thus relieved of business cares he had leisure for thought, meditation, and prayer. One of his favorite retreats was a cave in a mountain not far off, and on one occasion he had a vision there; the angel Gabriel appeared to him, saluted him as the prophet of God, and revealed to him the successive chapters of the Koran, the Mohammedan Bible.

Arabia at that time was in a deplorable condition religiously. Star and demon worship, polytheism, and idolatry prevailed, though several tribes had accepted Judaism, and some Christianity. He was always a strong opponent of idolatry. He soon began to preach in a quiet way, and his wife and a few others accepted his doctrines, which spread fitfully, and his life was often endangered. In 622 he was forced to flee, to save his life, to Yatreeb, which later became known as Medina, and this year (622), the year of the Hejira or "flight," became the starting point of Mohammedan chronology—their year 1.

Mohammed's system is based on the Koran. Its central idea is the unity of God. There is only one God (*Allah*), and Mohammed is his prophet. The existence of the world proves a creator. This creator is God. "There is only one; he lives, is eternal, omnipotent, omniscient; is endowed with will and action, and in him is neither form nor face, nor limits, nor members, nor parts, because he is neither body nor matter. God possesses the word. It is eternal in his essence. The Koran is the uncreated word. It is written in our books and in our hearts." The prophets have attested their mission by prodigies and marvels. Adam is the first; Christ is superior to all others—except Mohammed. The angels are God's messengers and without sex. The sacred books descended from heaven, and in order of rank are—the Koran, the Pentateuch, the Gospels, and the Psalms.

There are 12 capital sins: polytheism, adultery, desertion on the field of battle, robbery of orphans, disobedience to parents, usury, etc., and God may pardon any or all of these except polytheism. Mohammed believed in the resurrection of the dead. In the tombs sinners are tormented, but the faithful enjoy special delights. A never-ending paradise and hell are all real and certain. Hell is divided into seven apartments assigned to Mohammedans, Jews, Christians, Sabians, Magians, idolaters, and hypocrites.

The moral code is very simple. The chief vice is hypocrisy; others are envy, obstinacy, gluttony, avarice. Promises should be strictly kept. Friday should be especially esteemed, because Adam and Eve were created on that day. One should always think well of others, and no one should be honored merely on account of wealth. We should never lie, nor steal, nor play games of chance. Kindness to animals is also insisted upon.

The code requires the performance of five duties: the acceptance of the formula "There is no God but Allah"; prayer five times a day; almsgiving; a fast through the whole month of Ramazan, and a pilgrimage to Mecca at least once in a lifetime. The most sacred shrine of Mohammedans is the Kaaba in the center of the great mosque at Mecca. There, in the southeast corner, is a sacred black stone said to have been a ruby that came down from heaven. It is now blackened by the tears shed for sin by the pilgrims.

The prophet died in 632, and during the seventh century his doctrines were carried and accepted, chiefly at the point of the sword, over Arabia, northern Africa, and large parts of Asia. Mohammedanism entered Europe in the following century. Its sects are numerous—over 72. The two chief divisions are (1) the Sunnites, who claim to be orthodox, chiefly found in the Turkish empire (28,176,113); and (2) the Shiites classed as heterodox, found chiefly in Persia (9,500,000), India (62,458,000), and China (33,000,000). Mohammedans are frequently spoken of as Mussulmans and Moslems.

Koran, the sacred book of the Mohammedan religion. According to that belief a copy of it, in a book bound in white silk, jewels, and gold, was brought down to the lowest heaven by the angel Gabriel, in the blissful and mysterious night of Al-Khadr, in the month of Ramadan. Portions of it were, during a space of 23 years, communicated to Mohammed, both at Mecca and Medina, either by Gabriel in human shape, "with the sound of bells," or through inspirations from the Holy Ghost "in the Prophet's breast," or by God himself, "veiled and unveiled, in waking or in the dreams of night." Mohammed dictated his inspirations to a scribe, not, indeed, in broken verses, but in finished chapters, and from this copy the followers of the Prophet procured other copies. The chief doctrine laid down in the Koran is the unity of God and the existence of one true religion with changeable ceremonies. When mankind turned from it at different times, God sent prophets to lead them back to truth,—Moses, Christ, and Mohammed being the most distinguished. Both punishments for the sinner and rewards for the pious are depicted with great diffuseness, and exemplified chiefly by stories taken from the Bible, the Apocryphal writings, and the Midrash. Special laws and directions, admonitions to moral and divine virtues, more particularly to a complete and unconditional resignation to God's will, legends principally relating to the patriarchs, and almost without exception borrowed from the Jewish writings, form the bulk of the book, which throughout bears the most palpable traces of Jewish influence. The outward reverence in which the Koran is held throughout Mohammedanism is exceedingly great. It is never held below the girdle, never touched without previous purification; and an injunction to that effect is generally found on the cover. It is consulted on weighty matters; sentences from it are inscribed on banners, doors, etc. Great lavishness is also displayed upon the material and the binding of the sacred volume. The copies for the wealthy are sometimes written in gold, and the covers blaze with gold and precious stones. Nothing, also, is more hateful in the eyes of a Moslem than to see the book in the hands of an unbeliever. The influence of the Koran upon the intellectual advance of the faithful has been quite as great as upon the regulation of the daily life of the individual. A certain repressive effect upon art and literature, especially philosophical and speculative, is clearly apparent.

A DICTIONARY OF MYTHOLOGY.

A'BAS. A king of Argos, son of Lynceus and Hypermnestra, grandson of Danaüs, father of Acrisius, and grandfather of Perseus.

ABSYR'TUS. Brother of Medea.

ACHELO'US. A son of Oceanus and Terra. He had the power of assuming all shapes, and in a conflict with Hercules he turned himself into a serpent, and then into a bull, but he was finally defeated, and he then turned himself into a river, which has since been called Achelous.

ACH'ERON. One of the rivers of the infernal regions to which the spirits of the dead resorted, and waited there till Charon the ferryman took them over.

ACHIL'LES. The most valiant of the Greek heroes in the Trojan War. He was the son of Peleus, king of Thessaly. His mother, Thetis, plunged him, when an infant, into the Stygian pool, which made him invulnerable wherever the waters had washed him; but the heel by which he was held was not wetted, and that part remained vulnerable. He was shot with an arrow in the heel by Paris, at the siege of Troy, and died of his wound.

ACIDA'LIA. A name given to Venus, from a fountain in Boeotia.

A'CIS. A Sicilian shepherd, loved by the nymph Galatea. One of the Cyclops who was jealous of him crushed him by hurling a rock on him. Galatea turned his blood into a river—the Acis at the foot of Mount Etna.

ACTAE'ON. The son of Aristaeus, a famous huntsman. He intruded himself on Diana while she was bathing, and was changed by her into a deer, in which form he was hunted by his own dogs and torn in pieces.

ADO'NIS. The beautiful attendant of Venus, who held her train. He was killed by a boar, and from his blood sprang the anemone.

ADRASTAE'A. Another name of Nemesis, one of the goddesses of justice.

ADSCRIPTI'TII DII. The gods of the second grade.

AE'ACUS. Son of Jupiter and Aegina; one of the judges of the infernal regions, who was appointed to judge the Europeans.

AECAS'TOR. An oath used only by women, referring to the Temple of Castor.

AED'EPOL. An oath used by both men and women, referring to the Temple of Pollux.

AEGE'ON. A giant with 50 heads and 100 hands, who was imprisoned by Jupiter under Mount Etna.

AEGIP'ANS. Rural deities who inhabited the forests and mountains, the upper half of the body being like that of a man, and the lower half like that of a goat.

AE'GIS. The shield of Jupiter, so called because it was made of goat skin; used as a defensive armor in his war with the Titans; afterwards intrusted by him to Minerva.

AE'GLE. The fairest of the Naiads.

AEL'LO. The name of one of the Harpies.

AENE'AS. The son of Anchises and Venus. He was one of the few great captains who escaped the destruction of Troy. He behaved with great valor during the siege, encountering Diomed, and even Achilles himself. When the Grecians had set the city on fire Aeneas took his aged father, Anchises, on his shoulders, while his son, Ascanius, and his wife, Creusa, clung to his garments. He saved them all from the flames. After wandering about during several years, encountering numerous difficulties, he at length arrived in Italy, where he was hospitably received by Latinus, king of the Latins. After the death of Latinus, Aeneas became king.

AE'OLUS. The god of the winds. Jupiter was his reputed father, and his mother is said to have been a daughter of Hippotus.

AESCULA'PIUS. The god of physic, was a son of Apollo. He was physician to the Argonauts in their famous expedition to Colchis.

AE'SON. Father of Jason, and was restored to youth by Medea.

AE'TES. A king of Colchis, was father of Medea.

AGAMEM'NON. The son of Plisthenes and brother of Menelaus. He was king of the Argives. His brother's wife was the famous Helen, daughter of Tyndarus, king of Sparta; and when she eloped with Paris, Agamemnon was appointed leader of the Greeks in their expedition against Troy.

AGANIP'PIDES. A name of the Muses, derived from the fountain of Aganippe.

AGLA'IA. One of the Three Graces.

AG'NI. The Hindu god of fire.

A'JAX. One of the bravest of the Greek warriors in the Trojan War. His father was Telamon, and his mother Eriboea. Some writers say that he was killed by Ulysses; others aver that he was slain by Paris; while others again assert that he went mad after being defeated by Ulysses, and killed himself. Another Ajax, son of Oïleus, also took a prominent part in the Trojan War.

ALCES'TIS. Wife of Admetus, who, to save her husband's life, died in his stead, and was restored to life by Hercules.

ALCI'DES. One of the names of Hercules.

ALCME'NA. The mother of Hercules, was daughter of Electryon, a king of Argos.

ALEC'TO. One of the Furies. She is depicted as having serpents instead of hair on her head, and was supposed to breed pestilence wherever she went.

ALEC'TRYON. A servant of Mars, who was changed by him into a cock because he did not warn his master of the rising of the sun.

AL'FADUR. In Scandinavian mythology the Supreme Being—Father of all. One of the names of Odin.

AMAL'THAE'A. The goat which nourished Jupiter.

AM'AZONS. A nation of women-soldiers who lived in Scythia. Hercules totally defeated them, and gave Hippolyte, their queen, to Theseus for a wife. The race seems to have been exterminated after this battle.

AMBARVA'LIA. Festivals in honor of Ceres, instituted by Roman husbandmen to purge their fields. At the spring festival the head of each family led an animal, usually a pig or ram, decked with oak boughs, round his grounds, and offered milk and new wine. After harvest there was another festival, at which Ceres was presented with the first fruits of the season.

AMBRO'SIA. The food of the gods.

AMPHI'ON. The son of Jupiter and Antiope. He was greatly skilled in music; and it is said that, at the sound of his lute, the stones arranged themselves so regularly as to make the walls of the city of Thebes.

AMPHITRI'TE or **SALATIA.** The wife of Neptune, was a daughter of Nereus and Doris. She was the mother of Triton, a sea god.

AMY'CUS. King of Babrycia. He was a son of Neptune, and was killed by Pollux.

ANCAE'US. A son of Neptune, who left a cup of wine to hunt a wild boar, which killed him, and the wine was untasted. This was the origin of the proverb —"There 's many a slip 'twixt cup and lip."

ANCIL'IA. The 12 sacred shields. The first Ancile was supposed to have fallen from heaven in answer to the prayer of Numa Pompilius. It was kept with the greatest care, as it was prophesied that the fate of the Roman people would depend upon its preservation. An order of priesthood was established to take care of the Ancilia, and on March 1 of each year the shields were carried in procession, and in the evening there was a great feast called Coena Saliaris.

ANDROM'EDA. The daughter of Cepheus, king of the Ethiopians, was wife of Perseus, by whom she was rescued when she was chained to a rock and was about to be devoured by a sea monster.

ANEM'ONE. Venus changed Adonis into this flower.

ANGERO'NIA. Otherwise Volupia, was the goddess who had the power of dispelling anguish of mind.

ANNA PEREN'NA. One of the rural divinities.

ANTAE'US. A giant who was vanquished by Hercules. Each time that Hercules threw him the giant gained fresh strength from touching the earth, so Hercules lifted him off the ground and squeezed him to death.

AN'TEROS. One of the two Cupids, sons of Venus.

ANTIC'LEA. The mother of Ulysses.

ANTI'OPE. Daughter of Nycteus, king of Thebes, and mother, by Zeus, of Amphion and Zethus.

ANU'BIS or **HERMAN'UBIS.** "A god half a dog, a dog half a man." Called *Barker* by Vergil and other poets.

AON'IDES. A name of the Muses, from the country Aonia.

APH'RODI'TE. A Greek name of Venus.

A'PIS. A name given to Jupiter by the inhabitants of the Lower Nile. Also the miraculous ox, worshiped in Egypt.

A'PIS. King of Argivia. Afterwards called Serapis, the greatest god of the Egyptians.

APOL'LO. This famous god, sometime king of Arcadia, was the son of Jupiter and Latona. He was known by several names, but principally by the following: Sol (the sun); Cynthius, from the mountain called Cynthus in the Isle of Delos, and this same island being his native place obtained for him the name of Delius; Delphinius, from his occasionally assuming the shape of a dolphin. His name of Delphicus was derived

from his connection with the splendid Temple at Delphi, where he uttered the famous oracles. Some writers record that this oracle became dumb when Jesus Christ was born. Other common names of Apollo were Didymaeus, Nomius, Paean, and Phoebus. The Greeks called him Agineus because the streets were under his guardianship, and he was called Pythius from having killed the serpent Python. Apollo is usually represented as a handsome young man without beard, crowned with laurel, and having in one hand a bow, and in the other a lyre. The favorite residence of Apollo was on Mount Parnassus, a mountain of Phocis, in Greece, where he presided over the Muses. Apollo was the accredited father of several children, but the two most renowned were Aesculapius and Phaëton.

APOTHE'OSIS. The consecration of a god. The ceremony of deification.

ARACH'NE. A Lydian princess, who challenged Minerva to a spinning contest, but Minerva struck her on the head with a spindle, and turned her into a spider.

ARCA'DIA. A delightful country in the center of Peloponnesus, a favorite place of the gods. Apollo was reputed to have been king of Arcadia.

AR'CAS. A son of Calisto, was turned into a he-bear; and afterwards into the constellation called Ursa Minor.

AREOP'AGI'TAE. The judges who sat at the Areopagus.

AREOP'AGUS. The hill at Athens where Mars was tried for murder before 12 of the gods.

ARETHU'SA. Was one of the nymphs of Diana. She fled from Alpheus, a river god, and was enabled to escape by being turned by Diana into a rivulet which ran underground. She was as virtuous as she was beautiful.

AR'GONAUTS. This name was given to the 50 heroes who sailed to Colchis in the ship Argo under the command of Jason, to fetch the Golden Fleece.

AR'GUS. Was a god who had a hundred eyes which slept and watched by turns. He was charged by Juno to watch Io, but, being slain by Mercury, was changed by Juno into a peacock.

ARIAD'NE. Daughter of Minos, king of Crete. After enabling Theseus to get out of the labyrinth by means of a clew of thread, she fled with him to Naxos, where he ungratefully deserted her; but Bacchus wooed her and married her, and the crown of seven stars which he gave her was turned into a constellation.

ARI'ON. Was a famous lyric poet of Methymna, in the island of Lesbos; rescued from drowning by a dolphin.

ARISTAE'US. Son of Apollo and Cyrene, was the god of trees. He also taught mankind the use of honey, and how to get oil from olives. He was a celebrated hunter. His most famous son was Actaeon.

ARMA'TA. One of the names of Venus, given to her by Spartan women.

AR'TEMIS. This was the Grecian name of Diana, and the festivals at Delphi were called Artemesia.

ARUS'PICES. Sacrificial priests.

ASCAL'APHUS. Was changed into an owl, the harbinger of misfortune, by Ceres, because he informed Pluto that Proserpine had partaken of food in the infernal regions, and thus prevented her return to earth.

ASCA'NIUS. The son of Aeneas.

ASCOL'IA. Bacchanalian feasts, from a Greek word meaning a leather bottle. The bottles were used in the games to jump on.

ASO'PUS. A son of Jupiter, who was killed by one of his father's thunderbolts.

ASSABI'NUS. The Ethiopian name of Jupiter.

ASTAR'TE. One of the Eastern names of Venus.

ASTE'RIA. Daughter of Caeus, was carried away by Jupiter, who assumed the shape of an eagle.

ASTRE'A. Mother of Nemesis, was the goddess of justice. She returned to heaven when the earth became corrupt.

ATALAN'TA. Daughter of Caeneus. The oracle told her that marriage would be fatal to her, but, being very beautiful, she had many suitors. She was a very swift runner, and, to get rid of her admirers, she promised to marry any one of them who should outstrip her in a race, but that all who were defeated should be slain. Hippomenes, however, with the aid of Venus, was successful. That goddess gave him three golden apples, one of which he dropped whenever Atalanta caught up to him in the race. She stopped to pick them up, and he was victorious and married her. They were both afterwards turned into lions by Cybele, for profaning her temple.

A'TE. The goddess of revenge, also called the goddess of discord and all evil. She was banished from heaven by her father Jupiter.

ATHE'NA. A name obtained by Minerva as the tutelary goddess of Athens.

AT'LAS. King of Mauritania, now Morocco, in Africa. He was also a great astronomer. He is depicted with the globe on his back, his name signifying great toil or labor. For his inhospitality to Perseus that king changed him into the mountain which bears his name of Atlas. A chain of mountains in Africa is called after him, and so is the Atlantic Ocean.

AT'REUS. The type of fraternal hatred. His dislike of his brother Thyestes went to the extent of killing and roasting his nephews, and inviting their father to a feast, which Thyestes thought was a sign of reconciliation, but he was the victim of his brother's detestable cruelty.

AT'ROPOS. One of the three sisters called "The Fates," who held the shears ready to cut the thread of life.

A'TYS. Son of Croesus, was born dumb, but when in a fight he saw a soldier about to kill the king, he gained speech, and cried out, "Save the king!" and the string that held his tongue was broken.

A'TYS. A youth beloved by Aurora, and was slain by her father, but, according to Ovid, was afterwards turned into a pine tree.

AUG'EAS. A king of Elis, the owner of the stable which Hercules cleansed after 3,000 oxen had been kept in it for 30 years. It was cleansed by turning the river Alpheus through it. Augaeas promised to give Hercules a tenth part of his cattle for his trouble, but, neglecting to keep his promise, Hercules shot him.

AU'GURY. This was a means adopted by the Romans for forming a judgment of futurity by the flight of birds, and the officiating priest was called an augur.

AURO'RA. The goddess of the morning, "whose rosy fingers ope the gates of day." She was daughter of Sol, the sun, and was the mother of the stars and winds.

AUS'TER. The south wind, a son of Jupiter.

AVER'NUS. A poisonous lake, referred to by poets as being at the entrance of the infernal regions, but it was really a lake in Campania, Italy.

AVERRUN'CUS DEUS. A Roman god, who could divert people from evil doing.

BA'AL. A god of the Phoenicians.

BA'AL-PE'OR. A Moabitish god, associated with licentiousness and obscenity. The modern name is Belphegor.

BACCHAN'TES. The priestesses of Bacchus.

BAC'CHUS. The god of wine, and the son of Jupiter and Semele. He is said to have married Ariadne, daughter of Minos, king of Crete, after she was deserted by Theseus. The most distinguished of his children is Hymen, the god of marriage.

BA'LIOS. A famous horse given by Neptune to Peleus as a wedding present, and afterwards given to Achilles.

BASSAR'IDES. The priestesses of Bacchus were sometimes so called.

BELISA'MA. A goddess of the Gauls. The name means the Queen of Heaven.

BELLER'OPHON. A hero who destroyed a monster called the Chimaera.

BELLO'NA. The goddess of war, and wife of Mars. The 24th of March was called Bellona's day, when her votaries cut themselves with knives and drank the blood of the sacrifice.

BE'LUS. The Chaldean name of the sun.

BERECYN'THIA. A name of Cybele, from a mountain where she was worshiped.

BI'FORMIS. A name of Bacchus, because he was accounted both bearded and beardless.

BO'NA DE'A. "The bountiful goddess," whose festival was celebrated by the Romans with much magnificence.

BO'NUS EVEN'TUS. The god of good success, a rural divinity.

BO'REAS. The north wind, son of Astraeus and Aurora.

BRAH'MA. The great Indian deity, represented with four heads looking to the four quarters of the globe.

BRIS'AEUS. A name of Bacchus, referring to the use of grapes and honey.

BRONT'ES. One of the Cyclops. He is the personification of a blacksmith.

BUBO'NA. Goddess of herdsmen, one of the rural divinities.

BUD'DHA. The founder of Buddhism; later supposed to be the manifestation of the Vishnu of the Hindus.

BYB'LIS. A niece of Sol, mentioned by Ovid. She shed so many tears for unrequited love that she was turned into a fountain.

CAB'IRI. The mysterious rites connected with the worship of these deities were so obscene that most

writers refer to them as secrets which it was unlawful to reveal.

CAC'ODAE'MON. Greek name of an evil spirit.

CA'CUS. A three-headed monster and robber.

CAD'MUS. One of the earliest of the Greek demigods. He was the reputed inventor of letters, and his alphabet consisted of 16 letters. It was Cadmus who slew the Boeotian dragon, and sowed its teeth in the ground, from each of which sprang up an armed man.

CADU'CEUS. The rod carried by Mercury. It has two winged serpents entwined round the top end. It was supposed to possess the power of producing sleep, and Milton refers to it in *Paradise Lost* as the "opiate rod."

CALLI'OPE. The Muse who presided over epic poetry and rhetoric. She is generally depicted using a stylus and wax tablets, the ancient writing materials.

CALLIS'TO. An Arcadian nymph, who was turned into a she-bear by Jupiter. In that form she was hunted by her son Arcas, who would have killed her had not Jupiter turned him into a he-bear. The nymph and her son form the constellations known as the Great Bear and Little Bear.

CAL'PE. One of the pillars of Hercules.

CALYP'SO. Queen of the island of Ogygia, on which Ulysses was wrecked, and where he was persuaded to remain seven years.

CA'MA. The Indian god of love and marriage.

CAMIL'LUS. A name of Mercury, from his office of minister to the gods.

CAN'ACHE. The name of one of Actaeon's hounds.

CANO'BA. The Indian Apollo.

CANO'PUS. The Egyptian god of water, the conqueror of fire.

CAP'IS or **CAP'ULA.** A peculiar cup with ears, used in drinking the health of the deities.

CAPITOLI'NUS. A name of Jupiter, from the Capitoline hill, on the top of which a temple was built and dedicated to him.

CAPRIP'EDES. Pan, the Aegipans, the Satyrs, and Fauns were so called from having goats' feet.

CASSAN'DRA. A daughter of Priam and Hecuba, who was granted by Apollo the power of seeing into futurity, but having offended that god he prevented people from believing her predictions.

CASSIOPE'IA. The Ethiopian queen who set her beauty in comparison with that of the Nereides, who thereupon chained her daughter Andromeda to a rock and left her to be devoured by a sea monster, but she was delivered by Perseus.

CASTA'LIA. One of the fountains in Mount Parnassus, sacred to the Muses.

CASTALI'DES. A name of the Muses, from the fountain Castalia or Castalius.

CAS'TOR. Son of Jupiter and Leda, twin brother of Pollux, noted for his skill in horsemanship. He went with Jason in quest of the Golden Fleece.

CAU'THER. In Mohammedan mythology, the lake of paradise, whose waters are as sweet as honey, as cold as snow, and as clear as crystal; and any believer who tastes thereof is said to thirst no more.

CELE'NO. One of the Harpies, progenitor of Zephyrus, the west wind.

CEN'TAUR. A huntsman who had the fore part like a man, and the remainder of the body like a horse. The Centauri lived in Thessaly.

CEPH'ALUS. Married to Procris, whom he accidentally slew by shooting her, while she was secretly watching him, he thinking she was a wild beast. Cephalus was the type of constancy.

CERAU'NIUS. A Greek name of Jupiter, meaning The Fulminator, from his thunderbolts.

CER'BERUS. Pluto's famous three-headed dog, which guarded the gate of the infernal regions, preventing the living from entering, and the inhabitants from going out.

CE'RES. Daughter of Saturn, the goddess of agriculture, and of the fruits of earth. She taught Triptolemus how to grow corn, and sent him to teach the inhabitants of the earth.

CES'TUS. The girdle of Venus, which excited irresistible affection.

CHA'OS. Allegorically represented the confused mass of matter supposed to have existed before the creation of the world, and out of which the world was formed.

CHAR'ON. The son of Nox and Erebus. He was the ferryman who conveyed the spirits of the dead, in boat, over the rivers Acheron and Styx to the Elysian Fields. "Charon's toll" was a coin put into the mouth of the dead with which to pay the grim ferryman.

CHARYB'DIS. A dangerous whirlpool on the coast of Sicily. Personified, it was supposed to have been a woman who plundered travelers, but was at last killed by Hercules. Scylla and Charybdis are generally spoken of together to represent alternative dangers.

CHE'MOS. The Moabitish god of war.

CHIMAE'RA. A wild illusion, personified in the monster slain by Bellerophon. It had the head and breast of a lion, the body of a goat, and the tail of a serpent. It used to breathe forth fire.

CHI'RON. The centaur who taught Achilles hunting, music, and the use of medicinal herbs. Jupiter placed him amongst the stars, where he appears as Sagittarius the Archer.

CHLO'RIS. The Greek name of Flora, the goddess of flowers.

CHOU. An Egyptian god corresponding to the Roman Hercules.

CHRO'NOS. Time, the Greek name of Saturn.

CIR'CE. The daughter of the sun. The knowledge of poisonous herbs enabled her to destroy her husband, the king of the Sarmatians, for which act she was banished. When Ulysses landed at Aecea, where she lived, she turned all his followers into swine.

CISSE'TA. The name of one of Actaeon's hounds.

CITHER'IDES. A name of the Muses, from Mount Citheron.

CLI'O. One of the Muses, daughter of Jupiter and Mnemosyne. She presided over history.

CLOACI'NA. The Roman goddess of sewers.

CLO'THO. One of the Fates. She was present at births, and held the distaff from which was spun the thread of life. See ATROPOS and LACHESIS.

CLOWNS OF LY'CIA, THE. Changed into frogs by Latona, because they refused to allow her to drink at one of their streamlets.

CLUACI'NA. A name of Venus, given to her at the time of the reconciliation of the Romans and the Sabines, which was ratified near a statue of the goddess.

CLYTEMNES'TRA. Wife of Agamemnon, slew her husband and married Aegisthus. She attempted to kill her son Orestes, but he was delivered by his sister Electra, who sent him away to Strophius. He afterwards returned and slew both Clytemnestra and Aegisthus.

CLYT'IE. A nymph who was changed into a sunflower because her love of Apollo was unrequited. In the form of this flower she is still supposed to be turning towards Sol, a name of Apollo.

CNEPH. In Egyptian mythology the creator of the universe.

COCY'TUS. The river of lamentation. One of the five rivers of the infernal regions.

COE'CULUS. A violent robber, a son of Vulcan.

COE'LUS. Also called Uranus (or Heaven), the most ancient of the gods.

COLLI'NA. One of the rural deities, the goddess of hills.

CO'MUS. The god of revelry. He presided over entertainments and feasts.

CON'CORD. The symbol of concord was two right hands joined, and a pomegranate.

CONCOR'DIA. The goddess of peace. One of the oldest Roman goddesses. She is represented as holding a horn of plenty in one hand, and in the other a scepter, from which fruit is sprouting forth.

CONSUA'LIA. Games sacred to Neptune.

CON'SUS. A name given to Neptune as being the god of counsel.

COPHET'UA. A legendary king of Africa, who disliked women, but ultimately fell in love with a "beggar-maid," as mentioned in *Romeo and Juliet*.

CO'PIA. The goddess of plenty.

CO'RAN. One of Actaeon's hounds was so named.

CORO'NIS. A consort of Apollo and mother of Aesculapius. Another Coronis was daughter of a king of Phocis, and was changed by Athena into a crow.

CORYBAN'TES. Priests of Cybele. They obtained the name because they were in the habit of striking themselves in their dances.

CORY'DON. A silly love-sick swain mentioned by Vergil.

CORY'THAIX. A name given to Mars, meaning Shaker of the Helmet.

COTYT'TO. The Athenian goddess of immodesty.

CU'PID. The god of love, the son of Jupiter and Venus. He is represented as a naked, winged boy, with a bow and arrows and a torch. When he grew up to be a man he married Psyche.

CUVE'RA. The Indian god of wealth, corresponding to the Greek Plutus.

CYB'ELE. The mother of the gods, and hence called Magna Mater. She was wife of Saturn. She is sometimes referred to under the names of Ceres, Rhea, Ops, and Vesta.

CY'CLOPS or **CY'CLOPES.** The gigantic, one-eyed workmen of Vulcan, who made Jove's thunderbolts.

Hesiod gives their names as Arges, Brontes, and Steropes.

CYG'NUS. The bosom friend of Phaëton. He died of grief on the death of his friend, and was turned into a swan.

CYL'LAROS. One of Castor's horses. The color is mentioned as being coal black, with white legs and tail.

CYL'LO. The name of one of Actaeon's hounds, which was lame.

CYLLOP'ODES. A name given to one of Actaeon's hounds, which limped.

CYN'OSURA. One of the nurses of Jupiter, turned by the god into a conspicuous constellation, Ursa Minor.

CYPARIS'SUS. A boy of whom Apollo was very fond; and when he died he was changed, at Apollo's intercession, into a cypress tree, the branches of which typify mourning.

CY'PRIA. A name of Venus, because she was worshiped in the island of Cyprus.

CYTH'ERA. A name of Venus, from the island to which she was wafted in the shell.

DACTY'LI. Priests of Cybele. They were given the name because, like the fingers, they were 10 in number.

DAED'ALUS. A great architect and sculptor. He invented the wedge, the axe, the level, and the gimlet, and was the first to use sails. Daedalus also constructed the famous labyrinth for Minos, king of Crete.

DA'GON. A god of the Philistines, half man, half fish, like the mermaid. Milton describes him as "Upward man and downward fish."

DA'HAK. The Persian devil.

DAI'TYAS. In Hindu mythology the devils or evil gods.

DAN'AE. A daughter of Acrisius and Eurydice. She had a son by Jupiter, who was drifted out to sea in a boat, but was saved by Polydectes and educated.

DANA'US. King of Argos. The father of 50 daughters, who, all but one, at the command of their father, slew their husbands directly after marriage. For this crime they were condemned to the task of forever trying to draw water with vessels without any bottoms.

DAPH'NE. The goddess of the earth. Apollo courted her, but she fled from him, and was, at her own request, turned into a laurel tree.

DAR'DANUS. A son of Jupiter, who built the city of Dardania and by some writers was accounted the founder of Troy.

DEIANI'RA. Daughter of Oeneus, wife of Hercules. See HERCULES.

DE'LIUS. A name of Apollo from the island in which he was born.

DEL'PHI. A town on Mount Parnassus, famous for its oracle, and for a temple of Apollo.

DEL'PHOS. The place where the temple was built from which the oracle of Apollo was given.

DE'MARUS. The Phoenician name of Jupiter.

DE'MOGOR'GON. The tyrant genius of the soil or earth, the life and support of plants. He was depicted as an old man covered with moss, and was said to live underground. He is sometimes called the king of the elves and fays.

DEUCA'LION. One of the demigods, son of Prometheus and Clymene. He and his wife, Pyrrha, by making a ship, survived the deluge which Jupiter sent on the earth (about 1503 B. C.).

DIAN'A. Goddess of hunting and of chastity. She was the sister of Apollo, and daughter of Jupiter and Latona. She was known among the Greeks as Diana or Phoebe, and was honored as a triform goddess. As a celestial divinity she was called Luna; as a terrestrial, Diana or Dictynna; and in the infernal regions, Hecate.

DICTYN'NA. A Greek name of Diana as a terrestrial goddess.

DI'DO. A daughter of Belus, king of Tyre. It was this princess who bought a piece of land in Africa as large as could be encompassed by a bullock's hide, and, when the purchase was completed, cut the hide into strips, and so secured a large tract of land. Here she built Carthage; and Vergil tells that when Aeneas was shipwrecked on the neighboring coast, she received him with every kindness, and at last fell in love with him. But Aeneas did not reciprocate her affections, and this so grieved her that she stabbed herself.

DI'ES PA'TER. Father of the Day, a name of Jupiter

DII SELEC'TI. Composed the second class of gods. They were Coelus, Saturn, Genius, Oreus, Sol, Bacchus, Terra, and Luna.

DINDYME'NE. A name of Cybele, from a mountain where she was worshiped.

DIOME'DES. The cruel tyrant of Thrace, who fed his mares on the flesh of his guests, was overcome by Hercules, and was given to the same horses as food.

DIO'NE. A poetic name of Venus.

DIONY'SIA. Festivals in honor of Bacchus.

DIONY'SUS. A name of Bacchus, either from his father Jupiter (Dios), or from his nurses, the nymphs called Nysae.

DIOS'CURI. Castor and Pollux, the sons of Jupiter.

DI'RAE. A name of the Furies.

DIS. A name of Pluto, god of Hades, signifying riches.

DISCOR'DIA. Sister of Nemesis, the Furies, and Death, was driven from heaven for having sown discord among the gods.

DODO'NA. A celebrated oracle of Jupiter.

DODONAE'US. A name of Jupiter, from the city of Dodona.

DOLA'BRA. The knife used by the priests to cut up the sacrifices.

DOOR'GA. A Hindu goddess.

DO'RIS. Daughter of Oceanus, and sister and wife of Nereus. From these two sprang the several tribes of water nymphs.

DO'TO. One of the Nereids or sea nymphs.

DRA'CO. One of Actaeon's hounds.

DRACON. Seven headed. See GERYON.

DRY'ADS. Rural deities, the nymphs of the forests, to whom their votaries offered oil, milk, and honey.

DWEUR'GAR. Scandinavian god of the Echo—a pigmy.

EB'LIS. The Mohammedan evil genius.

ECHID'NA. A woman having a serpent's tail.

ECHNO'BAS. One of Actaeon's hounds.

ECH'O. A nymph who fell in love with Narcissus. But when he languished and died she pined away from grief and died also, preserving nothing but her voice, which repeats every sound that reaches her.

"Oft by Echo's tedious tales misled."—*Ovid.*

EGE'RIA. A nymph who is said to have suggested to Numa all his wise laws. She became his wife, and at his death was so disconsolate, and shed so many tears, that Diana changed her into a fountain.

E'GIL. The Vulcan of northern mythology.

ELEUSIN'IAN MYSTERIES. Religious rites in honor of Ceres, performed at Eleusis in Attica.

ELYS'IUM or the **ELYSIAN FIELDS.** The temporary abode of the just in the infernal regions.

EMPYRE'AN, THE. The fifth heaven, the seat of the heathen deity.

ENDYM'ION. A shepherd who acquired from Jupiter the faculty of being always young. One of the lovers of Diana.

ENY'O. The Grecian name of Bellona, the goddess of war and cruelty.

E'OS. The Grecian name of Aurora.

E'OUS. One of the four horses which drew the chariot of Sol. The word is Greek, and means red.

EPH'IAL'TES. A giant who lost his right eye in an encounter with Hercules, and the left eye was destroyed by Apollo.

ER'ATO. One of the Muses, the patroness of light poetry. She presided over the triumphs and complaints of lovers, and is generally represented as crowned with roses and myrtle, and holding a lyre in her hand.

ER'EBUS. Son of Chaos, one of the gods of Hades, sometimes alluded to as representing the infernal regions.

EREC'THEUS. Fourth king of Athens, the son of Vulcan.

ERGA'TIS. A name given to Minerva. It means the work-woman, and was given to the goddess because she was credited with having invented spinning and weaving.

ERIN'YS. A Greek name of the Furies. It means Disturber of the Mind.

ERISICH'THON. He was punished with perpetual hunger because he defiled the groves of Ceres and cut down one of the sacred oaks.

ER'OS. The Greek god of love.

EROS'TRATUS. The rascal who burned the temple of Diana at Ephesus, thereby hoping to make his name immortal.

ERYCI'NA. A name of Venus, from Mount Eryx in Sicily.

ERYTHRE'OS. The Grecian name of one of the horses of Sol's chariot.

E'THON. One of the horses which drew the chariot of Sol. The word is Greek and signifies hot.

ET'NA. A volcanic mountain, beneath which, according to Vergil, there is buried the giant Typhon, who breathes forth devouring flames.

EU'DROMOS. The name of one of Actaeon's hounds.

EUME'NIDES. A name of the Furies, meaning

mild, and referring to the time when they were approved by Minerva.

EUPHRO'SYNE. One of the three Graces. See GRACES.

EU'RUS. The east wind. A son of Aeolus.

EURY'ALE. One of the Gorgons, daughter of Phorcus and Ceto.

EURYD'ICE. Wife of Orpheus, who was killed by a serpent on her wedding night.

EURYTH'ION. A seven-headed dragon. See GERYON.

EU'TERPE. One of the Muses, the patroness of instrumental music. The word means agreeable.

EU'VYHE. An expression meaning "Well done, son." Jupiter so frequently addressed his son Bacchus by those words that the phrase at last became one of his names.

FAME. A poetical deity, represented as having wings and blowing a trumpet. A temple was dedicated to her by the Romans.

FATES or PARCAE. The three daughters of Necessity. Their names were Clotho, who held the distaff; Lachesis, who turned the spindle; and Atropos, who cut the thread with the fatal shears.

FAUNS. Rural divinities, half man and half goat. They were very similar to the Satyrs. The Fauns attended the god Pan, and the Satyrs attended Bacchus.

FAVO'NIUS. The wind favorable to vegetation, that is, Zephyr—the west wind.

FE'BRIS (fever). One of the evil deities, worshiped that she might not do harm.

FEB'RUUS. A name of Pluto, from the part of the funeral rites which consisted of purifications.

FERO'NIA. The Roman goddess of orchards; was patroness of enfranchised slaves. Some authors think Feronia is the same as Juno.

FI'DES. The goddess of faith and honesty, who had a temple in the Capitol of Rome.

FLATH'IN'NIS. In Celtic mythology, Paradise.

FLEECE, GOLDEN. See GOLDEN FLEECE, ARGONAUTS, and JASON.

FLO'RA. Goddess of flowers and gardens; was wife of Zephyrus. She enjoyed perpetual youth. Her Grecian name was Chloris.

FLORA'LIA. Licentious games instituted in honor of the goddess Flora.

FORTU'NA. The goddess of fortune, who had a temple erected to her by Servius Tullius. She was supposed to be able to bestow riches or poverty on mankind, and was esteemed one of the most potent of the ancient goddesses.

FRAUD. One of the evil deities; was represented as a goddess with a human face and a serpent's body, and in the end of her tail was a scorpion's sting. She lived in the river Cocytus, and nothing but her head was ever seen.

FREY. The Scandinavian god of fertility and peace. The patron god of Sweden and Iceland.

FREY'JA. The Scandinavian Venus. The goddess of love.

FRI'GA. The Saxon goddess of earthly enjoyments. The name Friday is derived from her. In Scandinavian mythology she is the goddess of marriage.

FRO. The Scandinavian god of tempests and winds.

FURIES, THE. The three daughters of Acheron and Nox. They were the punishers of evil doers. Their names were Tisiphone, Megaera, and Alecto, and were supposed to personify rage, slaughter, and envy.

GABRIEL. In Jewish mythology, the prince of fire and thunder, and the angel of death to the favored people of God.

GALATAE'A. A sea nymph. Polyphemus, one of the Cyclops, loved her, but she disdained his attentions and became the lover of Acis, a Sicilian shepherd.

GAL'LI. Priests of Cybele who used to cut their arms with knives when they sacrificed, and acted so like madmen that demented people got the name of Gallantes.

GAN'ESA. The Indian Mercury. The god of wisdom and prudence.

GANGA. One of the three Indian river goddesses.

GAN'YMEDE. A beautiful Phrygian youth, son of Tros, king of Troy. He succeeded Hebe in the office of cupbearer to Jupiter. He is generally represented sitting on the back of a flying eagle.

GAUTA'MA. The name of Buddha most used in Burmah.

GENII. Domestic divinities. Every man was supposed to have two of these genii accompanying him; one brought him happiness, the other misery.

GEN'ITOR. A Lycian name of Jupiter.

GE'RYON. A triple-bodied monster who lived at Gades, where his numerous flocks were guarded by Orthos, a two-headed dog, and by Eurythion, a seven-headed dragon. These guardians were destroyed by Hercules, and the cattle taken away.

GLAU'CUS. A fisherman who became a sea god through eating a seaweed, which he thought invigorated the fishes and might strengthen him.

GLAUKO'PIS. A name given to Minerva, because she had blue eyes.

GNOMES. A name given by Plato to the invisible deities who were supposed to inhabit the earth.

GNOS'SIS. A name given to Ariadne, from the city of Gnossus in Crete.

GOLDEN FLEECE, THE. A ram's hide, sometimes described as white, and at other times as purple and golden. It was given to Phryxus, who carried it to Colchis, where King Aetes entertained Phryxus, and the hide was hung up in the grove of Mars. Jason and 49 companions fetched back the golden fleece.

GOPY'A. Indian mythological nymphs.

GOR'GONS, THE. Three sisters, named Stheno, Euryale, and Medusa. They petrified every one they looked at. Instead of hair, their heads were covered with vipers. Perseus conquered them, and cut off the head of Medusa, which was placed on the shield of Minerva, and all who fixed their eyes thereon were turned into stone.

GRACES, THE. The attendants of Venus. Their names were Aglaia, so called from her beauty and goodness; Thalia, from her perpetual freshness; and Euphrosyne, from her cheerfulness. They are generally depicted as three cheerful maidens with hands joined, and either nude or only wearing transparent robes,—the idea being that kindnesses, as personified by the Graces, should be done with sincerity and candor, and without disguise. They were supposed to teach the duties of gratitude and friendship, and they promoted love and harmony among mankind.

GRADIV'US. A name given to Mars by the Romans. It meant the warrior who defended the city against all external enemies.

GRA'GUS. The name by which Jupiter was worshiped in Lycia.

GRAP'SIOS. A Lycian name of Jupiter.

HA'DA. The Babylonian Juno.

HADES. The Greek name of Pluto, the god of the lower world, the word signifying hidden, dark, and gloomy; the infernal regions; sometimes written **ADES.**

HALCY'ONE. One of the Pleiades; was a daughter of Atlas and Pelione.

HAL'CYONS. Sea birds, supposed to be the Greek kingfishers. They made their nests on the waves, and during the period of incubation the sea was always calm. Hence the modern term "Halcyon days."

HAMADRY'ADS. Wood nymphs, who presided over trees, with which they lived and died.

HAROE'RIS. The Egyptian god, whose eyes are the sun and moon.

HAR'PIES. Animals with the heads and breasts of women, the bodies of birds, and the claws of lions. Their names were Aello, Ocypete, and Celeno. They were loathsome creatures, living in filth and poisoning everything with which they came in contact.

HARPI'KRUTI. The Egyptian name of the god Harpocrates.

HARPOC'RATES. Son of Isis; was the god of silence and meditation. He is usually represented as a young man holding a finger of one hand to his lips, while in the other hand he holds a cornucopia.

HA'ZIS. The Syrian war god.

HE'BE. The goddess of youth. She was cupbearer to Jupiter and the gods, until she had an awkward fall at a festival, and so displeased Jupiter that she was deprived of her office, and Ganymede was appointed in her stead.

HEC'ATE. There were two goddesses known by this name, but the one generally referred to in modern literature is Hecate, or Proserpine, the name by which Diana was known in the infernal regions. In heaven her name was Luna, and her terrestrial name was Diana.

HEC'UBA. The mother of Paris; was allotted to Ulysses after the destruction of Troy, and was afterwards changed into a hound.

HELEN. When a child was so beautiful that Theseus and Perithous stole her, but she was restored by Castor and Pollux. She became the wife of Menelaus, king of Sparta, but eloped with Paris, and thus caused the Trojan War. After the death of Paris she married Deiphobus, his brother, and then betrayed him to Menelaus. She was strangled by order of Polyxo, king of Rhodes.

HE'LIADES. The daughters of Sol, and the sisters of Phaeton, at whose death they were so sad that they

stood mourning till they became metamorphosed into poplar trees, and their tears were turned into amber.

HEL'ICON. A mountain in Boeotia sacred to the Muses, from which place the fountain Hippocrene flowed.

HELICO'NIDES. A name of the Muses, from Mount Helicon.

HELIOP'OLIS. In Elysium; was the city of the sun.

HE'LIOS. The Grecian sun god, who went home every evening in a golden boat which had wings.

HEL'LE. Drowned in the sea, into which she fell from off the back of the golden ram, on which she and Phryxus were escaping from the oppression of their stepmother Ino. The episode gave the name of the Hellespont to the part of the sea where Helle was drowned, and it is now called the Dardanelles.

HEMPH'TA. The Egyptian god Jupiter.

HEPHAES'TOS. The Greek Vulcan.

HE'RA. The Greek name of Juno.

HER'CULES. The son of Jupiter and Alcmena. The goddess Juno hated him from his birth, and sent two serpents to kill him, but though only eight months old he strangled the snakes. As he became older he was set by his master Eurystheus what were thought to be 12 impossible tasks, which have long been known as the "Twelve Labors of Hercules." They were:—

First, To slay the Nemean Lion.

Second, To destroy the Hydra which infested the marshes of Lerna.

Third, To bring to Eurystheus the Arcadian Stag with the golden horns and brazen hoofs.

Fourth, To bring to his master the Boar of Erymanthus.

Fifth, To cleanse the stable of King Augeas, in which 3000 oxen had been kept for 30 years, and which had never been cleaned out.

Sixth, To destroy the Stymphalides, terrible carnivorous birds.

Seventh, To capture the Bull that was desolating Crete.

Eighth, To capture the mares of Diomedes, which breathed fire from their nostrils, and ate human flesh.

Ninth, To procure the girdle of Hippolyte, queen of the Amazons.

Tenth, To bring to Eurystheus the flesh-eating oxen of Geryon, the monster king of Gades.

Eleventh, To bring away some of the golden apples from the garden of the Hesperides.

Twelfth, To bring up from Hades the three-headed dog, Cerberus.

All these tasks he successfully accomplished, and, besides, he assisted the gods in their wars with the giants.

HER'MAE. Statues of Hermes (Mercury), which were set up in Athens for boundaries, and as direction marks for travelers.

HERMATHE'NAE. Statues of Mercury and Minerva placed together.

HER'MES. A Greek name of the god Mercury.

HERMI'ONE. Daughter of Mars and Venus, who was turned into a serpent, and allowed to live in the Elysian fields. There was another Hermione, daughter of Menelaus. She was betrothed to Orestes, but was carried away by Pyrrhus, the son of Achilles.

HE'RO. A priestess of Venus, with whom Leander was so enamored that he swam across the Hellespont every night to visit her, but at last was drowned, when Hero threw herself into the sea and was drowned also.

HESPER'IDES. Three daughters of Hesperus, king of Italy. They kept in their garden the golden apples which Juno gave Jupiter on their wedding day.

HES'PERUS. Brother of Atlas; was changed into the evening star.

HES'TIA. The Greek name of Vesta.

HIL'DUR. The Scandanavian Mars.

HIPPOCAM'PUS. The name of Neptune's favorite horse.

HIPPOCRE'NIDES. A name of the Muses, from the fountain of Hippocrene (the horse fountain), which was formed by a kick of the winged horse Pegasus.

HIPPOLY'TE. Queen of the Amazons, daughter of Mars. Her father gave her a famous girdle, which Hercules was required to procure (see HERCULES). She was conquered by Hercules, and given by him in marriage to Theseus.

HIPPOLY'TUS. Son of Theseus and Hippolyte. He was killed by a fall from a chariot, but was raised to life again by Diana, or, as some say, by Aesculapius.

HIPPO'NA. A rural divinity, the goddess of horses.

HO'RAE. The daughters of Sol and Chronis.

HORAE'A. Certain sacrifices offered to the goddesses of the seasons to invoke fair weather for the ripening of the fruits of the earth.

HORTEN'SIS. A name of Venus, because she looked after plants and flowers in gardens.

HO'RUS. A name of Sol, the Egyptian day god.

HOSTIL'INA. A rural divinity; goddess of growing corn.

HYACIN'THUS. A boy greatly loved by Apollo, but he was accidentally slain by him with a quoit. Apollo caused to spring from his blood the flower Hyacinth.

HY'ADES. Seven daughters of Atlas and Aethra, who form a constellation which, when it rises with the sun, threatens rain.

HY'DRA. A famous monster serpent, which had many heads. It was slain by Hercules.

HYGE'IA. The goddess of health, a daughter of Aesculapius and Epione. She was represented as a young woman feeding a serpent, which is twined round her arm.

HY'LAS. A beautiful boy beloved by Hercules. The nymphs were jealous of him, and spirited him away while he was drawing water for Hercules.

HY'MEN. The Grecian god of marriage, either the son of Bacchus and Venus, or, as some say, of Apollo and one of the Muses. He was represented as a handsome youth, holding in his hand a burning torch.

HYPE'RION. Son of Coelus and Terra. The model of manly beauty, synonymous with Apollo. The personification of the sun.

HYPERMNES'TRA. One of the 50 daughters of Danaus, who were collectively called the Danaides. She was the one who refused to kill her husband on the wedding night.

IAP'ETUS. Son of Coelus and Terra, husband of Clymene. He was looked upon by the Greeks as the father of mankind.

IC'ARUS. Son of Daedalus, who, with his father, made himself wings with which to fly from Crete. They were fixed to the shoulders by wax. Icarus flew too near the sun, and the heat, melting the wax, caused the wings to drop off, and he fell into the sea and was drowned.

ICHNOBA'TES. One of Actaeon's hounds. It means tracker.

IDAE'A. A name of Cybele, from Mount Ida, where she was worshiped.

IDAE'AN MOTHER. Cybele was sometimes so called.

IDA'LIA. A name of Venus, from Mount Idalus.

IMPERA'TOR. A name of Jupiter, given to him at Praeneste.

IN'ACHUS. One of the earliest of the demigods or heroes.

IN'CUBUS. A Roman name of Pan, meaning The Nightmare.

INDIG'ETES. Deified mortals, gods of the fourth order. They were peculiar to some district.

IN'DRA. The Hindu Jupiter. His wife was Indrant, who presides over the winds and thunder.

IN'NUS. A name of Pan, the same as Incubus.

I'NO. Second wife of Athamas, king of Thebes, father of Phryxus and Helle. Ino had two children, who could not ascend the throne while Phryxus and Helle were alive. Ino therefore persecuted them to such a degree that they determined to escape. They did so on a ram, whose hide became the Golden Fleece (see PHRYXUS and HELLE). Ino destroyed herself, and was changed by Neptune into a sea goddess.

INO'A. Festivals in memory of Ino.

I'O. A daughter of Inachus, and a priestess of Juno at Argus. Jupiter courted her, and was detected by Juno, when the god turned Io into a beautiful heifer. Juno demanded the beast of Jupiter, and set the hundred-eyed Argus to watch her. Jupiter persuaded Mercury to destroy Argus, and Io was set at liberty, and restored to human shape. Juno continued her persecutions, and Io had to wander from place to place till she came to Egypt, where she became wife of King Osiris, and won such good opinions from the Egyptians that after her death she was worshiped as the goddess Isis.

IOLA'US. Son of Iphicles; assisted Hercules in conquering the Hydra, by burning with hot irons the place where the heads were cut off; and for his assistance he was restored to youth by Hebe. Lovers used to go to his monument at Phocis and ratify their vows of fidelity.

IO'THUN. Celtic mythological monsters, or giants.

IPH'ICLUS. Twin brother of Hercules, and father of Iolaus.

IPHIGENI'A. A daughter of Agamemnon. He made a vow to Diana which involved the sacrifice of Iphigenia, but just at the critical moment she was spirited away by the goddess, and taken to Tauris, and a beautiful goat was found on the altar in her place.

I'RIS. Daughter of Thaumas and Electra; was the attendant of Juno, and one of the messengers of the gods. Her duty was to cut the thread which detained

expiring souls. She is the personification of the rainbow.

I'SIS. Wife of Osiris.

I'TYS. Killed by his mother Progne when six years old, and given to his father Tereus as food. The gods were so enraged at this that they turned Itys into a pheasant, Progne into a swallow, and Tereus into an owl.

IXI'ON. Son of Phlegyas, king of the Lapithae. For attempting to produce thunder, Jupiter cast him into Hades, and had him bound to a wheel, surrounded with serpents, which is forever turning over a river of fire.

JAN'I. A place in Rome where there were three statues of Janus, and it was a meeting place for usurers and creditors.

JA'NITOR. A title of Janus, from the gates before the doors of private houses being called Januae.

JA'NUS. A king of Italy said to have been the son of Coelus, others say of Apollo. He sheltered Saturn when he was driven from heaven by Jupiter. Janus presided over highways, gates, and locks, and is usually represented with two faces.

JA'SON. Son of Aeson, king of Iolcos. He was brought up by the centaur Chiron. His uncle Aetes sent him to fetch the Golden Fleece from Colchis (see ARGONAUTS). He went in the ship Argo with 49 companions, the flower of Greek youth. With the help of Juno they got safe to Colchis, but the King Aetes promised to restore the Golden Fleece only on condition that the Argonauts performed certain services. Jason was to tame the wild fiery bulls, and to make them plow the field of Mars; to sow in the ground the teeth of a serpent, from which would spring armed men who would fight against him who plowed the field of Mars; to kill the fiery dragon which guarded the tree on which the Golden Fleece was hung. The fate of Jason and the rest of the Argonauts seemed certain; but Medea, the king's daughter, fell in love with Jason, and with the help of charms which she gave him he overcame all the difficulties which the king had put in his way. He took away the Golden Fleece and Medea also. The king sent his son Absyrtus to overtake the fugitives, but Medea killed him, and strewed his limbs in his father's path, so that he might be delayed in collecting them, and this enabled Jason and Medea to escape. After a time Jason got tired of Medea, and married Glauce, which cruelty Medea revenged by killing her children before their father's eyes. Jason was accidentally killed by a beam of the ship Argo falling on him.

JOCAS'TA, otherwise **EPICASTA.** Wife of Laius, king of Thebes, who in after life married her own son, Oedipus, not knowing who he was, and, on discovering the fatal mistake, hanged herself.

JOVE. A very general name of Jupiter.

JUDGES IN HADES, THE. Rhadamanthus for Asiatics; Aeacus for Europeans. Minos was the presiding judge.

JUGATIN'US. One of the nuptial deities.

JU'NO. Daughter of Saturn and Ops, alias Cybele. She was married to Jupiter, and became queen of all the gods and goddesses, and mistress of heaven and earth. Juno was the mother of Mars, Vulcan, Hebe, and Lucina. She prompted the gods to conspire against Jupiter, but the attempt was frustrated, and Apollo and Neptune were banished from heaven by Jupiter. Juno is the goddess of marriage, and the protectress of married women; and she had special regard for virtuous women.

JU'PITER. Son of Saturn and Cybele (or Ops); born on Mount Ida, in Crete, and nourished by the goat Amalthaea. When quite young Jupiter rescued his father from the Titans; and afterwards, with the help of Hercules, defeated the giants, the sons of earth, when they made war against heaven. Jupiter was worshiped with great solemnity under various names by most of the heathen nations. The Africans called him Ammon; the Babylonians, Belus; and the Egyptians, Osiris (see JOVE). He was represented as a majestic personage seated on a throne, holding in his hands a scepter and a thunderbolt; at his feet stood a spread eagle.

KA'LI. A Hindu goddess, after whom Calcutta is named.

KA'LOC. One of the chief of the Mexican gods.

KAM'A. The Hindu god of love.

KEB'LAH. The point of the compass to which worshipers look during their invocations. Thus the Sol or Sun worshipers turn to the east, where the sun rises, and the Mohammedans turn towards Mecca.

KE'DEBLI. In Mohammedan mythology, is a god corresponding to the English St. George, and is still invoked by the Turks when they go to war.

KI'UN. The Egyptian Venus.

KNEPH. An Egyptian god, having a ram's head and a man's body.

KRISH'NA. An Indian god, the revenger of wrongs; also called the Indian Apollo.

KRO'DO. The Saxon Saturn.

KU'MA'RA. The war god of the Hindus.

KU'VERA. The Hindu god of riches.

LA'BE. The Arabian Circe, who had unlimited power of metamorphosis.

LACH'ESIS. One of the three Fates or Parcae. She spun the thread of life.

LACTU'RA. One of the goddesses of growing corn.

LA'DON. The dragon which guarded the apples in the garden of the Hesperides. Also the name of one of Actaeon's hounds. Also the river to which Syrinx fled when pursued by Pan, where she was changed into a reed, and where Pan made his first pipe.

LAE'LAPS. One of Diana's hunting dogs, which, while pursuing a wild boar, was petrified. Also the name of one of Actaeon's hounds.

LAKSH'MI. Hindu goddess of wealth and pleasure. One of the wives of Vishnu.

LAM'IA. An evil deity amongst the Greeks and Romans, and the great dread of their children, whom she had the credit of constantly enticing away and destroying.

LAM'PUS. One of Aurora's chariot horses.

LAOC'O-ON. One of the priests of Apollo, who was, with his two sons, crushed to death by serpents, because he opposed the admission of the wooden horse to Troy.

LAOM'EDON. Son of Ilus, a Trojan king. He was famous for having, with the assistance of Apollo and Neptune, built the walls of Troy.

LAP'IS. The oath stone. The Romans used to swear by Jupiter Lapis.

LAP'ITHUS. Son of Apollo. His numerous children were called Lapithae, and they are notorious for their fight with the centaurs at the nuptial feast of Perithous and Hippodamia.

LA'RES AND PENA'TES. Sons of Mercury and Lara, or, as other mythologists say, of Jupiter and Lamida. They belonged to the lower order of Roman gods, and presided over homes and families.

LATO'NA. Daughter of Coeus and Phoebus, mother of Apollo and Diana. Being admired so much by Jupiter, Juno was jealous, and Latona was the object of the goddess's constant persecution.

LAVER'NA. The goddess of thieves.

LE'DA. The mother of Castor and Pollux, their father being Jupiter, in the shape of a swan. After her death she received the name of Nemesis.

LEM'URES. The specters of departed souls. Milton, in his *Ode to the Nativity*, says "Lemures moan with midnight plaint." They are sometimes referred to as the Manes of the dead.

LER'NA. The lake near Argos where Hercules conquered the Hydra.

LE'THE. One of the rivers of the infernal regions, of which the souls of the departed are obliged to drink to produce oblivion or forgetfulness of everything they did or knew while alive on the earth.

LEUCOTH'EA. The name of Ino after she was transformed into a sea nymph.

LEVA'NA. The deity who presided over newborn infants.

LIAK'URA. Mount Parnassus.

LIBITI'NA. The chief of the funeral deities.

LIB'YSSA. Queen of fays and fairies.

LIGE'A. A wood nymph, dryad.

LI'LITH. In Jewish myth, a great enemy to newborn children. She was said to have been Adam's first wife, but, refusing to submit to him, was turned from Paradise and made a specter.

LI'NA. The goddess of the art of weaving.

LIN'DOR. A lover in the shape of a shepherd, like Corydon; a love-sick swain.

LO'FEN. The Scandinavian god who guards friendship.

LOF'UA. The Scandinavian goddess who reconciles lovers.

LO'KI. The Scandinavian Satan, the god of strife, the spirit of evil.

LO'TIS. A daughter of Neptune, who fled from Priapus, and only escaped from him by being transformed into a lotus plant.

LU'CIAN. The impersonation of folly, changed into an ass.

LU'CIFER. The morning star.

LUCI'NA. The goddess who presides at the birth of children. She was a daughter of Jupiter and Juno.

LUD. In ancient British mythology the king of the Britons.

LU'NA. The name of Diana as a celestial divinity. See DIANA and HECATE.

LU'PERCUS or **PAN.** The Roman god of fertility. His festival day was 15th February, and the festivals were called Lupercalia.

LYCAON'IAN FOOD. Execrable viands, such as were supplied to Jupiter by Lycaon. To test the divine knowledge of the god he served up human flesh, which Jove discovered, and punished Lycaon by turning him into a wolf.

LYCIAN CLOWNS. Turned into frogs by Latona or Ceres.

LYMNI'ADES. Nymphs who resided in marshes.

LYN'CEUS. One of the Argonauts. The personification of sharp-sightedness.

LYRE. This musical instrument is constantly associated with the doings of the ancient deities. Amphion built the walls of Thebes by the music of his lyre.

MAEN'ADES. Priestesses of Bacchus.

MAHA'SOCR. The Hindu god of evil.

MA'IA. The mother of the Grecian Mercury.

MAM'MON. The money god.

MA'NES. The souls of the departed. The god of funerals and tombs.

MA'NU. The Hindu god of law.

MARI'NA. A name of Venus, meaning sea foam, from her having been formed from the froth of the sea.

MARS. The god of war, the son of Jupiter and Juno. Venus was his favorite goddess, and amongst their children were Cupid, Anteros, and Harmonia. In the Trojan War Mars took the part of the Trojans, but was defeated by Diomede.

MAR'SYAS. The name of the piper who challenged Apollo to a musical contest, and, being defeated, was flayed to death by the god. He was the supposed inventor of the flute.

MA'RUT. The Hindu god of tempestuous winds.

MATU'RA. One of the rural deities who protected the growing corn at time of ripening.

MAX'IMUS. One of the appellations of Jupiter, being the greatest of the gods.

MEDE'A. Wife of Jason, chief of the Argonauts.

MEDU'SA. One of the Gorgons. Minerva changed her beautiful hair into serpents. She was conquered by Perseus, who cut off her head, and placed it on Minerva's shield. Every one who looked at the head was turned into stone.

MEGAE'RA. One of the three Furies.

MELLO'NA. One of the rural divinities, the goddess of bees.

MELPOM'ENE. One of the Muses, the goddess of tragedy.

MEN'DES. An Egyptian god like Pan. He was worshiped in the form of a goat.

MENELA'US. A Spartan king. The elopement of his wife Helen with Paris was the origin of the siege of Troy.

MER'CURY. The son of Jupiter and Maia; was the messenger of the gods, and the conductor of the souls of the dead to Hades. He was the supposed inventor of weights and measures, and presided over orators and merchants.

ME'RU. The abode of the Hindu god Vishnu. It is at the top of a mountain 80,000 leagues high. The Olympus of the Indians.

MI'DAS. A king of Phrygia, who begged of Bacchus the special gift that everything he touched might be turned into gold. The request was granted, and as soon as he touched his food it also was turned to gold, and for fear of being starved he was compelled to ask the god to withdraw the power he had bestowed upon him. He was told to bathe in the river Pactolus. He did so, and the sands which he stood on were golden forever after. It was this same king who, being appointed to be judge in a musical contest between Apollo and Pan, gave the Satyr the palm; whereupon Apollo, to show his contempt, bestowed on him a pair of asses' ears. This gave rise to the term "Midas-eared," as a synonym for ill-judged, or indiscriminate.

MI'LO. A celebrated Croton athlete, who is said to have felled an ox with his fist, and to have eaten the beast in one day.

MIMALLO'NES. The "wild women" who accompanied Bacchus, so called because they mimicked his actions.

MI'MIR. In Scandinavian mythology the god of wisdom.

MINER'VA. The goddess of wisdom, war, and the liberal arts; is said to have sprung from the head of Jupiter fully armed for battle. She was a great benefactress of mankind, and patroness of the fine arts. She was the tutelar deity of the city of Athens.

MI'NOS. The principal of the three judges of the lower world, before whom the spirits of the departed appeared and heard their doom.

MIN'OTAUR. The monster, half man, half bull, which Theseus slew.

MITH'RA. A Persian divinity, the ruler of the universe, corresponding with the Roman Sol.

MNEMOS'YNE. Mother of the Muses and goddess of memory. Jupiter courted the goddess in the guise of a shepherd.

MOAK'IBAT. The recording angel of the Mohammedans.

MO'LOCH. A god of the Phoenicians to whom human victims, principally children, were sacrificed. Moloch is figurative of the influence which impels us to sacrifice that which we ought to cherish most dearly.

MO'MUS. The god of sarcasm. The god who blamed Jove for not having made a window in man's breast, so that his thoughts could be seen. His bitter jests occasioned his being driven from heaven in disgrace.

MONE'TA. A name given to Juno by those writers who considered her the goddess of money.

MOON. The moon was, by the ancients, called Hecate before and after setting; Astarte when in crescent form; Diana when in full.

MOR'PHEUS. The god of sleep and dreams, the minister of Somnus.

MORS. Death, a daughter of Nox.

MUN'IN. The Scandinavian god of memory, represented by the raven that was perched on Odin's shoulder.

MUSCA'RIUS. A name given to Jupiter because he kept off the flies from the sacrifices.

MU'SES, THE. Nine daughters of Jupiter and Mnemosyne. They presided over the arts and sciences, music and poetry. Their names were Calliope, Clio, Erato, Thalia, Melpomene, Terpsichore, Euterpe, Polyhymnia, and Urania. They principally resided in Mount Parnassus, at Helicon.

MY'THRAS. The Egyptian name of Apollo.

NAI'ADS, THE. Beautiful nymphs of human form who presided over springs, fountains, and wells. They resided in the meadows by the sides of rivers. Vergil mentions Aegle as being the fairest of them.

NAN'DI. The Hindu goddess of joy.

NARA'KA. The name of the infernal regions amongst the Hindus.

NARA'YANA. The mover of the waters. The Hindu god of tides.

NARCIS'SUS. Son of Cephisus and the Naiad Liriope; a beautiful youth, who was so pleased with the reflection of himself which he saw in the placid water of a fountain that he could not help loving it, imagining that it must be some beautiful nymph. His fruitless endeavors to possess himself of the supposed nymph drove him to despair, and he killed himself. There sprang from his blood a flower, which was named after him, Narcissus.

NAS'TROND. The Scandinavian place of eternal punishment, corresponding with Hades.

NA'TIO. A Roman goddess who took care of young infants.

NEM'ESIS. The goddess of vengeance or justice, one of the infernal deities. Her mother was Nox. She was supposed to be constantly traveling about the earth in search of wickedness, which she punished with the greatest severity.

NEPHA'LIA. Grecian festivals in honor of Mnemosyne, the mother of the Muses.

NEP'TUNE. God of the sea, a son of Saturn and Cybele, and brother of Jupiter and Pluto. He quarreled with Jupiter because he did not consider that the dominion of the sea was equal to Jupiter's empire of heaven and earth; and he was banished from the celestial regions, after having conspired with Pluto to dethrone Jupiter.

NERE'IDES, THE. Aquatic nymphs. They were daughters of Nereus and Doris, and 50 in number. They are generally represented as beautiful girls riding on dolphins, and carrying tridents in the right hand.

NERE'US. A sea deity, husband of Doris. He had the gift of prophecy, and foretold fates; but he had also the power of assuming various shapes, which enabled him to escape from the importunities of those who were anxious to consult him.

NES'SUS. The name of the Centaur which was destroyed by Hercules for insulting Deianira.

NES'TOR. A grandson of Neptune, his father being Neleus, and his mother Chloris. Homer makes him one

of the greatest of the Greek heroes. He was present at the famous battle between the Lapithae and the Centaurs, and took a leading part in the Trojan War. He was the wise counselor of the Greeks.

NID'HOGG. In Scandinavian mythology the dragon which dwells in Nastrond.

NIF'LHEIM. The Scandinavian hell. It was supposed to consist of nine ' st regions of ice beneath the North Pole, where darkness reigns eternally. See NASTROND.

NI'OBE. A daughter of Tantalus, and the personification of grief. By her husband Amphion she had seven sons and seven daughters. By the orders of Latona the father and sons were killed by Apollo, and the daughters (except Chloris) by Diana. Niobe, being overwhelmed with grief, escaped further trouble by being turned into a marble statue.

NO'MIUS. A lawgiver; one of the names of Apollo. This title was also given to Mercury for the part he took in inventing beneficent laws.

NORNS. Three Scandinavian goddesses, who wove the woof of human destiny.

NOX. The daughter of Chaos, and sister of Erebus. She personified night, and was the mother of Mors, Nemesis, and the Fates.

NUN'DINA. The goddess who took charge of children when they were nine days old—the day on which the Romans named their children.

NUPTIA'LIS. A title of Juno. When the goddess was invoked under this name, the gall of the victim was taken out and thrown behind the altar, signifying that there should be no gall (bitterness) or anger between married people.

NU'RIEL. In Hebrew mythology the god of hailstorms.

NYCTE'LIUS. A name given to Bacchus, because his festivals were celebrated by torchlight.

NYMPHS. This was a general name for a class of inferior female deities who were attendants of the gods. Some of them presided over springs, fountains, wells, woods, and the sea.

NY'SAE. The names of the nymphs by whom Bacchus was nursed.

NY'SEUS. A name of Bacchus, because he was worshiped at Nysa.

NY'SUS. A king of Megara who was invisible by virtue of a particular lock of hair. This lock his daughter Scylla cut off, and so betrayed her father to his enemies. She was changed into a lark, and the king into a hawk, and he still pursues his daughter, intending to punish her for her treachery.

OAN'NES. An Eastern god, represented as a monster, half man, half fish. He was said to have taught men the use of letters in the daytime, and at night to have retired to the depth of the ocean.

OBAM'BOU. A devil of African mythology.

OCEAN'IDES. Sea nymphs, daughters of Oceanus and Tethys. Their numbers are variously estimated by different poets, some saying there were as many as 3000, while others say there were as few as 16. The principal of them are mentioned under their respective names, as Amphitrite, Doris, Metis, etc.

OCE'ANUS. Son of Coelus and Terra, and husband of Tethys. Several mythological rivers were called his sons, as Alpheus, Peneus, etc., and his daughters were called the Oceanides.

OCRID'ION. A king of Rhodes, who was deified after his death.

OCY'PETE. One of the Harpies, who infected everything she touched. The word means swift of flight.

OCY'ROE. A daughter of Chiron, who had the gift of prophecy. She was metamorphosed into a mare.

O'DIN. In Scandinavian mythology the god of the universe, and reputed father of all the Scandinavian kings. His wife's name was Friga, and his two sons were Thor and Balder.

OED'IPUS. A son of Laius, king of Thebes, best known as the solver of the famous enigma propounded by the Sphinx.

OENO'NE. Wife of Paris, a nymph of Mount Ida, who had the gift of prophecy.

OGYG'IA. An island, the abode of Calypso, in the Mediterranean Sea. It was so beautiful in sylvan scenery that even Mercury (who dwelt on Olympus) was charmed with the spot.

OLE'NUS. A son of Vulcan, husband of Lethaea, a woman who thought herself more beautiful than the goddesses, and as a punishment she and her husband were turned into stone statues.

OLYM'PIUS. A name of Jupiter, from Olympia, where the god had a splendid temple, which was considered to be one of the seven wonders of the world.

OLYM'PUS. The magnificent mountain on the coast of Thessaly, 9000 feet high, where the gods were supposed to reside. There were several other smaller mountains of the same name.

OLY'RAS. A river near Thermopylae, which, it is said, attempted to extinguish the funeral pile on which Hercules was consumed.

OMOPHA'GIA. A Bacchanalian festival at which some uncooked meats were served.

OM'PHALE. The queen of Lydia, to whom Hercules was sold as a bondsman for three years for the murder of Iphitus. Hercules fell in love with her, and led an effeminate life in her society, wearing female apparel, while Omphale wore the lion's skin.

ONA'RUS. A priest of Bacchus.

ONU'VA. The Venus of the ancient Gauls.

OPA'LIA. Roman festivals in honor of Ops, held on 14th of the calends of January.

OPS. Mother of the gods, a daughter of Coelus and Terra. She was known by the several names of Bona Dea, Rhea, Cybele, Magna Mater, Proserpine, Tellus, and Thya; and occasionally she is spoken of as Juno and Minerva. She personified labor, and is represented as a comely matron, distributing gifts with her right hand, and holding in her left hand a loaf of bread. Her festival was the 14th day of the January calends.

ORBO'NA. The goddess of parents bereft of their children.

O'READS. Mountain nymphs, attendants on Diana.

ORGIES. Drunken revels. The riotous feasts of Bacchus were so designated.

ORI'ON. A famous handsome giant, who was blinded by Oenopion for a grievous wrong done to Merope, and he was expelled from Chios. The sound of the Cyclops' hammers led him to the abode of Vulcan, who gave him a guide. He then consulted an oracle, and had his sight restored, as Longfellow says, by fixing

"His blank eyes upon the sun."

He was afterwards slain by Diana and placed amongst the stars, where his constellation is one of the most splendid.

ORITHY'IA. A daughter of Erechtheus, whose lover, Boreas, carried her off while she was wandering by the river Ilissus. Her children were Zetes and Calais, two winged warriors who accompanied the Argonauts.

OR'MUZD. In Persian mythology the creator of all things.

O'ROS. The Egyptian Apollo.

OR'PHEUS. Son of Apollo and the muse Calliope. He was married to Eurydice; but she was stung by a serpent, and died. Orpheus went down to Hades to claim her, and played so sweetly with his lute that Pluto allowed Eurydice to return to the earth with Orpheus, but on condition that he did not look behind him until he had reached the terrestrial regions. Orpheus, however, in his anxiety to see if she were following him, looked round, and Eurydice disappeared from his sight, instantly and forever.

OSI'RIS. The Egyptian god of the sun. He was worshiped under the form of an ox.

OS'SA. The mountain which the giants piled on the top of Pelion to enable them to ascend to heaven and attack the gods.

PACTO'LUS. The river in Lydia where Midas washed himself by order of Bacchus, and the sands were turned to gold.

PAE'AN. A name given to Apollo, from *paean*, the hymn which was sung in his honor after he had killed the serpent Python.

PALAE'MON or **MELICERTA.** A sea god, son of Athamas and Ino.

PA'LES. The goddess of shepherds and protectress of flocks. Her festivals were called Palilia.

PALLA'DIUM. A famous statue of the goddess Pallas (Minerva). She is sitting with a spear in her right hand, and in her left a distaff and spindle. Various accounts are given of the origin of it. Some writers say it fell from the skies. It was supposed that the preservation of the statue would be the preservation of Troy; and during the Trojan War the Greeks were greatly encouraged when they became the possessors of it.

PAL'LAS or **MINERVA.** The name was given to Minerva when she destroyed a famous giant named Pallas.

PAN. The Arcadian god of shepherds, huntsmen, and country folk, and chief of the inferior deities; usually considered to have been the son of Mercury and Penelope.

PANDO'RA. According to Hesiod, the first mortal

female. Vulcan made her of clay, and gave her life. Venus gave her beauty; and the art of captivating was bestowed upon her by the Graces. She was taught singing by Apollo, and Mercury taught her oratory. Jupiter gave her a box, the famous "Pandora's Box," which she was told to give to her husband, Epimetheus, brother of Prometheus. As soon as he opened it there issued from it numberless diseases and evils which were soon spread all over the world, and from that moment they have afflicted the human race. It is said that Hope alone remained in the box.

PAN'THEON. The temple of all the gods, built by Agrippa at Rome, in the reign of Augustus.

PAP'REMIS. The Egyptian Mars.

PAR'CAE, THE. Goddesses who presided over the destiny of human beings. They were also called the Fates, and were three in number, Atropos, Clotho, and Lachesis.

PARIS. Son of Priam, king of Troy, and his mother was Hecuba. It had been predicted that he would be the cause of the destruction of Troy, and his father therefore ordered him to be strangled as soon as he was born; but the slave who had been intrusted with this mission took the child to Mount Ida, and left it there. Some shepherds, however, found the infant and took care of him. He lived among them till he had grown to man's estate, and he then married Oenone, a nymph of Ida. At the famous nuptial feast of Peleus and Thetis, Discordia, who had not been invited, attended secretly; and when all were assembled, she threw amongst the goddesses a golden apple, on which was inscribed, "To the fairest." This occasioned a great contention, for each thought herself the fairest. Ultimately, the contestants were reduced to three, Juno, Pallas (Minerva), and Venus; but Jove himself could not make these three agree, and it was decided that Paris should be the umpire. He was sent for, and each of the goddesses courted his favor by offering all sorts of bribes. Juno offered him power, Pallas wisdom, and Venus promised him the most beautiful woman in the world. Paris gave the golden apple to Venus. Soon after this episode Priam owned Paris as his son, and sent him to Greece to fetch Helen, who was renowned as being the most beautiful woman in the world. She was the wife of Menelaus, king of Sparta; but during his absence Paris carried Helen away to Troy, and this gave rise to the celebrated war between the Greeks and the Trojans, which ended in the destruction of Troy. Paris was among the 676,000 Trojans who fell during or after the siege.

PARNAS'SIDES. A name common to the Muses, from Mount Parnassus.

PARNAS'SUS. The mountain of the Muses in Phocis, and sacred to Apollo and Bacchus. Any one who slept on this mountain became a poet. It was named after one of the sons of Bacchus.

PAR'THENON. The temple of Minerva (or Pallas), at Athens. It was destroyed by the Persians, and rebuilt by Pericles.

PAR'THENOS. A name of Juno, and also of Minerva.

PASIPH'AE. The reputed mother of the Minotaur killed by Theseus. She was said to be the daughter of Sol and Perseis, and her husband was Minos, king of Crete.

PASITH'EA. Sometimes there are *four* Graces spoken of; when this is so, the name of the fourth is Pasithea.

PA'VAN. Hindu god of the winds.

PEG'ASUS. The famous winged horse which was said to have sprung from the blood of Medusa when her head was cut off by Perseus. His abode was on Mount Helicon, where, by striking the ground with his hoof, he caused water to spring forth, which formed the fountain afterwards called Hippocrene.

PE'LEUS. A king of Thessaly, who married Thetis, one of the Nereids.

PE'LIAS. A son of Neptune and Tyro. He usurped the throne of Cretheus, which Jason was persuaded to relinquish to take the command of the Argonautic expedition. On the return of Jason, Medea, the sorceress, undertook to restore Pelias to youth, but required that the body should first be cut up and put in a caldron of boiling water. When this had been done, Medea refused to fulfill her promise.

PE'LIAS. The name of the spear of Achilles, which was so large that none could wield it but the hero himself.

PE'LION. A well-wooded mountain, famous for the wars between the giants and the gods, and as the abode of the Centaurs, who were expelled by the Lapithae.

PE'LOPS. Son of Tantalus, king of Phrygia. His father killed him, and served him up to be eaten at a feast given to the gods, who, when they found out what the father of Pelops had done, restored the son to life, and he afterwards became the husband of Hippodamia.

PENA'TES. Roman domestic gods.

PERSEPH'ONE. The Greek name of Proserpine.

PER'SEUS. A son of Jupiter and Danae, the daughter of Acrisius. His first famous exploit was against the Gorgon, Medusa. He was assisted in this enterprise by Pluto, who lent him a helmet which would make him invisible. Pallas lent him her shield, and Mercury supplied him with wings. He made a speedy conquest of the Gorgon, and cut off Medusa's head, with which he flew through the air, and from the blood sprang the winged horse Pegasus. As he flew along he saw Andromeda chained to the rock, and a sea monster ready to devour her. He killed the monster, and married Andromeda. When he got back, he showed the Gorgon's head to King Polydectes, and the monarch was immediately turned into stone.

PHA'ETON. A son of Sol, or, according to most mythologists, of Phoebus and Clymene. Anxious to display his skill in horsemanship, he was allowed to drive the chariot of the sun for one day. The horses soon found out the incapacity of the charioteer, became unmanageable, and overturned the chariot. There was such great fear of injury to heaven and earth, that Jove, to stop the destruction, killed Phaëton with a thunderbolt.

PHA'ON. A boatman, who received from Venus a box of ointment, with which, when he anointed himself, he grew so beautiful that Sappho became enamored of him; but when the ointment had all been used Phaon returned to his former condition, and Sappho, in despair, drowned herself.

PHILOCTE'TES. Son of Poeas, and one of the companions of Jason on his Argonautic expedition. He was present at the death of Hercules, and received from him the poisoned arrows which had been dipped in the blood of the Hydra. These arrows, an oracle declared, were necessary to be used in the destruction of Troy, and Philoctetes was persuaded by Ulysses to go to assist at the siege. He appears to have used the weapons with great dexterity and with wonderful effect, for Paris was among the heroes whom he killed.

PHILOME'LA. A daughter of Pandion, king of Athens, who was transformed into a nightingale.

PHLEG'ETHON. A river of fire in the infernal regions. It was the picture of desolation, for nothing could grow on its parched and withered banks.

PHLE'GON (earth loving). One of the four chariot horses of Sol.

PHLE'GYAS. Son of Mars and father of Ixion and Coronis. For his impiety in desecrating and plundering the temple of Apollo at Delphi, he was sent to Hades, and there was made to sit with a huge stone suspended over his head, ready to be dropped on him at any moment.

PHOE'BUS. A name of Apollo, signifying light and life.

PHOR'CUS. A son of Neptune, father of the Gorgons.

PHRYXUS. Brother of Helle. He escaped from his step-mother, Ino, on the back of the golden ram, which took him to Colchis. Phryxus sacrificed the ram to Jupiter and gave the golden fleece to Aetes. It was hung in the garden of Ares and guarded by a sleepless dragon.

PICUM'NUS. A rural divinity, who presided over the manuring of lands, called also Sterentius.

PI'CUS. A son of Saturn, father of Faunus; was turned into a woodpecker by Circe, whose love he had not requited.

PIER'IDES. A name of the Muses, derived from Pieria, a fountain near Mount Olympus, where they were supposed to have been born. Also, the daughters of Pierus, a king of Macedonia, who settled in Boeotia. They challenged the Muses to sing, and were changed into magpies.

PILUM'NUS. A rural divinity, who presided over the corn while it was being ground.

PIRITH'OUS. A son of Ixion and great friend of Theseus, king of Athens.

PI'THO. The goddess of persuasion, daughter of Mercury and Venus. She is sometimes referred to under the name of Suada.

PLEI'ADES, THE. Seven daughters of Atlas and Pleione. Their names were Electra, Alcyone, Celaeno, Maia, Sterope, Taygete, and Merope.

PLU'TO. King of the infernal regions. He was a son of Saturn and Ops, and husband of Proserpine, daughter of Ceres. He is sometimes referred to under the name Dis, and he personifies Hades. His principal attendant was the three-headed dog Cerberus, and about his throne were the Eumenides, the Harpies, and the Furies.

PLU'TUS. The god of riches; was son of Jason and Ceres. He is described as being blind and lame; blind because he so often injudiciously bestows his riches, and lame because fortunes come so slowly.

PLU'VIUS. A name of Jupiter, because he had the rain in his control.

PODALIR'IUS. A famous surgeon, a son of Aesculapius, who was very serviceable among the soldiers in the Trojan War.

POL'LEAR. Son of Siva, the Hindu god of wisdom.

POL'LUX. Twin brother of Castor. Their father was Jupiter and their mother Leda. He and his brother form the constellation Gemini. His Greek name was Polydeuces.

POLYBO'TES. One of the giants who made war against Jupiter.

POLYDEC'TES. Turned into stone when Perseus showed him Medusa's head.

POLYHYM'NIA. Daughter of Jupiter and Mnemosyne. One of the Muses, who presided over singing and rhetoric.

POLYPHE'MUS. One of the most celebrated of the Cyclops, a son of Neptune. He captured Ulysses and 12 of his companions, and it is said that six of them were eaten. The rest escaped by the ingenuity of Ulysses, who destroyed the Cyclop's one eye with a firebrand.

POLYX'ENA. Daughter of Priam, king of Troy. It was by her treachery that Achilles was shot in the heel.

POMO'NA. The Roman goddess of fruits and gardens.

PORTU'NUS (PALAEMON). Son of Ino; was god of harbors.

POSEI'DON. A name of Neptune.

PRAC'RITI. The Hindu goddess of nature.

PRI'AM. The last king of Troy.

PRIA'PUS. The guardian of gardens and god of natural reproduction; was son of Venus and Bacchus.

PRIS'CA. Another name of Vesta.

PRO'CRIS. Daughter of the king of Athens.

PROME'THEUS. Son of Iapetus and father of Deucalion. He presumed to make clay men, and animate them with fire which he had stolen from heaven. This so displeased Jupiter that he sent him a box full of evils, which Prometheus refused; but his brother Epimetheus, not so cautious, opened it, and the evils spread over all the earth. Jupiter then punished Prometheus by commanding Mercury to bind him to Mount Caucasus, where a vulture daily preyed upon his liver, which grew in the night as much as it had been reduced in the day, so that the punishment was a prolonged torture. Hercules at last killed the vulture and set Prometheus free.

PROS'ERPINE. A daughter of Jupiter and Ceres. Pluto carried her off to the infernal regions and made her his wife. She was known by the names of "the Queen of Hades," Hecate, Juno Inferna, and Libitina.

PRO'TEUS. A marine deity, who could foretell events and convert himself at will into all sorts of shapes.

PSY'CHE. The wife of Cupid. The name is Greek, signifying the soul or spirit.

PYGMA'LION. A famous sculptor, who had resolved to remain unmarried, but he made such a beautiful statue of a goddess that he begged Venus to give it life. His request being granted, Pygmalion married the animated statue.

PYLO'TIS. A Greek name of Minerva.

PYR'ACMON. One of the chiefs of the Cyclops.

PY'ROIS (luminous). One of the four chariot horses of Sol.

PY'THIA. The priestess of Apollo at Delphi, who delivered the answers of the oracle. Also the name of the games celebrated in honor of Apollo's victory over the Python.

PY'THON. A famous serpent killed by Apollo.

QUAD'RATUS. A surname given to Mercury, because some of his statues were four-sided.

QUAD'RIFRONS. Janus was sometimes depicted with four faces instead of the usual two, and he was then called Janus Quadrifrons.

QUI'ES. The Roman goddess of rest. She had a temple just outside the Collini gate of Rome.

QUIRI'NUS. A name given to Mars during war time; and Vergil refers to Jupiter under the same name.

RA'MA. A Hindu god, who was the terrestrial representative of Vishnu.

REM'BHA. The Hindu goddess of pleasure.

RHADAMAN'THUS. A son of Jupiter and Europa; was the judge of the Asiatics in the infernal regions.

RHAMNU'SIA. A name of Nemesis, from Rhamnus, a town in Attica, where she had a temple in which was her statue, made of one stone 10 cubits high.

RHE'A. The Greek name of Cybele.

RIM'MON. A Phrygian god of whom Milton says—

> ". . . Rimmon, whose delightful seat
> Was fair Damascus, on the fertile banks
> Of Abana and Pharpar, lucid streams."

ROM'ULUS. The traditional founder of Rome. He was a son of Mars and Ilia, and twin brother of Remus. The infants were thrown into the Tiber, but were miraculously saved and suckled by a she-wolf till they were found by Faustulus, a shepherd, who brought them up. Remus was killed in a quarrel with his brother, and Romulus became the famous emperor.

RUMI'A DEA. The Roman goddess of babes in arms.

RUNCI'NA. The goddess of weeding or cleansing the ground.

SA'GA. The Scandinavian goddess of history.

SAL'AMANDERS. The genii who, according to Plato, lived in fire.

SAL'II. The priests of Mars who had charge of the sacred shields.

SALMO'NEUS. A king of Elis who, for trying to imitate Jupiter's splendors, was sent by the god straight to the infernal regions.

SA'LUS. The Roman god of health.

SAPPHO. A celebrated poetess, a native of Lesbos, who flourished B. C. 610. Her only connection with the goddesses of the time is that the Greeks called her "the tenth Muse."

SAT'URN. King of the Universe; was father of Jupiter, Neptune, and Pluto. These gods quarreled among themselves as to the division of their father's kingdom, which ended in Jupiter having heaven and earth, Neptune the sea, and Pluto the infernal regions.

SATURNA'LIA. Festivals held in honor of Saturn about the 16th or 18th of December. Principally famous for the riotous disorder which generally attended them.

SATUR'NIUS. A name given to Jupiter, Neptune, and Pluto, as sons of Saturn.

SATYAVRA'TA. The Hindu god of law. The same as Menu.

SA'TYRS. The attendants of Silenus, who were similar in most respects to the Fauns who attended Pan.

SCYL'LA. A beautiful nymph who excited the jealousy of Neptune's wife, Amphitrite, and was changed by the goddess into a frightful sea monster, which had six fearfully ugly heads and necks, and who, rising unexpectedly from the deep, used to take off as many as six sailors from a vessel, and carry them to the bottom of the sea. An alternative danger with Charybdis.

SCYL'LA. A daughter of Nysus, who was changed into a lark for cutting off a charmed lock of her father's hair.

SEGES'TA. A rural divinity who protected corn during harvest time.

SEM. The Egyptian Hercules.

SEM'ELE. The mother of Bacchus, who was born in a miraculous manner after Jupiter had visited her, at her special request, in all his terrible splendor. She was deified after her death and named Thyone.

SEMI-DEI. The demi-gods.

SEMO'NES. Roman gods of a class between the "immortal" and the "mortal," such as the Satyrs and Fauns.

SEPTE'RION. A festival held in honor of Apollo, at which the victory of that god over the Python was grandly represented.

SERA'PIS. The Egyptian Jupiter, and generally considered to be the same as Osiris.

SERPENT. The Greeks and Romans considered the serpent as symbolical of guardian spirits, and as such it was often engraved on their altars.

SESHA or **ANANTA.** The Egyptian Pluto.

SILE'NUS. A Bacchanalian demi-god, the chief of the Satyrs. He is generally represented as a fat, drunken old man, riding on an ass, and crowned with flowers.

SI'RENS, THE. Sea nymphs, who by their music allured mariners to destruction. To avoid the snare when nearing their abode, Ulysses had the ears of his companions stopped with wax, and had himself tied to the mast of his ship. They thus sailed past in safety; but the Sirens, thinking that their charms had lost their powers, drowned themselves.

SIS'YPHUS. Son of Aeolus and Enaretta. He was condemned to roll a stone to the top of a hill in the infernal regions, and, as it rolled down again when he reached the summit, his punishment was perpetual.

SI'VA. In Hindu mythology the "changer of form."

SLEIP'NER. The eight-legged horse of Odin, the chief of the Scandinavian gods.

SOL. The sun. The worship of the god Sol is the

oldest on record, and though he is sometimes referred to as being the same as the god Apollo, there is no doubt he was worshiped by the Egyptians, Persians, and other nations long before the Apollo of the Greeks was heard of.

SOM'NUS. The god of sleep, son of Nox (Night). He was one of the infernal deities, and resided in a gloomy cave, void of light and air.

SOS'PITA. A name of Juno, as the safeguard of women.

SO'TER. A Greek name of Jupiter, meaning deliverer.

SPHINX, THE. A monster having the head and breasts of a woman, the body of a dog, the tail of a serpent, the wings of a bird, the paws of a lion, and a human voice. She lived in the country near Thebes, and proposed to every passer-by the following enigma: "What animal is that which walks on four legs in the morning, two at noon, and three in the evening?" Oedipus solved the riddle thus: "Man is the animal; for when an infant he crawls on his hands and feet, in the noontide of life he walks erect, and as the evening of his existence sets in he supports himself with a stick." When the sphinx found her riddle solved she destroyed herself.

STEREN'TIUS. The Roman god who invented the art of manuring lands. See PICUMNUS.

STER'OPES. One of the Cyclops.

STYMPHALI'DES. The carnivorous birds destroyed in the sixth labor of Hercules.

STYX. A noted river of Hades, which was held in such high esteem by the gods that they always swore, "By the Styx," and such an oath was never violated.

SUA'DA. The goddess of persuasion.

SURADE'VI. The Hindu goddess of wine.

SURY'A. The Hindu god corresponding to the Roman Sol, the sun.

SYLPHS. Genii who, according to Plato, lived in the air.

SYLVES'TER. The name of Mars when he was invoked to protect cultivated land from the ravages of war.

SYR'INX. The name of the nymph who, to escape from the importunities of Pan, was by Diana changed into reeds, out of which he made his celebrated pipes, and named them "The Syrinx."

TAC'ITA. The goddess of silence.

TAN'TALUS. Father of Niobe and Pelops, who, as a punishment for serving up his son Pelops as meat at a feast given to the gods, was placed in a pool of water in the infernal regions; but the waters receded from him whenever he attempted to quench his burning thirst. Hence the word tantalizing.

TAR'TARUS. An inner region of hell, to which the gods sent the exceptionally depraved.

TELCHI'NES. Priests of Cybele, who were famous magicians.

TEL'LUS. A name of Cybele, wife of Saturn.

TEMPLE. An edifice erected to the honor of a god or goddess, in which the sacrifices were offered.

TENTH MUSE. Sappho was so called.

TER'EUS. A son of Mars. He married Progne, daughter of the king of Athens, but became enamored of her sister Philomela, who, however, resented his attentions, which so enraged him that he cut out her tongue. When Progne heard of her husband's unfaithfulness she took a terrible revenge (see ITYS). Progne was turned into a swallow, Philomela into a nightingale, Itys into a pheasant, and Tereus into a hoopoo, a kind of vulture,—some say an owl.

TERGEMI'NA. A name of Diana, alluding to her triform divinity as a goddess of heaven, earth, and hell.

TER'MINUS. The Roman god of boundaries.

TERPSICH'ORE. One of the nine Muses. She presided over dancing.

TER'RA. The earth; one of the most ancient of the Grecian goddesses.

THALES'TRIS. A queen of the Amazons.

THALI'A. One of the nine Muses. She presided over festivals and comedy.

THALI'A. One of the Graces.

THAM'YRIS. A skillful singer, who presumed to challenge the Muses to sing, upon condition that if he did not sing best they might inflict any penalty they pleased. He was, of course, defeated, and the Muses made him blind.

THI'A. A daughter of Coelus and Terra; wife of Hyperion.

THE'MIS. A daughter of Coelus and Terra, and wife of Jupiter; was the Roman goddess of laws, ceremonies, and oracles.

THE'SEUS. One of the most famous of the Greek heroes. He was a son of Aegeus, king of Athens.

THE'TIS. A sea goddess, daughter of Nereus and Doris. Her husband was Peleus, king of Thessaly, and she was the mother of the famous Achilles, whom she rendered all but invulnerable by dipping him into the river Styx. See ACHILLES.

THOR. The Scandinavian war god (son of Odin), who had rule over the Aerial regions, and, like Jupiter, hurled thunder against his foes.

THOR'S BELT. A girdle which doubles his strength whenever the war god puts it on.

THOTH. The Mercury of the Egyptians.

THYA'DES. Priestesses of Bacchus, who ran wild in the hills, wearing tiger skins and carrying torches.

THYR'SUS. The staff of Bacchus.

TIME or **SATURN.** The husband of Virtue and father of Truth.

TISIPH'ONE. One of the Furies.

TI'TAN. Elder brother of Saturn, who made war against him, and was ultimately vanquished by Jupiter.

TI'TANS. The supporters of Titan in his war against Saturn and Jupiter.

TITHO'NUS. The husband of Aurora. At the request of his wife the gods granted him immortality, but she forgot at the same time to ask that he should be granted perpetual youth. The consequence was that Tithonus grew old and decrepit, while Aurora remained as fresh as the morning. The gods, however, changed him into a grasshopper, which is supposed to moult as it gets old, and grows young again.

TIT'YUS. A son of Jupiter. A giant who was thrown into the innermost hell for insulting Diana. He, like Prometheus, has a vulture constantly feeding on his ever-growing liver.

TRIPTOL'EMUS. A son of Oceanus and Terra. He was a great favorite of the goddess Ceres, who cured him of a dangerous illness when he was young, and afterwards taught him agriculture.

TRITERI'CA. Bacchanalian festivals.

TRI'TONS. Sons of Triton, a son of Neptune and Amphitrite. They were the trumpeters of the sea gods, and were depicted as a sort of mermen—the upper half of the body being like a man, and the lower half like a dolphin.

TROPHO'NIUS. One of Jupiter's most famous oracles.

TROY. The classic poets say that the walls of this famous city were built by the magic sound of Apollo's lyre.

TRUTH. A daughter of Time, because Truth is discovered in the course of Time. Democritus says that Truth lies hidden at the bottom of a well.

TUTEL'INA. A rural divinity—the goddess of granaries.

TY'PHON. A monster with a hundred heads who made war against the gods, but was crushed by Jove's thunderbolts, and imprisoned under Mount Etna.

TY'PHON. In Egyptian mythology the god who tried to undo all the good work effected by Osiris.

UL'LER. The Scandinavian god who presided over archery and duels.

ULYS'SES. A noted king of Ithaca, whose exploits in connection with the Trojan War, and his adventures on his return therefrom, are the subject of Homer's *Odyssey*. His wife's name was Penelope, and he was so much endeared to her that he feigned madness to get himself excused from going to the Trojan War; but his artifice was discovered, and he was compelled to go. He was of great help to the Grecians, and forced Achilles from his retreat and obtained the charmed arrows of Hercules from Philoctetes, and used them against the Trojans. He enabled Paris to shoot one of them at the heel of Achilles, and so kill that charmed warrior. During his wanderings on his homeward voyage he was taken prisoner by the Cyclops, and escaped, after blinding Polyphemus, their chief. At Aeolia he obtained all the winds of heaven, and put them in bags; but his companions, thinking that the bags contained treasure which they could rob him of when they got to Ithaca, cut them and let out the winds, and the ships were immediately blown back to Aeolia. After Circe had turned his companions into swine on an island where he and they were shipwrecked, he compelled the goddess to restore them to their human shape. As he passed the islands of the Sirens he escaped their allurements by stopping the ears of his companions with wax, and fastening himself to the mast of his ship. His wife Penelope was a pattern of constancy; for, though Ulysses was reported to be dead, she would not marry any one else, and had the satisfaction of having her husband return after an absence of about 20 years.

UN'DINE. A water nymph, or sylph.

UNX'IA. A name of Juno, relating to her protection of newly-married people.

URA'NIA. A daughter of Jupiter and Mnemosyne —one of the Muses, who presided over astronomy.

URA'NUS. The Greek name of Coelus. His descendants are sometimes called Uranids.

UR'GUS. A name of Pluto, signifying the Impeller.

UT'GORD LO'KI. In Scandinavian mythology the king of the giants.

VALHAL'LA. The Scandinavian temple of immortality, inhabited by the souls of heroes slain in battle.

VA'LI. The Scandinavian god of archery.

VALLO'NIA. The goddess of valleys.

VARU'NA. The Hindu Neptune—generally represented as a white man riding on a sea horse, carrying a club in one hand and a rope in the other.

VEJO'VIS. A god of the under world whose power to injure corresponded to that of Jupiter to help; sometimes identified with Apollo.

VE'NUS. The goddess of beauty, and mother of love. She is said to have sprung from the foam of the sea, and was immediately carried to the abode of the gods on Olympus, where they were all charmed with her extreme beauty. Vulcan married her, but she permitted the attention of others of the gods, and notably of Mars, their offspring being Hermione, Cupid, and Anteros. After this she left Olympus and fell in love with Adonis, a beautiful youth, who was killed when hunting a wild boar. Venus indirectly caused the Trojan War, for, when the goddess of discord had thrown among the goddesses the golden apple inscribed "To the fairest," Paris adjudged the apple to Venus, and she inspired him with love for Helen, wife of Menelaus, king of Sparta. Paris carried off Helen to Troy, and the Greeks pursued and besieged the city (see HELEN, PARIS, and TROY). Venus is mentioned by the classic poets under the names of Aphrodite, Cypria, Urania, Astarte. Paphia, Cythera, and the laughter-loving goddess. Her favorite residence was at Cyprus. Incense alone was usually offered on her altars, but if there was a victim it was a white goat. Her attendants were Cupids and the Graces.

VERTICOR'DIA. A Roman name of Venus, signifying the power of love to change the hard hearted. The corresponding Greek name was Epistrophia.

VERTUM'NUS. God of spring, or, as some mythologists say, of the seasons; the husband of Pomona, the goddess of orchards.

VES'TA. Daughter of Saturn and Cybele; was the goddess of fire. She had under her special care and protection a famous statue of Minerva, before which the Vestal Virgins kept a fire or lamp constantly burning.

VES'TAL VIR'GINS. The priestesses of Vesta, whose chief duty was to see that the sacred fire in the temple of Vesta was not extinguished. They were always selected from the best families, and were under a solemn vow of chastity, and compelled to live perfectly pure lives.

VIA'LIS. A name of Mercury, because he presided over the making of roads.

VIC'TORY. A goddess, the daughter of Styx and Acheron, generally represented as flying in the air holding out a wreath of laurel.

VI'DAR. A Scandinavian god, who could walk on the water and in the air. The god of silence (corresponding with the classic Harpocrates).

VIR'TUE. A goddess worshiped by most of the ancients under various names. The way to the temple of honor was through the temple of virtue.

VISH'NU. The Preserver; a principal Hindu god.

VUL'CAN. The god of fire; was the son of Jupiter and Juno. He offended Jupiter, and was by him thrown out of heaven. He was nine days falling, and at last dropped into Lemnos with such violence that he broke his leg, and was lame forever after. Vulcan was married to Venus. He is supposed to have formed Pandora out of clay. His servants were the Cyclops. He was the patron deity of blacksmiths.

VULCANA'LIA. Roman festivals in honor of Vulcan, at which the victims were thrown into the fire and burned to death.

WO'DEN. The Anglo-Saxon form of the Scandinavian god Odin; Wednesday is called after him.

XAN'THUS. The name of the wonderful horse of Achilles.

YA'MA. The Hindu devil, generally represented as a terrible monster of a green color, with flaming eyes.

YGDRA'SIL. The famous ash tree of Scandinavian mythology, under which the gods held daily council.

Y'MIR. The Scandinavian god corresponding to Chaos of the classics.

ZEPH'YR. The god of flowers, a son of Aeolus and Aurora; the west wind.

ZE'TES. With his brother Calais, drove the Harpies from Thrace.

ZE'THUS. Twin brother of Amphion.

ZEUS. The Greek name of Jupiter.

Distinctive Names of Gods and Goddesses.

Apollo, Canoba, Cynthius, Delius, Delphicus, Demarus, Horus, Khrishna, Mythras, Numius, Oros, Paean, Phoebus, Pythius, Sol.
Aurora, Eos.
Bacchus, Biformis, Brisaeus, Dionysus, Nyctelius, Nyseus.
Buddha. Gautama.
Ceres, Cybele, Hestia, Ops, Prisca, Rhea, Vesta.
Cupid, Eros, Kama.
Diana, Artemis, Dyctinna, Hecate, Luna, Phoebe, Proserpine, Tergemina.
Flora, Chloris.
Hercules, Alcides, Sem.
Juno, Hada, Hera, Moneta, Nuptialis, Parthenos, Sospita.
Jupiter, Ammon, Apis, Assabinus, Belus, Capitolinus, Ceraunius, Demarus, Dies Pater, Dodonaeus, Genitor, Gragus, Grapsios, Hemphta, Imperator, Indra, Jove, Maximus, Muscarius, Olympius, Osiris, Pluvius, Saturnius, Soter, Zeus.
Mars, Corythaix, Gradivus, Quirinus, Papremis, Sylvester.
Mercury, Camillus, Caresa, Hermes, Quadratus, Thoth, Vialis.
Minerva, Athena, Ergotis, Glaukopis, Pallas, Pylotis.
Neptune, Consus, Poseidon, Varuna.
Pan, Incubus, Innus, Mendes, Supersus.
Pluto, Dis, Februus, Hades, Shesa, Urgus.
Saturn, Chronos, Krodo.
Venus, Acidalia, Aphrodite, Armata, Astarte, Clucina, Cypria, Cythera, Dione, Erycina, Hortensis, Idalia, Onuva.
Vulcan, Hephaestos.

The Name of God in Forty-Eight Languages.

Ædian ..... Ilos	French ..... Dieu	Lithuanian ..... Diewas
Anglo-Saxon ..... God	Gaelic ..... Diu	Low Latin ..... Diex
Arabic ..... Allah	German ..... Gott	Mahrati ..... Deva
Armenian ..... Teuti	German, Old ..... Diet	Malay ..... Alla
Assyrian ..... Eleah	German, Old High ..... Got	Modern Egyptian ..... Teun
Chaldaic ..... Eiliah	Gothic ..... Guth	Norwegian ..... Gud
Chinese ..... Prussa	Greek ..... Theos	Norse, Old ..... Tiwar
Cretan ..... Thios	Gujarati ..... Khuda	Persian ..... Khoda
Danish ..... Gud	Hebrew ..... Eleah, Jehovah	Polish ..... Bog
Dorian ..... Ilos	Hindustani ..... Khuda	Portuguese ..... Deos
Dutch ..... God	Hindi ..... Brahmā	Punjabi ..... Deva
Egyptian, Old ..... Teut	Icelandic ..... Gud	Sanskrit ..... Deva
English ..... God	Italian ..... Dio	Spanish ..... Dios
Erse (Irish) ..... Dia	Japanese ..... Goezer	Swedish ..... Gud
Finnish ..... Jumala	Lapp ..... Jubinal	Tatar ..... Magatai
Flemish ..... God	Latin ..... Deus	Turkish ..... Allah

CHRISTIANITY.

The Christian religion shares with all religions the recognition of man's dependence upon God. The essential point of distinction between it and all other religions is its provision for salvation through a Saviour sent direct from God, in the person of Jesus Christ. Upon this it bases its conception that it is the only true religion. It regards Judaism as of divine ordination but only preparatory to the coming of Christ, and hence imperfect. It holds that heathenism is debased, and that if any heathen be saved it must come about through the conscious or accidental adoption of means which God has prescribed, and by the complete atonement by Christ. Without this, and faith, and the essential elements of the Gospel, Christianity holds that there can be no salvation.

The history of the growth of the Christian Church is largely a history of its external organization, by which the visible and the invisible Church were connected. The sacerdotal institution was adopted from Judaism, consolidated by Saint Augustine, and culminated in the Papacy; so that membership in the Church and an acknowledgment of the hierarchy became essentials to salvation,—a view which many of the Anglican community recognize. But other Protestant denominations have insisted that the invisible Church is to be emphasized, and have done so to such an extent that almost any form of Church government or organization is recognized by them as being efficient.

The Ancient Church.—The period between the day of Pentecost, in the year 30, to the end of 800 is recognized as the period of the ancient church. It is remarkable for:—

(1) The rapid growth of the early church,
(2) The production of the literature of the New Testament,
(3) The organization of extensive missionary work, and
(4) The increasing opposition of the Jews.

To these are to be added the opposition of the Roman emperors, especially Nero, Domitian, Trajan, Hadrian, Antoninus Pius, and Marcus Aurelius. Grave heresies arose prior to the third century and the establishment of the canon of the New Testament and the writings of the early fathers met these conditions. In the third century, also, missionaries carried the Christian religion to western Europe and eastward to Armenia, Persia, and India. Roman emperors gave the Christians scant acknowledgment during the reigns of Septimius Severus, Caracalla, Heliogabalus, and Alexander Severus; while active persecution occurred in the reigns of Decius (250) and Diocletian (284-305). There was little tolerance or safety until the Edict of Galerius (311) and the Edict of Milan by Constantine (313). When, in 323, Constantine conquered Licinius, the Christian religion was the strongest in the world and became the religion of the Roman Empire.

During the fourth and fifth centuries there were numerous controversies, notably the Arian, demolished at Constantinople (381); the Origenistic (394-407;) the Apollinarian, ended in 381; the Nestorian, rejected at Ephesus in 431; the Eutychian (451); the Monophysite (553); the Monothelitic (680); and the long struggle between Augustine and Pelagius. Within the organization of the Church the most noticeable events were those which set the clergy apart from the laity and clearly marked the difference. For a time in the East, the rise and predominance of Mohammedanism retarded the growth of the Church there. So strongly organized had the Church become in the West that Charlemagne in 800 assumed the crown of the Holy Roman Empire as a vassal of the Bishop of Rome.

The Mediaeval Church.—The breach between the Eastern and Western branches of the Church, which had been growing for many years, culminated in 1054. Many monastic orders with common vows of chastity, poverty, and obedience, arose after the close of the tenth century; and nearly all were founded upon the plan of the Brotherhood of St. Benedict formed five centuries earlier. About the end of the eleventh century the Crusades began. Scholasticism, which sought to reduce the whole religious system to the basis of logic; and mysticism, which investigated and developed doctrines without too close reasoning, played great parts in the development of the Church at this time. Heretical and schismatic movements began among the Paulitians, Cathari, Albigenses, Waldensians, and others, which some historians regard as the first stirring of individual liberty. These were followed by the outbreak of Wiclif in England, and of Huss in Bohemia; and so general did these and similar movements become that the harshest measures for their repression were adopted.

The Modern Church (1500 to the present day).—Many and widely different influences had for some years been preparing the way for the Reformation, as Protestants universally designate their secession from the Roman Catholic Church. It is hard to specify when and where the movement began, or which of the heretical movements previously mentioned contributed most to its advance. But the German movement assumed such a conspicuous and eventful character that it is customary to say that the Reformation began upon the day when Luther fastened to the church door at Wittenberg his 95 objections or theses (All Saints' Eve, October 31, 1517). Calvin urged on the movement in Switzerland and Knox in Scotland. It may be said in general terms that the reformation movement was shared in by the Teutonic races while the Latin peoples retained their allegiance to the Church.

Within the Church there followed a period, known as the counter-reformation, during which the abuses to which she herself had drawn attention were corrected and her continuity with the ancient order was declared unimpaired by the Council of Trent (1545-1563). The Protestant body very soon developed two strongly divergent forces, the Lutheran, or adherents to Luther; and the Reformed, or followers of Calvin. This division increased, and subdivisions into a multiplicity of sects occurred as a logical sequence of the avowal of the authority of Scriptures and of justification by faith. From this division has resulted a renewal of the missionary spirit, which is one of the most marked characteristics of the Modern Church period. This aggressive missionary work has been followed up by Christians of all denominations, and has given to the

world, on the one hand, the self-denying Loyola, Xavier, and others, and, on the other hand, the great pioneer missionary force working throughout the nineteenth century in all lands among the heathen.

The period of the present day in the Christian world is marked by a movement called by some the rationalistic, which seeks to conduct a searching examination into traditions and assumptions, with the aid of the recent archæological and other knowledge along scientific lines. There is in no sense what was at one time within recent years feared by many—a conflict between science and religion. For the Church regards science as the handmaiden of all branches of knowledge, and calmly and confidently awaits the outcome of the most rigid investigations, ready to receive her contributions to the eternal truth.

Roman Pontiffs.

Peter	d. 67?
Linus	67-79?
Anacletus	79-90?
Clement I	90-99?
Evaristus	99-107?
Alexander	107-116?
Xystus (Sixtus)	116-125?
Telesphorus	126-136?
Hyginus	136-140?
Pius I	140 154?
Anicetus	154-165
Soter	165-174
Eleutherus	174-189
Victor I	189-198
Zephyrinus	198-217
Callistus	217-222
Urbanus	222-230
Pontianus	230-235
Anterus	235-236
Fabianus	236-250
Cornelius	251-253
Lucius I	253-254
Stephen I	254-257
Xystus II	257-258
Dionysius	259-268
Felix I	269-274
Eutychianus	275-283
Caius	283-296
Marcellinus	296-304
Marcellus	308-309
Eusebius	309 (310)
Miltiades	311-314
Sylvester I	314-335
Marcus	-336
Julius I	337-352
Liberius	352-366
Damasus I	366-384
Siricius	384-399
Anastasius I	399-401
Innocent I	401-417
Zosimus	417-418
Boniface I	418-422
Celestine I	422 432
Xystus III	432-440
Leo I	440-461
Hilarius	461-468
Simplicius	468-483
Felix II	483-492
Gelasius I	492-496
Anastasius II	496-498
Symmachus	498-514
Hormisdas	514-523
John I	523-526
Felix III	526-530
Boniface II	530-532
John II	533-535
Agapetus I	535-536
Silverius	536-537
Vigilius	537-555
Pelagius I	556-561
John III	561-574
Benedict I	575-579
Pelagius II	579-590
Gregory I	590-604
Sabinianus	604-606
Boniface III	-607
Boniface IV	608-615
Deusdedit	615-618
Boniface V	619-625
Honorius I	625-638
Severinus	-640
John IV	640-642
Theodore I	642-649
Martin I	649-653
Eugenius I	654-657
Vitalian	657-672
Adeodatus	672-676
Donus	676-678
Agatho	678-681
Leo II	682-683
Benedict II	684-685
John V	685-686
Conon	686-687
Sergius	687-701
John VI	701-705
John VII	705-707
Sisinnius	-708
Constantine	708-715
Gregory II	715-731
Gregory III	731-741
Zacharias	741-752
Stephen II	752-757
Paul I	757-767
Stephen III	768-772
Adrian I	772-795
Leo III	795-816
Stephen IV	816-817
Paschal I	817-824
Eugenius II	824-827
Valentine	-827
Gregory IV	827-844
Sergius II	844-847
Leo IV	847-855
Benedict III	855-858
Nicholas I	858-867
Adrian II	867-872
John VIII	872-882
Marinus I	882-884
Adrian III	884-885
Stephen V	885-891
Formosus	891-896
Boniface VI	-896
Stephen VI	896-897
Romanus	-897
Theodore II	-897
John IX	898-900
Benedict IV	900-903
Leo V	-903
Christopher	903-904
Sergius III	904-911
Anastasius III	911-913
Lando	913-914
John X	914-928
Leo VI	-928
Stephen VII	928-931
John XI	931-935
Leo VII	936-939
Stephen VIII	939-942
Marinus II	942-946
Agapetus II	946-955
John XII	955-963
Leo VIII	963-965
Benedict V	-964
John XIII	965-972
Benedict VI	973-974
Benedict VII	974-983
John XIV	983-984
Boniface VII	984-985
John XV	985-996
Gregory V	996-999
Sylvester II	999-1003
John XVII	-1003
John XVIII	1003-1009
Sergius IV	1009-1012
Benedict VIII	1012-1024
John XIX	1024-1032
Benedict IX	1032-1044
Gregory VI	1045-1046
Clement II	1046-1047
Damasus II	-1048
Leo IX	1049-1054
Victor II	1055-1057
Stephen IX	1057-1058
Benedict X	-1058
Nicholas II	1058-1061
Alexander II	1061-1073
Gregory VII	1073-1085
Victor III	-1087
Urban II	1088-1099
Paschal II	1099-1118
Gelasius II	1118-1119
Calixtus II	1119-1124
Honorius II	1124-1130
Innocent II	1130-1143
Celestine II	1143-1144
Lucius II	1144-1145
Eugenius III	1145-1153
Anastasius IV	1153-1154
Adrian IV	1154-1159
Alexander III	1159-1181
Lucius III	1181-1185
Urban III	1185-1187
Gregory VIII	-1187
Clement III	1187-1191
Celestine III	1191-1198
Innocent III	1198-1216
Honorius III	1216-1227
Gregory IX	1227-1241
Celestine IV	-1241
Innocent IV	1243-1254
Alexander IV	1254-1261
Urban IV	1261-1264
Clement IV	1265-1268
Gregory X	1271-1276
Innocent V	-1276
Adrian V	-1276
John XXI	1276-1277
Nicholas III	1277-1280
Martin IV	1281-1285
Honorius IV	1285-1287
Nicholas IV	1288-1292
Celestine V	-1294
Boniface VIII	1294-1303
Benedict XI	1303-1304
Clement V	1305-1314
John XXII	1316-1334
Benedict XII	1334-1342
Clement VI	1342-1352
Innocent VI	1352-1362
Urban V	1362-1370
Gregory XI	1370-1378
Urban VI	1378-1389
Boniface IX	1389-1404
Innocent VII	1404-1406
Gregory XII	1406-1409
Alexander V	1409-1410
John XXIII	1410-1415
Martin V	1417-1431
Eugenius IV	1431-1447
Nicholas V	1447-1455
Calixtus III	1455-1458
Pius II	1458-1464
Paul II	1464-1471
Sixtus IV	1471-1484
Innocent VIII	1484-1492
Alexander VI	1492-1503
Pius III	-1503
Julius II	1503-1513
Leo X	1513-1521
Adrian VI	1522-1523
Clement VII	1523-1534
Paul III	1534-1549
Julius III	1550-1555
Marcellus II	-1555
Paul IV	1555-1559
Pius IV	1559-1565
Pius V	1566-1572
Gregory XIII	1572-1585
Sixtus V	1585-1590
Urban VII	-1590
Gregory XIV	1590-1591
Innocent IX	-1591
Clement VIII	1592-1605
Leo XI	-1605
Paul V	1605-1621
Gregory XV	1621-1623
Urban VIII	1623-1644
Innocent X	1644 1655
Alexander VII	1655-1667
Clement IX	1667-1669
Clement X	1670-1676
Innocent XI	1676-1689
Alexander VIII	1689-1691
Innocent XII	1691-1700
Clement XI	1700-1721
Innocent XIII	1721-1724
Benedict XIII	1724-1730
Clement XII	1730-1740
Benedict XIV	1740-1758
Clement XIII	1758-1769
Clement XIV	1769-1774
Pius VI	1775-1799
Pius VII	1800-1823
Leo XII	1823-1829
Pius VIII	1829-1830
Gregory XVI	1831-1846
Pius IX	1846-1878
Leo XIII	1878-1903
Pius X	1903-

The title of pope, formerly given to all bishops, was first adopted by Hyginus in 139. At the time of the councils of Nicæa (325) and Antioch (341) the Bishop of Rome was regarded as metropolitan, and before the end of the seventh century the supremacy of Rome was acknowledged throughout the West. The Church of Rome meanwhile continued to increase its temporal dominion, the power of the papacy reaching its zenith in the time of Innocent III. (1198-1216). During the "Babylonian Captivity" (1309-1376) the popes lived at Avignon, and with England and Germany alienated, their power began to wane. The Great Schism still further discredited the papacy. The temporal power of the popes came to an end in 1870 with the occupation of Rome by Victor Emmanuel.

A pope is ordinarily elected by *scrutiny*. Each cardinal in conclave writes on a ticket both his own name and that of another cardinal. These tickets, folded and sealed, are placed in a chalice, from which they are taken by scrutators nominated *ad hoc* from the electing body. A cardinal who receives two thirds of the entire votes is declared elected.

The Roman Pontiff has for advisors and coadjutors the Sacred College of Cardinals, consisting, when complete, of 70 members, viz.: 6 cardinal bishops, 50 cardinal priests, and 14 cardinal deacons. It rarely, however, comprises the full number. In April, 1909, it consisted of 6 cardinal bishops, 42 cardinal priests, and 5 cardinal deacons. Though primarily drawn from the vicinity of Rome, the cardinals are now Princes of the Church at large, and are selected from every Christian nation. The cardinals constitute the papal senate or council and the various Sacred Congregations; they govern the Church while the papal see is vacant, and elect the new pope. They received the distinction of the red hat under Innocent IV., and the title of Eminence from Urban VIII. in 1630.

ADVENTISTS. Those who believe that Christ will, on his second coming, establish a personal reign upon the earth. The Adventists in the United States were founded by William Miller (1782-1849), who began lecturing on the millennium in 1831, and fixed the date at various times from 1843 to 1861. His followers were known as Millerites. The largest group of Adventists are the Seventh-Day Adventists, who observe the seventh day as Sabbath and believe in the fulfillment of Bible prophecies; the Advent Christians believe, as do the Seventh-Day Adventists, in the annihilation of the wicked; the Evangelical Adventists reject the annihilation doctrine. Other smaller groups are the Church of God, Life and Advent Union, and Churches of God in Jesus Christ.

ALBIGENSES. In the twelfth and thirteenth centuries several heretical sects of anti-sacerdotal Christians existed in the south of France. They were very numerous at Albi, in Languedoc, where they were most vigorously persecuted in a series of wars of extermination, the bloodiest in history. Pope Innocent III., in 1208, directed against them a crusade led by Arnold of Citeaux and Simon de Montfort. By the end of the thirteenth century they had lost their identity as sects.

ANTIBURGHERS. A division of the Scotch Secession church (1747), who refused to regard the burgesses' oath as compatible with their religion. Reunited with the Burghers in 1820.

BAPTISTS. A Christian denomination which holds that baptism must be preceded by a personal confession of faith, and, hence, rejects the principle of infant baptism. Baptists are generally, but not always, believers in baptism by immersion. While in some form this belief is of great age, as a separate denomination, the Baptists date from the time of the Reformation; their opponents have given them the name of Anabaptists. Roger Williams (1600-1684), originally a minister of the Church of England, founded (1639) the first Baptist church in America. Baptists are sometimes called Calvinist Baptists; Freewill Baptists practise open communionism; German Baptists are popularly known as Dunkers; Old-School, Anti-Mission or Hard-Shell Baptists are extreme Calvinists; Seventh-Day Baptists keep the seventh instead of the first day as Sabbath; Disciples of Christ, Christians, or Campbellites; Six-Principle Baptists; and Christians or the Christian Connection are other divisions. Those who hold that baptism by immersion is necessary for communion are called close-communionists as opposed to the open-communionists.

BROTHERHOOD OF ST. ANDREW. A men's society within the Protestant Episcopal Church whose members are united for the purpose of spreading the kingdom of Christ, among young men especially. It was founded in Chicago in 1883, and in 1909 numbers 15,000 members, or 1,300 active chapters, in the United States, while Canada has 400 chapters of 3,800 members. It is a world-wide movement, with societies wherever its missionaries have been established in many remote places.

CHRISTIAN ENDEAVOR, YOUNG PEOPLE'S SOCIETY OF. A religious society organized in Williston Church, Portland, Me., by Rev. Francis E. Clark, D.D., LL.D., in 1881. Dr. Clark has been continuously associated with the movement since its inception. Each society is a part of some local church, and exists to make the young people loyal and efficient members of the churches of all of the great evangelical denominations. There are (1909) 69,256 societies, numbering 3,462,800 members, chiefly in the United States and Canada, but also extending to other and to missionary countries.

CHRISTIAN SCIENCE. A religious system formulated by Mrs. Mary Baker G. Eddy (1822-), who began to teach its principles at Lynn, Mass., in 1867; founded the First Church of Christ Scientist in Boston, Mass., 1879, which was enlarged to accommodate 8,000 people and rededicated in June, 1906; ordained pastor (1881); founded the Massachusetts Metaphysical College (chartered 1881). The principles of the system are elaborated in her works: *Science and Health, with Key to the Scriptures* (1875), which is the Christian Science text-book; *Unity of Good, Retrospection and Introspection*, and *Manual of the Mother Church*. The fundamental belief consists in acknowledgment and adoration of one Supreme God; in the inspiration of the Scriptures; in the divinity of Christ; in the supremacy of God as a spirit; in prayer without ceasing; in all the essentials of Christian belief; and the claim that the chief work of Christian Science is to destroy all evil, which will eventually pass away, and to reform mankind. Christian Science is regarded by its members as the triumph of Truth over all error, sin, sickness, and death.

CONGREGATIONALISTS. A denomination of Christians who hold that church government is to be vested in the associated brotherhood of each local church as an independent body, and acknowledge the evangelical or orthodox doctrines, infant baptism, and baptism by sprinkling. The Congregationalists are identical with the Independents of England. The origin of the body dates to the reign of Elizabeth, and its principles found an ardent advocate in Robert Browne in 1580. Congregationalism exerted a peculiar influence upon the development of the New England colonies, which were founded by members of this church.

DISCIPLES OF CHRIST or **CHRISTIANS.** A religious body working towards a return in faith and life to the Christianity of the New Testament. It is distinctively American in its origin, and it was evolved by teachers among religious denominations simultaneously pleading for the Bible alone, without additions of creed or formulas, and for the union of all Christians upon the basis of the Apostles' teaching. It is steadily increasing in numbers and importance.

DUTCH REFORMED CHURCH. This body arose out of a union of the Dutch churches in America, begun in 1770 and completed in 1812. Elders and deacons, chosen for two years, form a controlling consistory in which the elders work with the pastor, while the deacons control the alms. The Great Consistory is composed of former elders and deacons, and its office is advisory. In theological belief the church is Calvinistic; in worship the service is liturgical. The True Reformed Dutch Church was constituted in 1822 by secession from the Dutch Reformed Church in America.

EPISCOPAL CHURCH, PROTESTANT. The Church of England as transplanted in the United States follows the doctrines of apostolic creeds and principles of the primitive church. From 1607 until the War of Independence the Episcopal clergy in America were under the control of the Bishop of London. Rev. Samuel Seabury (1729-1796) was consecrated in Scotland the Bishop of Connecticut and was the first Protestant Episcopal bishop in America (1784). The General Convention is the national association of all the Protestant Episcopal churches in America and meets triennially.

EPWORTH LEAGUE. A society in connection with the Methodist Episcopal Church, organized at Cleveland, Ohio, in 1889, and named after the birthplace of John Wesley. Its object is to bind the young people closely to the church. It is probably the largest denominational society of young people in the world. The League of the Methodist Episcopal Church, South, was organized early in 1891.

FRIENDS or **QUAKERS.** A society of Christians which originated in England in the middle of the seventeenth century through the teachings of George Fox (1624-1691). They rely on the immediate teaching and guidance of the Holy Spirit; have no paid ministry; reject the outward observance of such church rites as baptism and the Lord's Supper, which they believe is partaken of spiritually; have no liturgy, and often conduct their meetings in silence. The well-known peculiarities of speech and dress are rapidly disappearing, though their hatred of war and objection to oath-taking are as strong as ever. In 1827, by a division in the Society of Friends, an order was founded by Elias Hicks (1748-1830) and known

as the Hicksites. These observe the usages of the Friends, but in doctrinal points more nearly approach the Unitarians.

GERMAN REFORMED CHURCH. A body erected among the German colonies in America. Its first synod was formed in 1747. Church government is Presbyterian in form; theology is moderately Calvinistic; and the service is optionally liturgical.

GREEK CHURCH. A body which follows the foundation of Christianity to the end of the seventh general council of the church in 787, known as the second Nicene Council. There the members refused to recognize the authority of Rome, and separated in 1054. Its rise was contemporaneous with and dependent upon the eminence which the Byzantine empire attained. Its title is "the Holy Orthodox Catholic and Apostolic Oriental Church," and comprises the church in the Ottoman empire, governed from Constantinople; the church in Greece; and the Russo-Greek Church. It is known also as the Eastern Church. The church is governed by the patriarchs of Constantinople, Alexandria, Antioch, and Jerusalem, and by the Russian Holy Governing Synod.

LUTHERANS. The Lutheran Church is the Protestant Church of Germany as established by Martin Luther (1483-1546) in the sixteenth century. Luther called it the Evangelical Church, and the term Lutheran was originally one of reproach. The nine dogmas of the church are contained in the Apostle's Creed, Nicene Creed, Athanasian Creed, Augsburg Confession (1530), Apology for the Augsburg Confession (1530), the Schmalkald Articles (1537), Catechisms of Luther (1529), and the formula of Concord (1577).

LUTHER LEAGUE OF AMERICA. A Lutheran organization of 100,000 members united for the promotion of activity in and loyalty towards the church. The first national convention was held at Pittsburg, Pa., in 1895. The first local organization occurred at New York City in 1888.

METHODISTS. The most important divisions are the Wesleyans of England and the Methodist Episcopal Church of the United States. They are evangelical and Arminian; have, generally, no liturgy; each church is organized into classes under class-leaders; churches are sometimes grouped in circuits under a district superintendent; the American churches are controlled by itinerant bishops. The denomination was founded by John Wesley (1703-1791), and the name Methodist was first given to Wesley and his associates by fellow students at Oxford.

MORAVIANS. This Christian denomination, known also as the United Brethren, claims its descent from John Huss (1369-1415). They suffered much persecution and expulsion in early times, but are now established in the three home provinces of Great Britain, Germany, and America. Each of these are governed by a synod; and a general synod of the three meets every ten years at Herrnhut, Saxony. They are especially noted for their zealous missionary work.

MORMONS, THE, or CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS. A religious sect organized at Fayette, N. Y., in 1830, by Joseph Smith, who maintained he had received a divine revelation for the upbuilding of the Kingdom of God, and that an angel had delivered to him an ancient record engraved on plates of gold, which he translated and published as the Book of Mormon. This volume is regarded as equal in authority with the Jewish and Christian Scriptures but not superseding or supplanting them. A temple was built at Kirtland, O., in 1831, and other branches were established, but owing to opposition a general westward movement took place in 1838. Most of the people located in Illinois, where in 1839 they began the erection of the temple at Nauvoo. Increasing opposition culminated in the assassination of Joseph and Hyrum Smith by a mob in 1844. Brigham Young then became the head of the church and in 1846 led the memorable westward exodus across the plains. The pioneers reached the valley of Great Salt Lake in 1847, and established what has now become a prosperous commonwealth. The practice of plural marriage, which led to much persecution, was never general and has been formally discontinued. The total membership now exceeds 300,000.

PRESBYTERIANS. A body of Christians governed by elders or presbyteries. Among the leading divisions of this body are: (1) the Established Church of Scotland, founded in 1560 by John Knox (1505-1572); (2) the Presbyterian Church in the United States, founded in 1705, split into the New School and the Old School on theology and antislavery (1838), reunited (1870); (3) the Presbyterian Church of the United States (Southern), which separated from the Old School in 1861 when the Confederacy was established; (4) the Free Church of Scotland, which, in 1843, went out from the Established Church of Scotland; in 1900 the major part of its members united with the United Presbyterian Church to form the United Free Church of Scotland. The Covenanters, in 1638 and 1643, bound themselves by a solemn covenant to resist the prelacy and papacy and to support the Presbyterian Church in doctrine and polity; the name was afterwards applied to the Cameronians or Reformed Presbyterians who followed Richard Cameron (died 1680) in the refusal to accept the indulgence granted to Presbyterians by Charles II.; in 1876 the greater number of them were merged in the Free Church.

REFORMED EPISCOPAL CHURCH. A body organized in 1873 by former clergy and members of the Protestant Episcopal Church. Episcopal government is retained as a matter of policy without belief in its divine imposition; the Book of Common Prayer in revised form is in use; the doctrines of regeneration by baptism, real presence, oblation, and apostolic succession are rejected.

SAINT VINCENT DE PAUL. The greatest Roman Catholic organization was founded in 1835, in Paris, France, where the head office is now located; it has branches in every part of the world. Its principal mission is the care of the poor in their homes, to keep the family life intact; it conducts many other charities, as boys' clubs, hospital and prison visiting committees, summer homes, and distributes books and papers.

SWEDENBORGIANS. Followers of the teachings and religious doctrines of Emanuel Swedenborg (1688-1772), founder of the New Church. The church was organized in London in 1778 under the name of the "Society of the New Church signified by the New Jerusalem." The doctrine of correspondencies between material things and spiritual principles of good and evil is the foundation of Swedenborg's system. He never contemplated the erection of a separate church, but hoped for the working of the dispensation, which he foresaw dating from 1757, a year of regeneration, regardless of creed.

UNITARIANS. A religious body which affirms the unipersonality of the Deity, and denies the doctrine of the Trinity. The movement in the United States developed in New England under the teaching of Dr. William Ellery Channing (1780-1842). The ranks were joined by many Congregationalist churches, and the American Unitarian Association was formed in 1825.

UNIVERSALISTS. A body of Christians who believe that all mankind will eventually be redeemed from sin and suffering and be united in holiness with God. Outside of this fundamental belief there is wide diversity of views among the members. John Murray (1741-1815), an American Universalist clergyman, is known as the "father of American Universalism"; and Hosea Ballou (1771-1852), pastor of the Second Universalist Society in Boston, Mass. (1817-1852), was one of the founders of American Universalism.

WOMEN'S CHRISTIAN TEMPERANCE UNION. A great national movement organized in Cleveland, Ohio, in 1874. There are 40 working departments in the United States, within which are 10,000 local unions having a total membership of half a million. The society has greatly influenced legislation, making for purity and temperance. The World's W. C. T. U., organized in 1883 by Frances E. Willard (1839-1898), has auxiliaries in 50 countries. The emblem of the society is a white ribbon.

YOUNG MEN'S CHRISTIAN ASSOCIATION. This religious organization originated in England, where a society was founded in 1844 by Sir George Williams (1821-1905). As originally planned, its object was the holding of religious services in business houses in London; since then great additions of a cultural and social value have been made. In America the first institutions were founded in 1851; the first international convention was held at Buffalo in 1854. Of the 7,771 associations in the world, 1,932 are in North America. The American membership is 437,178; buildings owned by the associations 589, valued at $34,132,245.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION. A society for women planned similarly to the Y. M. C. A. Organized in London in 1855; in the United States in 1866; and in colleges in 1873. The World's Association was formed in 1894. The membership in the local associations subordinate to the American Committee (formed in 1886) is 100,252.

SCHOOLS OF PHILOSOPHY.

ORIENTAL SCHOOL.—The earliest recorded ventures in speculative thought are to be found in the Vedas, which set forth the Brahministic system of philosophy in the Hindu sacred literature (2000-1500 B. C.). When, in 1400 B. C., Vyasa founded the Vedanta or Uttaramimansa School of Hindu philosophy, the Mimansa School had long been established. The logical school, surprisingly similar to the later teachings of Aristotle, followed; the Kanade or Vaisheshika School dealt with the theory of atoms; the Kapila or Sankhya School was atheistic, and repudiated the idea that matter may proceed from or originate in spirit; and the Patanjali (about 140 B. C.) or Yoga system, founded on theism.

Other schools of philosophy formulated by orientals are Buddhism, Confucianism, and Zoroastrianism (which see).

EARLY GREEK SCHOOLS.—The germ of European philosophy is found in the teaching of **Thales**, born in Miletus in Asia Minor, about 640 B. C. With his followers he is classed in the Milesian school. He was philosopher, astronomer, and geometer; one of the seven wise men of Greece, and the earliest of the Ionian natural philosophers. He is reputed to have foretold an eclipse of the sun May 28, 585 B. C. Water was the principle of all things in his system.

The ELEATIC SCHOOL was founded by **Xenophanes** (570-480 B. C.). Born in Colophon, Asia Minor; settled at Elea in Greece (536 B. C.). He was the first Greek theologian and was more of a religious reformer than a philosopher, and was fanatically opposed to the polytheism of Greece.

Zeno of the Eleatics (fifth century B. C.) lived in Athens during the early days of Socrates; especially noted for his arguments setting forth the inconceivability of motion, the inventor of dialectics.

The PYTHAGOREAN SCHOOL was founded by **Pythagoras** (582-500 B. C.). Born in Samos, Greece; went to Crotona, in Magna Graecia, in 529, and there founded his philosophic school, which was a secret organization, into the mysteries of which candidates were formally initiated. Pythagoras traveled in Egypt and is credited with introducing the 47th problem of Euclid. He taught transmigration of souls, did not teach the existence of God, and based everything upon number.

Anaxagoras (500-428 B. C.). Born at Clazomenae in Ionia; taught at Athens and had as pupils, Pericles, Thucydides, and Euripides. He was the first of the philosophers to teach intelligence or reason as a metaphysical principle. Banished on a charge of impiety.

Heraclitus (535-475 B. C.). Born at Ephesus; was known as "the obscure" and as "the weeping philosopher." He taught that all knowledge is acquired through the senses, and foreshadowed the doctrine of predestination.

Democritus (460-357 B. C.). "The Abderite" and "the laughing philosopher," was born at Abdera. Traveled extensively; taught the atomic system, and that reflection makes complete knowledge. Said to have destroyed his sight that he might pursue his studies without distraction.

Empedocles (490-430 B. C.). Born at Agrigentum, Sicily; followed the teachings of Pythagoras and Parmenides. Said to have thrown himself into the crater of Etna in order to impress his followers with his divine nature. Earth, air, fire, and water were in his system the four elements.

The SOPHISTS attained great power in ancient Greece by their acceptable doctrines. Right was a matter of convention, and was that conduct which conferred the greatest good upon the greatest number; whatever society regarded as right was so. Conscience was a matter of education. Good conduct was duty and interest combined. In their day no clear distinction was made between logic and grammar on the one hand and skill in reasoning and in disputation on the other. They soon attached great importance to quibbles, and their doctrines and methods were treated with contempt—hence our word sophistry. **Protagoras** of Abdera (481-411 B. C.) was the earliest of the Sophists.

The SOCRATIC SCHOOL was founded by **Socrates** (470-399 B. C.), the noblest exponent of the ethical life of the Greeks. His method of confounding the Sophists in argument is known as "the Socratic method." His teachings are set forth in the "Dialogues" of Plato and the "Memorabilia" of Xenophon. Plato, Xenophon, and Alcibiades were his most celebrated pupils. Accused of impiety and of corrupting the youth, he was condemned to suicide, and drank hemlock in prison in the presence of his disciples.

The ACADEMIC SCHOOL was founded by **Plato** (429 or 427-347 B. C.). He was a pupil of Socrates and the teacher of Aristotle. His philosophy is still the greatest exposition of idealism, and though based on the teachings of Socrates, goes far beyond them in speculation. He taught in the quiet of a grove or garden, "Akademia," near Athens, and Plato's school came to be called the Academic school and his followers Academicians.

The CYNICS was a Greek school founded by **Antisthenes** (444-371? B. C.), who taught in the Cynosarges, a gymnasium near Athens, hence the name Cynics. They taught virtue, self-control, and contempt of riches, art, science, and amusements. **Diogenes** of Sinope (412-323 B. C.) was the most famous of the Cynics, and noted for his eccentricities.

The CYRENAIC SCHOOL was founded by **Aristippus** (lived about 380 B. C.). Born in Cyrene, Africa. He was a pupil of Socrates, whose principles and methods were largely discarded by this founder of a hedonistic school.

The MEGARIC SCHOOL was founded by **Euclid** of Megara, not the Euclid of mathematical fame but a pupil of Socrates, born in the middle of the fifth century B. C.

The PERIPATETIC SCHOOL was founded by **Aristotle**, the Stagyrite, the most famous and influential of Greek philosophers (384-322 B. C.). He taught in the walks of the Lyceum at Athens, hence the name, Peripatetic. Greek philosophy culminated in Aristotle, and until the discovery of modern science and scientific methods his books were text-books in the colleges, and his opinions were authoritative on all matters philosophical.

The EPICUREAN SCHOOL was founded by **Epicurus** (342-270 B. C.). Born in Samos. His school was opened at Athens in 306. The germ of his system was that pleasure is the only end of rational action, and that freedom is the ultimate pleasure.

The STOICS were founded by **Zeno** (340-265 B. C.), who taught from the Painted Porch in the Agora at Athens. The sternness and severity of the doctrines, and the effects of them upon some of the noblest men of antiquity have become proverbial. Indifference to pain is the most marked of the effects of the system.

The SKEPTICS were founded by **Pyrrho** (360-170 B. C.). Born in Elis. While the founder professed to doubt everything, the name Skeptic means a looking through or into all things.

The ALEXANDRIAN SCHOOLS.—The decadence of philosophy at Athens after the brilliant period of Aristotle sent the philosophers elsewhere. Rome displayed slight appreciation for all systems except the Stoic, which appealed to them. In Alexandria, rapidly becoming a center of science and learning, a fertile soil was found, and there arose the strange mixture of philosophical teaching, part mystic, part skeptic, which is known as neo-Platonism. The earliest of the Alexandrian philosophers was Philo Judaeus or Philo the Jew (about 20 B. C.-40? A. D.), whose great object was to harmonize the philosophy of religion and whose work resulted in a sort of pantheism permeated with Oriental doctrines. Ammonius Saccas (170-243?) was the founder of the neo-Platonic school and the teacher of Plotinus, Longinus, and Origen. Plotinus (205-270) is regarded by many as the greatest of the neo-Platonists, though he is equally a neo-Aristotelian and a neo-philosopher, as he took into account the teachings of all of his great predecessors. Apollonius Tyanaeus (4? B. C.-97? A. D.) was a Pythagorean and a reputed worker of miracles. Porphyry (233-305) taught philosophy at Rome and wrote vigorously against the Christians. Hypatia (end of fourth and beginning of fifth centuries) was a neo-Platonic philosopher, famed for her beauty and for her tragic death described by Kingsley in his novel. She was the daughter of Theon, mathematician and astronomer, whose reputation she eclipsed. The Gnostics arose within the Christian Church in the first century, flourished in the second century, and disappeared towards the close of the sixth. They relied for salvation more upon knowledge than upon faith, did not interpret the Scriptures literally, and drew upon the older philosophies for their guidance.

ARABIAN PHILOSOPHY.—The Arabians excelled in science, but the repressing influence of the teachings of the Koran prevented an equal success in metaphysics. Averroes of Cordova (1126 or 1120-1198) was probably the most noted of the Arabians, famed as a philosopher, physician, and commentator of Aristotle. Many of his works were translated into Hebrew and Latin. In his doctrine three main elements meet: the philosophy of Aristotle, neo-Platonism, and the influences of the religion of Islam.

Al Gazel or **Gazali** (1058 or 1059-1111) the skeptic of the Arabians, taught at Bagdad as a professor of theology.

SCHOLASTICISM.—The Scholastics or Schoolmen were Christian Aristotelians who taught in the schools of Europe from the eleventh century until the Reformation. Their work was characterized by the authority of the Church, the influence of Aristotle, and the Arabian commentators, and by a stiff, formal, and pedantic mode of discussion. The greatest of the Schoolmen were Abelard (1079-1142), Aquinas (1225 or 1227-1274), Duns Scotus (1265?-1308?), the founder of Scotism, and his pupil William of Occam (1270-1347), the reviver of nominalism.

Giordano Bruno (about 1548-1600). An Italian philosopher; taught that there is an all-life (God) animating the whole universe, "which is thus one living being with life in all its members." This pantheistic doctrine led to a poetic personification of nature, and a humanistic view of the universe supplanting the factor of religious experience so prominent in medieval thought. Spinoza, Descartes, Schelling, and other later thinkers were influenced by Bruno.

BACONIAN PHILOSOPHY.—Inductive Philosophy was founded by Francis (Lord) Bacon, whose biography appears elsewhere. He was the first to formulate the method and to insist upon careful verification by observation and experiment of all facts that are employed in generalizations. It is as a methodologist who taught men of science the need and value of experiment that Bacon appears in the highest light.

MODERN PHILOSOPHERS.—Cartesian Philosophy is named after René Descartes (1596-1650), a French philosopher, who is famous for the oft-repeated formula, "*Cogito, ergo sum*" (I think, therefore I am). His method is based on mathematics, in which science Descartes was eminent. He describes four methods of procedure in philosophical investigation: (1) Do not accept anything until it is proved to be true. (2) All questions are to be subjected to the most careful analysis. (3) Proceed from simpler to more difficult matters. (4) See that no factors are overlooked or forgotten in the investigation in hand.

Thomas Hobbes (1588-1679), a celebrated English philosopher, who is regarded as the father of materialism. He was a pronounced nominalist, an antagonist of scholasticism, suggested the association of ideas, and was an advance worker in the field of modern rationalism. While thoroughly devout, he insisted upon the separation of religion or theology from philosophy.

John Locke (1632-1704), the founder of the modern English and French schools of "sensation" philosophy and psychology. His work was formulated in his *Essay on the Human Understanding*. He contributed greatly to the advance of philosophy by directing men's minds to the study of the knowable, and to giving up useless speculation on the unknowable.

Baruch or Benedict Spinoza (1632-1677), a Dutch philosopher of Jewish descent, the greatest expounder of the modern system of pantheism. The starting point of his philosophy is the Cartesian, of which he was a profound student. He saw God in all things, and conceived of no existence apart from God.

Gottfried Wilhelm von Leibnitz (1646-1716), a noted German philosopher and mathematician, was greatly influenced by the teachings of Descartes but differed from him in method and in some fundamental tenets. In his *Monadology* he presented a revision of Descartes's theory of substance,—teaching that the universe consists of a system of monads or units rising from the lowest to the highest grades of perfection in a "preëstablished harmony."

Christian von Wolff (1679-1754), a disciple of Leibnitz and father of the philosophy that prevailed in Germany before the time of Kant, the term Dogmatism being specifically applied to his system. He claimed for philosophy the entire field of knowledge, and emphasized method in philosophical speculation.

George Berkeley (1685-1753), an Irish prelate, famous for his theory of vision, which is the foundation of the psycho-physiological study of that subject. His idealism startled the philosophic minds of Europe. He started with Locke's system and developed it.

David Hume (1711-1776), the Scottish philosopher and historian, noted for his subtlety of metaphysical reasonings and for original work in political economy. His writings did away with the contemptuous criticism of the skeptic, who now demanded an answer instead of a laugh.

Etienne Bonnot de Condillac (1715-1780), a famous French philosopher, one of the foremost advocates of sensualism, or the founder of the French Sensational School. He took up Locke's system and carried it to the extent of saying that all knowledge is pure sensation.

Immanuel Kant (1724-1804), founder of the critical philosophy. The rock of the Kantian metaphysics is his *Criticism of the Pure Reason* or the *Critique of Pure Reason*, and its influence spread all over Europe. Kant has the reputation of being one of the deepest thinkers of any age.

Friedrich Heinrich Jacobi (1743-1819), a German philosopher, who was the chief exponent of "faith-philosophy" (Glaubensphilosophie). He opposed the witness of faith to the pantheistic view of the world advocated by Spinoza, and to the phenomenalistic view maintained by Kant.

Johannn Gottlieb Fichte (1762-1814) was the greatest of Kant's pupils, though repudiated by the master. He has been called the soldier of philosophy. His system went far beyond that of Kant, and transformed all knowledge into pure idealism.

Friedrich Wilhelm Joseph Schelling (1775-1854), a noted German philosopher; was at first only an expounder of the philosophy of Fichte, but, later, framed his theory that the true sources of knowledge are not experience or reflection, but intellectual intuition. He was one of the most prolific of the metaphysical writers of Europe.

George Wilhelm Friedrich Hegel (1770-1831), the founder of Hegelianism, a system which, during the second quarter of the nineteenth century, was the leading system of metaphysical thought in Germany. He held that the source of all knowledge is the union of assertion and negation and the harmonizing of every proposition with its negation. Hegelianism is radically opposed to natural science and to the Newtonian philosophy. Its influence has produced the socialism of to-day.

Arthur Schopenhauer (1788-1860), a German philosopher; opposed the teachings of Fichte, Schelling, and Hegel, maintaining that the will, not thought or reason, is the absolute, and from this developed his theories of pessimism and voluntarism.

Ralph Waldo Emerson (1803-1882), an American philosopher who called himself a Transcendentalist. He left no system and developed no methods, but embodied his thoughts in disconnected essays. His reputation is probably greater abroad than at home. He was an optimist, and, above all, an individualist.

Isidore Auguste Marie Francois Xavier Comte (1798-1857), a celebrated French philosopher, the founder of positivism, which deals with the real, the known, the tangible or sensible in nature. He regarded all of the sciences as but branches of Positive Philosophy, and proposed to unite, coördinate, and correlate them under that head. He arranges his sciences in this order: astronomy, physics, chemistry, organic chemistry, biology, and sociology, in the order of the clearness of possible predictions; and mathematics was regarded as the basis of all scientific work.

John Stuart Mill (1806-1873), an English economist and philosopher, and the most prominent of the English school of utilitarians,—which also included his father, James Mills (1773-1836), and Jeremy Bentham (1748-1832),—advocated the ethical theory called by him utilitarianism, which considers adaptation to an end the test of moral worth,—the end being interpreted as the general happiness.

Herbert Spencer (1820-1903), an English philosopher of great distinction. His early training developed a strong liking for mechanics, and in 1837 he became chief engineer of the London and Birmingham railway, continuing in this work for 10 years. From 1848 to 1852 he was sub-editor of *The Economist*, and wrote *Social Statics*. In the eight years following he published *Psychology*, which he expanded into *Synthetic Philosophy*. He conceived a system of philosophy to include the general principles of all existing knowledge, and completed it. It consists of "First Principles," "Principles of Biology," "Principles of Psychology," "Principles of Sociology," and "Principles of Ethics." In the system he applies the idea of evolution to the universe, but especially to organic life and its forms as well as to political and social institutions. He conceived evolution as the history of events rather than the history of the causes that make change, by which conception he has rendered inestimable service to human knowledge. His other writings include three volumes of *Essays, Scientific, Political, and Speculative*, his *Autobiography*, and *Education*, a book widely used in training schools for teachers.

Karl Robert Eduard von Hartmann (1842-1906) founded a new school of philosophy which professes to be a synthesis of that of Hegel and that of Schopenhauer, reconciling the results obtained from both the philosophic and the scientific methods. His fame rests upon his work entitled *The Philosophy of the Unconscious*, in which he defines the unconscious as the "absolute principle, active in all things, the force which is operative in the inorganic, the organic, and the mental alike, yet not revealed in consciousness."

PROHIBITION.

In 1868 3,500,000 people of the United States lived within the territory in which the sale of liquor was prohibited. In 1900 there were 18,000,000 living under prohibition; in 1908 over 36,000,000.

In 1855 the states of Maine, New Hampshire, Vermont, Rhode Island, Connecticut, New York, Delaware, Michigan, Indiana, and Iowa forbade by act of legislature the manufacture and sale of intoxicating liquors as a beverage.

Of the 36,000,000 under prohibition 10,000,000 live under state prohibitorv laws and 26,000,000 under local option.

Maine is the mother of prohibition. The Maine law was passed largely throngh the efforts of Neal Dow. Enacted in 1851, repealed in 1856, re-enacted in 1858; and made a part of the constitution of the state in 1884. In 1906 when Governor Cobb made it the issue, the law was retained by a slight majority.

New Hampshire's prohibition statute of 1855 was repealed early in 1903, and local option was adopted. Six of its eleven cities and 183 of its 224 towns are "dry." License fee according to population not to exceed $1,200.

Vermont passed a prohibitory law in 1852 which it abandoned in 1903 for local option. Of the 246 towns, 216 are "dry," and three fourths of the people live under prohibition.

Massachusetts passed a prohibitory statute in 1852; but it now has a most excellent system whereby each town votes for or against the sale of liquor. Lynn with its 78,000, and Worcester with its 130,000, are among the two thirds part of the cities and towns which prohibit the sale of intoxicating liquors. License fee, not less than $1,000.

Rhode Island has been under local option since 1889. Sixteen towns have abolished the sale and 22 cities and towns retain it. License fee, $200-$1,000.

Connecticut passed a local option law as early as 1832. Of the 168 towns, 90 are "dry." License fee, $150-$450.

New York is most prominent among liquor-selling states. In the state there are over 30,000 retail liquor dealers who pay license fees amounting to over $19,000,000 a year. The Raines law provides for local option, and under it 602 towns in New York state have no saloons. License fee, $150-$1,200, according to population.

New Jersey has no local option. Under vigorous action saloons are being closed now on Sunday. License fee, $100-$300.

Delaware voted on the liquor question on November 5, 1907. As a result one half of the state, comprising the counties of Kent and Sussex, went "dry"; the other half, Wilmington and Newcastle county, kept the saloons. License fee, $200-$300.

Maryland is "dry" in 15 of its 23 counties. The legislation in this state is special. There is no uniform law. On this point Cardinal Gibbons, in an open letter, wrote: "I believe that the right of people to determine by the operation of local option laws whether saloons shall or shall not be closed in their respective communities is in harmony with the American principle of self-government." License fee, $18-$450.

Pennsylvania has only one "dry" county. The Brooks license law is not satisfactory to the anti-saloon people. A local option law was asked for but it was killed in committees. License fee, $75-$1,000.

Ohio shows 1,621 of the towns are "dry," and 60 per cent. of the municipalities are anti-saloon. In 1873, the woman's crusade at Hillsborough under "Mother" Thompson was really the birth of the Women's Christian Temperance Union. Among the notable events in the vigorous stand which Ohio has always taken against the sale of liquor are:—

1886. Dow tax law passed through the efforts of Governor Foraker.
1888. Beatty township local option law passed.
1893. Anti-Saloon League organized.
1902. Beal law passed, giving local option to cities and villages as a whole.
1904. Brannock law passed.
1906. Local option law for residential districts of cities passed.
1908. Rose bill passed extending local option to counties as a unit. It is expected that under this law at least 70 of the 88 counties of the state will prohibit the sale.

The Anti-Saloon League has proved an important political factor in Ohio. License fee, $1,000.

Indiana has 900 "dry" townships out of 1,016, and only 1,000 saloons in the remaining 116 "wet" towns. The Moore law forbids the saloon upon popular objection, and the "Blind Tiger" law has added great strength to the reformers, headed by Governor Hanly. Efforts are being made to increase the license fee to $1,000. License fee, $100-$250.

Illinois, for long a stronghold of the liquor party, is experiencing a prohibition wave. More than 3,000,000 people now live within "dry" districts. In Chicago there are as many saloons as in all of the 14 Southern states. Only a city and a village dramshop law obtained in Illinois until the passage of the local option law in 1907. The people in each township now have the right to vote upon the question of license within the township. Within a year 26 counties were added to the list of "dry" counties, making a total of 36. In cities the saloon has been prohibited in residential districts. There is now (1908) an area of ten square miles within the limits of the city of Chicago in which liquor is not sold. License fee, not less than $500.

Wisconsin, despite the large liquor interests in Milwaukee, passed a residence-district option bill in 1907. No county is entirely "dry," but of the 1,454 towns and cities 789 have prohibited the sale. This affects about one half of the territory of the state. License fee, $100-$200, or may be increased by voters to $200-$500.

Michigan has a county option law, and there are eleven "dry" counties out of the 85. There are 700 prohibition towns in which the law is strictly enforced. License fee, $500-$800.

Minnesota has a township local option law and an option for municipalities organized under a village charter. Mayor Robinson of St. Cloud was removed from office for failure to close saloons on Sunday. As a result St.

Paul, Minneapolis, and all other cities are rigid observers of Sunday closing. About 45 per cent. of the people live within prohibition limits. No liquor is sold in 123 of the 525 municipalities; 1,611 of the 1,800 organized townships are "dry" and the law is strictly enforced. License fee, $500-$1,000.

Iowa voted favorably on a constitutional prohibitory clause in 1883. The supreme court, upon a technicality, declared the election void. A prohibitory statute was then passed by the legislature. In 1894 the mulct law was passed to regulate the traffic in the "river towns." By this act an exemption from the general prohibition is granted to any locality which asks it by petition of 65 per cent. of the voters. Only 22 of the 99 counties grant license, and the sale is forbidden in 975 of the 1,112 towns and cities. License fee, $600.

Nebraska prohibits the sale in 10 of the 90 counties and in 450 out of the 1,000 cities and towns. License fee, $500-$1,000.

Since the elections of April 7, 1908, Nebraska has added more than 40 towns to the list of "dry" areas. At Lincoln the excise board adopted the most stringent regulations ever enforced in the United States.

Saloons must close at 7 p. m.

The number of licenses must not exceed one for each 2,000 of population.

Regulations regarding the arrangement of the premises and conduct of the business are severe.

Clubs may not sell liquor to members.

Druggists may sell alcohol only under a bond of $5,000.

The license fee is $1,500.

North Dakota was a prohibition territory by constitution when it was received into the Union. It has retained this feature as a state, and much of its extraordinary prosperity is attributed to prohibition.

South Dakota changed its constitutional prohibition to local option when admitted to the Union. Only two of its 66 counties and 30 of the 136 cities and towns now prohibit the sale. License fee, $400-$600.

Montana is "dry" in the sparsely settled parts in the mountains and plains. A county local option law is in force. In 1907 a law was passed forbidding a woman's presence in any capacity in a saloon and abolishing the "ladies' entrance." Butte is notorious for its liquor traffic. License fee, semi-annual, from $150 to $300.

Wyoming ranks fifth in the Union among the liquor traffic states. There is little restraint upon the sale. License fee, from $100 to $300.

Colorado in 1907 passed the Drake local option bill, which extends the option to municipalities, wards, and precincts. As the women have the suffrage in this state, temperance reform is very active. License fee, from $500 up.

Kansas added a prohibition clause to its constitution in 1880.

Georgia, in 1907, was the first Southern state to adopt prohibition. At the close of the Civil War the sale of liquor was forbidden within three miles of a church or school. County local option followed. The jug trade became so great that in July, 1907, a local option law was passed by a vote of 34 to 7 in the Senate and of 139 to 39 in the House. This law affected only 15 counties, for, prior to the passage of the act, 135 of the 150 counties were already "dry." The easy passage of the act surprised the temperance people more than any one else.

Oklahoma, the youngest of the states, after a fierce struggle, incorporated a prohibitory clause in its constitution. This was made the easier by the order of Congress in the enabling act that within the area of the former Indian Territory prohibition must endure for a period of 21 years.

Alabama passed a state prohibitory law to take effect January 1, 1909. Under the old acts 20 counties were under prohibitory laws. Quadrennial sessions of the legislature caused the exercise of great pressure by the reformers, and laws were passed in 1907: (1) allowing local option for counties; (2) preventing the shipment of liquors from "wet" to "dry" territory; (3) compelling teaching of temperance in public schools; and (4) forbidding the sale of beverages containing only a small percentage of alcohol. The manufacture and sale of liquors as a beverage within the state were forbidden by an act passed in the Senate by a vote of 32 to 2. License fee, $175-$350.

Mississippi, after the Civil War, forbade the sale of liquor within five miles of a church or school. Local option was passed in 1886. This had the effect of prohibiting the sale in 69 of the 76 counties or in 60 per cent. of the state. In 1908, by an almost unanimous vote of both houses, an act was passed providing for state prohibition to take effect on January 1, 1909. License fee, $600-$1,200.

North Carolina by local option laws forbade the sale of liquors in 62 of the 97 counties and from all but 30 towns and cities. On January 28, 1908, a bill was passed providing for an election on prohibition on the last Tuesday in April. License fee, $50-$400.

Tennessee passed the Pendleton liquor law on February 1, 1907. As a result of the vigorous campaign only the cities of Memphis, Nashville, and Chattanooga are "wet"; while all but 5 of the 96 counties are "dry." License fee, $150-$200. On July 1, 1909, a prohibitive law went into effect throughout the entire state. The law provides that no liquor be sold within four miles of any schoolhouse in the state. So completely did this provision prohibit the sale that all but two small localities came within the prohibitive area. Immediately schoolhouses were erected in these places so that the law can be enforced throughout the state. January 1, 1910, a law prohibiting the manufacture of liquors in the state became operative.

Kentucky has $160,000,000 invested in distilleries, yet by local option laws 94 of the 119 counties and 370 of the 425 towns and cities are "dry." Prohibition reigns in over 97 per cent. of the territory of the state. The mayor of Louisville was removed from office for failure to close the saloons on Sunday. License fee, $100-$150.

Virginia under the Mann liquor law prohibited the liquor traffic in rural districts, and within a few years 1,000 saloons have been closed.

This means that fully one half of the trade has been stopped. Norfolk and its vicinity supports one half of the existing trade. Of 140 incorporated towns 120 are "dry"; and there are no saloons in 73 of the 100 counties. License fee, $175-$350.

West Virginia has 1,000,000 inhabitants. Of these 700,000 live within prohibition limits. Of the 55 counties 29 are "dry." The county commissioner is empowered by the constitution to grant or withhold a liquor license at discretion. The councils of some cities and towns have the right to issue licenses. License fee, retail, $600; wholesale, $750.

South Carolina passed an act providing for state control of the sale of liquor in 1896. In that year Senator Tillman had the system incorporated in the constitution. It is known as the "dispensary system." At the dispensaries liquor was sold in sealed packages of not less than one half pint, not to be opened on the premises. The state, county, and municipality shared the resulting profits from the sale. In 1902 liquors were sold amounting to $2,406,213. These cost $1,664,870. The earnings, $566,898, were divided, $142,755 going to the school fund. As a revenue producer the dispensary system proved excellent; as a moral force it was a failure. The system was killed by the Carey-Cottigan bill, which permits local option between a reformed dispensary system and prohibition. Of the 41 counties, 23 have dispensaries and 18 are "dry."

Florida has been under a constitutional local option law since 1887. Of the 46 counties liquor is sold in only 13. There are saloons in only 22 incorporated towns. Laws are rigidly enforced; and three fourths of the people live under prohibition. License fee, $1,250.

Louisiana is working under local option law amended in 1902. Of the 59 parishes 24 are "dry." New Orleans, however, with its 325,000 inhabitants has 2,000 saloons. Yet two thirds of the state favors prohibition. License fee, from $200 up.

Texas with almost 3,000,000 population has worked under local option for several years. Of the 243 counties there are 147 "dry," 51 partly "dry," and liquor is sold in 45. The Baskin-McGregor law is not wholly satisfactory to the people. It is thought that seven tenths of the voters are in favor of prohibition. License fee, $300.

Arkansas has a system of voting by counties, townships, and wards on local option; by petition they may forbid a saloon to be opened within three miles of a church or school. In 1907 crossroad saloons were abolished, liquor salesmen were prevented from doing business within prohibition territory, and wholesalers were prohibited from advertising their goods in newspapers and by circulars within such territory. Prohibition rules in 80 per cent. of the territory, 58 of the 75 counties being "dry." License fee, $800.

Missouri, under the vigorous efforts of Governor Folk, has increased greatly in temperance sentiment. There is a local option law by which the counties vote as a unit, excluding cities of 2,500, which vote separately. A license is granted in "wet" districts only upon recommendation of one half of the taxpayers or of two thirds of the real estate owners in a block. Through Governor Folk's enforcement of the Sunday-closing law, over 700 saloons have closed in St. Louis within the last three years. Of the 114 counties 47 are "dry." License fee varies from $200 to $800.

Idaho wanted local option but the legislature gave it high license. The county commissioners may exercise some discretion in the granting of licenses outside of incorporated cities, and a municipality may prohibit the sale by an ordinance. License fee, $750.

Nevada has more liquor sellers in proportion to the population than has any other state in the Union—one to every 49 inhabitants. There are over 60 times as many liquor dealers in Nevada as in Mississippi. State license fee, $50; wholesale, $100; retail drug store, $12.

Washington, in 1907, lost a local option law by a vote of 43 to 44. Stringent enforcement of the Sunday-closing law forced two thirds of the saloons out of business. License fee, $300-$1,000.

Oregon is "dry" in eight of the 33 counties and in 70 precincts within other counties. License fee, $400.

California has not yet developed normal conditions since the San Francisco disaster; yet restrictive measures are being constantly passed and enforced. License fee is fixed by the authorities.

Utah grants a license at discretion of the local authorities, and, although the sale has been conducted on the "wide-open" principle for a long time, strong forces are opposing the traffic. The Mormon Church is taking a prominent part in the suppression. License fee, $400-$1,200.

District of Columbia grants licenses by an excise board. One desiring a license must have the written consent of a majority of the real estate owners and of the residents on the front of the square on which the saloon is to be situated and of those of the confronting side of the opposite square. License fee, $800.

Anti-Saloon League.—This powerful social force was founded in Oberlin, Ohio, in 1893, by the Rev. Howard H. Russell, D.D., a Congregational minister and the son of an Episcopal rector. He is now the chairman of the National Executive Committee and superintendent of the New York State League. The organization consists of a national, state, and district superintendency, non-sectarian and non-partisan. It is effective in 44 states and territories. The national superintendent is Rev. Purley A. Baker, D.D. Its campaign fund is supported by over 300,000 annual contributors.

Russia.—Drunkenness is the crying evil of Russia. The trade is in the hands of the government. After all expenses are paid, the national treasury draws from the liquor trade an annual profit of $250,000,000.

Liquor can be bought only in bottles, and is drunk on the streets, causing a public display of weakness and vice.

Some effort has been made by temperance societies to reform the people, but with slight success. The church has done a little, but no one can shut his eyes to the drunkenness of the lower clergy.

RELIGIOUS AND PHILOSOPHICAL TERMS.

ANABAPTISTS. The most extreme sect of the period of the Reformation. The sacrament of infant baptism was rejected by them on the ground that personal profession sealed by baptism alone suffices for salvation. Their development tended to overthrow the existing social order and to introduce a Christian theocracy of a socialistic nature. The most influential names in the development were Thomas Münzer (1521); Nikolaus Storch, the prophet of Wittenberg; John of Leyden or Johann Bockhold, put to death in 1536. The followers were active in the "Peasants' War" in Thuringia in 1525. Menno Simmons continued some of the teachings of the sect and founded the order of Mennonites.

ANNUNCIATION. The announcement to the Virgin Mary by the angel Gabriel of the beginning of the incarnation. The feast day is now observed on March 25, though the Council of Toledo (656) set it at December 18, and the Milan Church at the fourth Sunday in Advent. The present date was set by Sixtus IV. in 1480.

ANTINOMIANISM. The forcible separation of the "gospel" and the "law," or of faith and works. The controversy began with Paul and continues to the present day. During the Reformation the struggle was most acute and the most extreme partisan was Arnsdorf.

APOCALYPSE. The name given to the last book of the New Testament, usually called The Revelation of St. John. It was written about the year 96, while John was on the isle of Patmos, whither he had been banished by the emperor Domitian.

APOCHRYPHA means hidden, secret, and is applied to a collection of 14 books claiming to be sacred, sometimes appended to the Old Testament, but not admitted into the Biblical Canon. They form no part of the Hebrew Bible. In the Anglican Church they may be read "for example of life and instruction of manners," but not to establish any doctrine. Some of them exist only in Greek.

APOSTLE. "One sent"; a specially chosen messenger or delegate sent out on some important mission; specifically applied to the twelve disciples sent forth by Jesus to preach his gospel and heal the sick. The name is also applied to others in the New Testament, e. g., Paul, "the apostle to the Gentiles." He "had seen the Lord," and that was an important qualification. In more modern times the name is sometimes applied to those who have been sent on important missions, and have become most intimately connected with them; for example, John Eliot, "the apostle to the Indians." In the Mormon Church there is an official (one of 12) named an apostle, whose duty is to be a special witness of the name of Jesus. In the modern Greek Church service the lesson from the epistle is called "the apostle."

ARIANISM. Founded on the apparently contradictory statements of such Alexandrian theologians as Origen upon the relations between the Father and the Son. The conflict is perceived between the theory of the eternity of Christ and of his "essence," which conveys the idea of his inferiority to the Father. Arius (256-336) accepted the latter idea. The Nicene Creed expresses the idea of the coequality of Father and Son. The controversy waged between the years 318 and 381. It was renewed in England by Samuel Clarke in 1720 and in New England by Jonathan Mayhew in 1747.

ARIANS. The followers of the special doctrines of Arius, a deacon of Alexandria, in the fourth century. He held that Jesus, the son, having been begotten of the Father, could not be co-eternal with him, and that his nature could not be identical with that of the Father, but only similar to it. His doctrines were condemned by the Council of Nice, 325, which declared that "Christ is God of God; begotten, not made; of one substance with God." No Arians now exist.

ARMINIANISM. The reaction against the extreme interpretation of the Calvinistic dogma of predestination. Jacobus Arminius of Leyden (1560-1609) originated the movement. The Arminian view is held to-day by the Wesleyan or Methodist Episcopal Church.

ARTICLES, THE THIRTY-NINE. The body of Articles of the faith and discipline of the Church of England, based on an earlier group of 42, prepared by Archbishop Cranmer and Bishop Ridley; submitted to Parliament and Convocation in 1562, and adopted as the criterion of the faith of its members on the subjects to which they relate.

ASSUMPTION. Direct reception into heaven, and regarded as one of the "privileges of the Virgin." The feast of the Assumption is celebrated on August 15.

ATHANASIAN CREED. Supposed to date from the fifth century. It is remarkable for the damnatory clauses which it contains; and arose from the controversy which raged during the time of Arius. This creed is rejected by the Eastern or Greek Church, by the American Episcopal Church, and has been questioned by the Church of England. It was not written by Athanasius (296-373).

AUGSBURG CONFESSION. The most authoritative of the Lutheran creeds. Prepared by Melanchthon in 1530 with the approval of Luther and at the request of Emperor Charles V.

AVATAR. The name which signifies in Hindu mythology each of the ten incarnations of Vishnu.

BACONIAN METHOD. Investigation advocated by Francis Bacon (1561-1629) requires (1) a collection of particular instances as exhaustive as possible; (2) from these collected instances are excluded by comparison all elements which do not accompany the phenomenon investigated; (3) by this exclusion and comparison a result is arrived at which proves the general proposition. The method is known as the Inductive Method, whereby from a number of particular cases a general result is reached.

BELGIC CONFESSION. The doctrinal standard of the Dutch and Belgian Reformed Churches and of the Dutch Reformed Church in America. It was drawn up by Guido de Brès and others in 1561; adopted by several synods between 1566 and 1581; and modified by the Synod of Dort in 1619.

CANONIZATION. The ceremony by which eminent deceased believers in the Roman Catholic Church are raised to the rank of saints. The honor of public worship is conferred upon the person. No one can be canonized until a generation after death.

CARDINAL is derived from Latin *cardo*, a hinge, and was first applied to the priests and deacons permanently attached to a church, thus forming a hinge round which the work of the church turned. It now designates a member of the Sacred College at Rome, who is a counselor of the pope, is nominated by him, and is next in rank to him. Three classes were established in the fifteenth century by Paul II.: cardinal bishops (6), cardinal priests (50), and cardinal deacons (14). In 1570 the number was fixed at 70, after the 70 elders of Moses. The official dress includes a red cassock, a short, purple mantle, and a low-crowned, broad-brimmed, red hat with a hanging cord (with 15 tassels) at each side.

CARDINAL VIRTUES. These are prudence, temperance, fortitude, and justice.

CARMELITES. A monastic order founded by Berthold on Mount Carmel in the twelfth century. It was formally recognized by the church in 1224. It is credited with the invention of the scapulary. A dispute with the Jesuits brought its power to a close in 1698.

CELIBACY. The state of unmarried persons; especially the voluntary abstention from marriage as among the clergy of the Roman Catholic Church, and one of the vows of the "orders" of that and similar churches. Celibacy was demanded by Buddha of his monkish order, the Sangha. This has been relaxed among some of the Buddhist sects of Japan; for example, the Jodo sect.

CHALDEANS, THE, or **AKKADIANS,** are a non-Semitic race, who came originally from the mountain country of Elam, and were formerly the dominant people of Babylonia. One of the four great cities of Shinar was Accad. The Babylonians were indebted to the Sumero-Akkadians for their cuneiform writing, religion, and mythology.

CISTERCIAN. A monastic order founded by St. Bernard at Citeaux, in Burgundy, in 1113. It is important in the records of Scholasticism and Mysticism, and with the founding of Port Royal.

COLLECTIVISM. Public ownership of land and capital and the public control of industries. Often used synonymously with Socialism, Communism, and Social Democracy.

COMMUNISM. Extreme Socialism which advocates village communities under the principles advocated by

Marx and Engels. The Communistic Manifesto was promulgated in 1847 and was an important factor in the Revolution of 1848.

CREED. An orderly statement or declaration of one's beliefs, especially in regard to Christian doctrine; but one may have a "political" or other "creed." The Christian creeds are numerous. The "Apostles' Creed," and the "Nicene Creed," both of the fourth century, are the creeds of the Protestant churches. To this the Church of England adds the "Athanasian Creed" (which see).

DEISM. The form of religion which separates God from the world so far as denying that the idea of God includes either in whole or in part the idea of the world.

DEUS EX MACHINA. Divine power or agency regarded as separate from nature and changing or interfering with it at times. A tenet of Deism.

DING AN SICH. A phrase invented by Kant to indicate "a thing in itself" considered apart from the phenomenon by which it is attended or manifested.

DOMINICANS. The order of the brethren of St. Dominic, founded in 1216. The members took vows of mendicancy, chastity, poverty, and obedience. Albertus Magnus and Thomas Aquinas were among its members. Tauler, Suso, Eckhart, and Savonarola were members at a later period.

DONATISTS. A sect of the Christian Church in Roman Africa in the fourth century. It was submerged by the Saracenic invasion in the seventh century.

DRUSES. Agnostic theists of Syria.

ECLECTICISM. A philosophic system which endeavors to incorporate the best of all systems. The Alexandrian Neo-Platonic School is known as the Eclectic School.

EDWARDEANS. American theologians who followed the teachings of Jonathan Edwards regarding Calvinism. It is also known as New England Theology and Berkshire Divinity.

EMPIRICISM. The doctrine that truth is to be sought in experience as derived from immediate sense impressions. Opposed to Rationalism.

EPICUREANISM. The ethical doctrine of Epicurus that pleasure is the only thing worth having on its own account and that each man's pleasure is his own chief good. The teachings of Epicurus form more a code of laws for the conduct of life than a system of philosophy.

EPIPHANY. The festival of the manifestation of God to mankind through Christ. In the Christian Church the festival is celebrated on January 6. The Western Church regards the event as dating from the manifestation of Christ to the Wise Men of the East.

ESCHATOLOGY. That part of systematic theological teaching which deals with the "last" things—death, the end of the world, and the future life.

EUCHARIST. The sacrament of the Lord's Supper. The views held concerning the sacrament are very divergent and include (1) the doctrine of the Real Presence, which holds that the whole substance of the bread is changed into the body and the whole substance of the wine is changed into the blood of Christ; (2) the doctrine of the Virtual Presence, which holds that the Eucharist is the only means by which the benefits of his atonement are conferred; and (3) the doctrine of the Figurative Presence, which regards the elements and the rite as only memorials of Christ's death.

EXEGESIS. That branch of dogmatic theology which deals with the interpretation of authoritative sacred books. It comprises rabbinical, patristic, mediæval, and modern exegesis.

FALK LAWS, THE (1873), were so called from Dr. Falk, who insisted on the compulsory education of the clergy of Prussia. The laws are four in number: (1) The first was directed against the abuse of ecclesiastical discipline for political purposes, such as "boycotting," excommunication, and anathemas; (2) the next regulated the effect of secession from the church on the obligation to meet certain taxes; (3) the third law was directed at the evasions by Roman Catholics of state education incumbent on all Germans; and (4) abolished the legality of papal tribunals, recognizing the judgments of the German ecclesiastical courts as the only authority on church matters. In 1874 these four laws were supplemented by others, to insure more perfect obedience. Dr. Adalbert Falk was appointed by Prince Bismarck "Minister of Public Worship," January 22, 1872. In 1872 Prince Bismarck carried through the Prussian Houses a bill to transfer the control of primary education from the church to the state authorities.

FRANCISCANS. The brethren of the Order of St. Francis, founded 1210-1223. After the growth of the first century its adherents numbered over 200,000. Among its prominent members were Bonaventura, Alexander of Hales, William of Occam, and Roger Bacon.

HAGIOGRAPHA. The Canon of the Old Testament is divided into: the Law, the Prophets, and the Hagiographa or sacred writings. This last includes the Psalms, Proverbs, Job, Song of Songs, Ruth, Lamentations, Ecclesiastes, Esther, Daniel, Ezra, Nehemiah, and Chronicles.

HAGIOLOGY. That part of ecclesiastical history which deals with the lives, deeds, and the canonization of saints.

HALACHA AND HAGGADA. The divisions of the Midrash or the exegesis, exposition, and commentaries of the law of Moses. Halacha deals with the interpretation of the sense of the Hebrew scriptures; Haggada comprises the stories, legends, and parables which explain the Law.

HERESY. Opposition to the fundamental dogmas of the church when the opponents are of the members of the church. Heterodoxy is a lesser degree of opposition or of dissent.

HERMENEUTICS. That part of theological exegesis which deals with the science or theory of interpretation.

HUGUENOTS. Protestants, first called so in France, from a German word signifying "allied by oath" (1560); massacre of them at Paris (August 24, 1572).

IDEALISM. A theory in metaphysics which holds that the universe is the work or the embodiment of reason or of mind.

IMMACULATE CONCEPTION. The dogma which holds that the Virgin Mary became by the grace of God the subject of a peculiar reception of the merits of Christ by which she escaped all influence of original sin. This dogma was promulgated by Pope Pius IX. in 1854.

INCARNATION. -The assumption by Deity of mortal, generally human, form. The Christian conception of the incarnation teaches the union of the divine and the human nature in the person of Christ.

INFALLIBILITY. When applied to the church, the doctrine teaches that the church as a whole, by the influence of the Divine Spirit, cannot err in matters of faith and morals. When applied to the pope, the teaching is that the pope, by the assistance of St. Peter, cannot err when speaking *ex cathedrâ* on matters of faith and morals. That latter doctrine was authoritatively enunciated by the Vatican Council in 1870.

INTELLECTUALISM. In psychology, the theory which holds that the intellect is more fundamental than are the affections. In philosophy, it is held that the ultimate principle of the universe is some form of thought or reason, or is capable of explanation in terms of the intellect.

INTERCESSION. The doctrine that Christ on his ascension to heaven took upon himself the office of perpetual mediation with the Father on behalf of mankind, whom he had redeemed by his crucifixion and death.

INTERMEDIATE STATE. The condition of human souls in the interval between the death of the body and the last judgment.

KNIGHTS TEMPLARS. A religious order instituted 1119; flourished in England during the reign of Henry II.; all of them in France arrested in one day. They were charged with great crime and great riches. Fifty-nine of them were burned alive at Paris (1307); their order destroyed by Pope Clement V. in 1312.

LATITUDINARIANISM. Holding a breadth of view and of tolerance almost approaching indifference. In the seventeenth century the term was applied to the views of those churchmen who sought to effect a union between the Dissenters and the members of the Church of England by emphasizing only common grounds of belief.

LIBERALISM. The disposition on the part of an individual to free and untrammeled thought and action. It is opposed to conservatism. When urged to extremes liberalism becomes radicalism.

LOGOS. The Son of God in whom God's wisdom and power are made manifest and who was incarnate in the person of Jesus Christ.

MACROCOSM AND MICROCOSM. Macrocosm is the great world or universe in contrast to man, the microcosm or small world.

MANICHAEISM. The two principles of good and evil, light and darkness, are in eternal conflict in the world and in man's nature, where the struggle is between the flesh and the spirit. Evil influence is to be overcome only by vigorous discipline. For a time St. Augustine was influenced by this teaching.

MATERIALISM. The view that all of the facts of the universe are capable of explanation upon the basis of body or matter indefinitely extended. The ultimate fact of the universe is matter in motion. The greatest modern development of materialism was effected by the Encyclopaedists in the eighteenth century.

MELIORISM. A term invented by George Eliot to express a view midway between optimism and pessimism. It is a belief that it is possible to improve the world by human effort and that such improvement is an inevitable result of evolution.

METEMPSYCHOSIS. The transmigration of souls from one form to another, either human or animal. It is a tenet of Orphic, Pythagorean, Egyptian, Indian, Jewish, and Swedenborgian philosophy.

MONKERY began in Egypt and Persia; tolerably well established about 330. In Egypt alone there were 96,000 monks. St. Anthony, the first example of a monastic life (305), established the first monastery on Mt. Colzim, near the Red Sea. Athanasius introduced monastic life into Rome in 341.

MYSTICISM. Forms of religious and speculative thought which claim to hold direct communication with, or obtain immediate knowledge of, the divine essence.

NATIVITY. The birth of Christ. This occurred probably four years before the date fixed by current chronology.

PAGANISM, finally overthrown in the Roman Empire in the reign of Theodosius between 388 and 395.

PERSECUTION, by the Jews, the first in 33; first general of the Christians under Nero (64); second under Domitian (93); third under Trajan (107); fourth under Marcus Aurelius (166-177); fifth under Severus (202); sixth under Maximinus (235); seventh under Decius (250); eighth under Valerian (257); ninth under Aurelian (275); tenth under Diocletian (302); by the Arians under Constantius (337); under Julian the Apostate (361); Luther's followers persecuted in Franconia (1525); the Protestants persecuted in England (1556); in France (1723).

POPE, Title of, formerly given to all ecclesiastics; then it became a special title of bishops, and still later was confined to the supreme pontiff; but Boniface III. (606) influenced the emperor Phocas to confine it to the bishops of Rome. Hygenus was the first bishop of Rome that took the title. Supremacy of pope over the Christian Church first enforced by Boniface III. (607); John XIX., a layman, made pope (1024). The first pope that kept an army was Leo IX. (1048). Pope Gregory obliged Henry IV., Emperor of Germany, to stand three days, in the depth of winter, barefooted, at his castle gate, to implore his pardon (1077); the pope's authority first introduced into England (1079); abrogated by Parliament (1534); the word pope struck out of all English books (1541).

PROTESTANTS, NAME OF, began from the Diet of Spires, when several of the German states protested against a decree of the Diet to support the doctrine of the Church of Rome (1529).

SAINTS, TUTELAR. St. George of England, St. Andrew of Scotland, St. Patrick of Ireland, St. David of Wales, St. Denis of France, St. James of Spain.

RELIGIOUS AND ETHICAL WRITERS AND REFORMERS.

ABBOTT, LYMAN (1835-). American clergyman, author, and editor; a lawyer (1856-1859); minister (1860-1898); editor-in-chief of *Outlook* since 1898; author of many ethical works, including *How to Study the Bible* and *Life of Christ.*

ABERDEEN, ISHBEL MARIA, COUNTESS OF (1857-). Wife of the Earl of Aberdeen, former viceroy of Canada. She has devoted much of her wealth, her talents, influence, and personal service to the amelioration of the condition of the people, particularly of the women, in Scotland, Ireland, and Canada. As president of several organizations, she has done much effective work.

ABU-BEKR (570-634). The first caliph; father of Ayeshah, wife of Mohammed. He collected the writings and sayings of Mohammed and so formed the *Koran.*

ADDAMS, JANE (1860-). An American social settlement worker and a founder of the Hull House at Chicago (1889); born at Cedarville, Ill. Her work is eminently practical. Great executive ability and utter unselfishness have made her a leader of social workers in America; has written much on sociological matters.

ANTHONY, SUSAN BROWNELL (1820-1906). An American reformer; born at Adams, Mass. Very active in total abstinence and anti-slavery movements. After the Civil War she devoted her work to woman suffrage; founded (1868) and published for three years *The Revolution,* a journal advocating woman's rights. Voted at an election in 1872, for which she was fined. On the platform she has lectured eloquently on her life work; has appeared before committees of Congress; and has taken part in state campaigns. Much of her literary work was done with Elizabeth Cady Stanton and Matilda Joslyn Gage.

AUGUSTINE, SAINT (354-430). Famous scholar and preacher; born near Carthage; a teacher in Rome and Carthage; in 396 became a priest and was made Bishop of Hippo in Africa. *Confessions* and *City of God* are his best-known books.

AVERY, RACHEL FOSTER (1858-). An American reformer; born at Pittsburg, Pa. Educated here and abroad, taking a special course in political economy at Zurich. Has always been active in woman suffrage movements; has had charge of many conventions and the Nebraska campaign; corresponding secretary of the National Suffrage Assembly for over 20 years.

AVERY, SUSAN LOOK (1817-). An American writer and reformer; born at Conway, Mass. Founded the Louisville, Ky., Woman's Club, and the Susan Look Avery Club, of Wyoming, N. Y. Her literary work has been extensive on the subjects of woman suffrage, temperance, single tax, bimetallism, and other topics.

BAKER, PURLEY A. (1858-). An American reformer and temperance worker; born in Jackson County, Ohio. Ordained to the Methodist Episcopal Church (1884) and has held several important charges. Managed the Cleveland, O., Anti-Saloon League (1896); state superintendent (1897-1903); national superintendent Anti-Saloon League of America since 1903.

BANKS, LOUIS ALBERT (1855-). An American M. E. clergyman, born in Corvallis, Ore. Evangelist of the American Anti-Saloon League; edited *The Pacific Censor* in Vancouver; shot down in the street through the agency of enraged liquor dealers; nominated for governor at state convention of Massachusetts Prohibitionists in 1893, but declined. Has written much on religious and social themes.

BARCLAY, ROBERT (1648-1690). A Scottish divine and writer, known as the celebrated apologist of the Quakers; became a Friend in 1667, and during his travels enjoyed the companionship of William Penn. His great work, *An Apology for the True Christian Divinity,* was published in 1676.

BARKER, HELEN MORTON (1834-). American reformer; born at Richville, N. Y. Treasurer of the National Women's Christian Temperance Union since 1893; president of Dakota W. C. T. U. for eight years; assisted Mrs. Potter Palmer; member Board of Lady Managers of the World's Fair and superintendent of the industrial department there.

BARNES, ALBERT (1798-1870). An American Presbyterian minister and Biblical commentator; was best known by his *Notes* on the *New Testament* (of which over one million copies are said to have been circulated), *Isaiah, Job, Psalms,* etc.

BARROWS, JOHN HENRY (1847-1902). Clergyman; successive pastorates in Lawrence and East Boston, Mass., and First Presbyterian Church of Chicago (1881); Christian lecturer in India in 1896 for Chicago University; organizer and president of the World's Parliament of Religions at Chicago (1893); lecturer throughout Indian Empire (1896-1897); president of Oberlin College (1898-1902). Author of *I*

Believe in God and *History of the World's Parliament of Religions.*

BARROWS, SAMUEL JUNE (1845-1909). An American author and prison reformer, born in New York City. Newspaper correspondent; editor of *The Christian Register;* member of Congress from Boston (1897); appointed by President Cleveland commissioner for the United States at the International Prison Commission in Paris, Brussels, and Budapest (1896); president of the International Congress; officer and member of several prison reform societies.

BARTON, CLARA (1830-). An American philanthropist; born in Oxford, Mass. On the outbreak of the Civil War she became a volunteer nurse in the army hospitals and on the battlefield. On the breaking out of the Franco-Prussian War, in 1870, she aided the grand duchess of Baden in preparing military hospitals, assisted the Red Cross Society, and, at the request of the authorities, superintended the distribution of work to the poor of Strassburg, in 1870, after the siege, and in 1872 did a like work in Paris. At the close of the war she was decorated with the Golden Cross of Baden and the Iron Cross of Germany. On the organization of the American Red Cross Society, in 1881, she was made its president. In 1889 she had charge of movements in behalf of sufferers from the floods at Johnstown, Pa.; in 1892 distributed relief to the Russian famine sufferers; in 1896 personally directed relief measures at the scenes of the Armenian massacres; in 1898 took relief to the Cuban reconcentrados and performed field work during the war with Spain; and in 1900 undertook to direct the relief of sufferers at Galveston, but broke down physically. In 1903 she undertook the reorganization of the Red Cross Society in the United States.

BAXTER, RICHARD (1615-1691). English Non-Conformist divine; educated privately; always strongly religious; became a teacher, then a clergyman. During the Civil War he joined with the Puritans, participating in several sieges. His first and most famous book, *The Saints' Everlasting Rest* (1650), was followed by *Call to the Unconverted,* and then by *Paraphrase of the New Testament,* which book caused his imprisonment for 18 months. Other publications, aggregating 160, appeared while he continued preaching.

BEECHER, HENRY WARD (1813-1887). Protestant pulpit orator; (1837-1847) pastor of Presbyterian churches in Indiana; (1847-1887) pastor of Plymouth Church, Brooklyn, a new Congregational organization, where his fame became world-wide. His speeches delivered in England in 1863 changed English public opinion in favor of the North. His writings are extensive in number and scope.

BEECHER, LYMAN (1775-1863). An American theologian; fame was made by his sermon on the killing of Alexander Hamilton by Aaron Burr (1804); pastor at Litchfield, Conn. (1810-1826); published *Sermons on Intemperance* (1814); pastor of the Hanover Street Church, Boston (1826-1832); president of Lane Theological Seminary near Cincinnati (1832-1852); tried by his presbytery for teaching false doctrines and acquitted (1835); went with the New School when the Presbyterian Church divided (1838).

BELLAMY, EDWARD (1850-1898). American author, socialist, and journalist; best known work is *Looking Backward or 2000-1887;* a strong socialistic force which led to the formation of Bellamy clubs and of the National Party; *Equality,* a sequel to the first, is on similar lines; other works include sociological essays and short stories.

BELLOWS, HENRY WHITNEY (1814-1882). An American Unitarian clergyman and writer; chief founder and long an editor of the *Christian Inquirer.* The best of his works are *The Treatment of Social Diseases, Restatements of Christian Doctrine,* and *The Old World in Its New Face.*

BERNARD, SAINT (1091-1153). Abbot of Clairvaux; born at Fontaines, in Burgundy; pronounced one of the grandest figures in the church militant; founded in 1113 a monastery at Citeaux, in Burgundy; drew around him disciples who rose to eminence as soldiers of the cross; prepared the statutes for the Knights-Templars; defeated Abélard in public debate and procured his condemnation; founded many monasteries; awoke Europe to a second crusade.

BESANT, ANNIE (1847-). An English writer and lecturer on Free Thought; born in London. Was associated with Bradlaugh as lecturer and editor of *The National Reformer.* Carried on work among the poor; associated with Madame Blavatsky, whom she succeeded. Her writings on sociological subjects are very numerous.

BIDDLE, JOHN (1615-1662). Father of the modern Unitarianism; was repeatedly imprisoned for his anti-Trinitarian views. To save his life, Cromwell banished him to one of the Scilly isles in 1655. Here he remained three years, until the Protector liberated him in 1658. He then continued to preach his opinions till the death of Cromwell, and also after the Restoration, when he was committed to jail in 1662, and died a few months after.

BINGHAM, HIRAM (1831-1908). Born in Honolulu. Captain of vessel Morning Star (the children's ship), taking it to Honolulu; transferred to Gilbert Islands (1857). Translated New Testament into Gilbertese (1873); complete Bible (1893); a Gilbertese-English dictionary of 12,000 words (1896) for missionaries learning the unwritten Gilbertese tongue.

BLACKWELL, ALICE STONE (1857-). A prominent writer on woman suffrage; born in Orange, N. J. A member of the staff of the *Woman's Journal* of Boston, Mass.

BLACKWELL, ELIZABETH (1821-1910). The first woman to receive a medical diploma; born in Bristol, England. Graduated from the University of Geneva, N. Y. Practised in New York City and was very successful. Settled in Hastings, England, in 1878.

BLACKWELL, EMILY (1832-). Physician and philanthropist; sister of Elizabeth Blackwell. Began study of medicine and graduated from the medical college at Cleveland, Ohio; founded a hospital in New York (1854), which was granted college authority in 1865, and has been a successful school ever since.

BLAKE, LILLIE DEVEREUX (1835-). An American writer, lecturer, and advocate of woman suffrage; born in Raleigh, N. C. Educated at New Haven, Conn. Married Frank G. Q. Umstead (1855), and was left a widow in 1865. Wrote the novel, "Southwold"; married Grinfil Blake, a merchant of New York (1866). President of the New York State Woman's Suffrage Asosciation (1879-1890).

BLANC, JEAN JOSEPH LOUIS (1811-1882). Writer and communist; founded the *Revue du Progrès Politique, Social et Littéraire* in 1839; published in 1841, *Histoire de dix Ans,* an indictment of Louis Philippe and his ministers; as member of Provisional Government (1848) made proposals for universal suffrage and abolition of slavery; accused of complicity in Communist outbreak and fled to England, where he finished *Histoire de la Révolution Française* and wrote *Histoire de la Révolution de 1848,* and other works (1848-1870); deputy for Paris till 1882.

BLISS, WILLIAM DWIGHT PORTER (1856-). An American founder of the Society of Christian Socialists; born at Constantinople, Turkey. Became a minister of the Protestant Episcopal Church; joined the Knights of Labor and other kindred societies; published *The Dawn;* represented the cause of Christian Socialism throughout the country. His views are Christian Socialistic.

BLOOMER, AMELIA (1818-1895). An American temperence advocate and woman suffragist; born in Homer, N. Y. Published *The Lily* in the cause of woman; originated and wore for six years the bloomer dress for women.

BLUNT, JOHN JAMES (1794-1855). An English divine, author of *Undesigned Coincidences in the Writings, Both of the Old and New Testaments, an Argument for Their Veracity,* a work of high authority.

BONAR, HORATIUS (1808-1889). A celebrated Scotch hymnist; wrote *Hymns of Faith and Hope,* many of which have been taken into the hymnals of most of the Protestant churches.

BOOTH, BALLINGTON (1859-). Associate founder and head of the Volunteers of America; born in Yorkshire, England. Separated from the Salvation Army in 1896 on the ground that the organization was not sufficiently democratic for the best work in America.

BOOTH, (Mrs.) MAUD BALLINGTON (1865-). Wife of Ballington Booth and with him founder and head of the Volunteers of America; born in Surrey, England. Has done extensive work in Europe and America and, lately, in prison reform work.

BOOTH, WILLIAM (1829-). Founder of the Salvation Army; born in Nottinghamshire, England. Associated with the Methodist body; started the "Christian Mission" in London, from which the Salvation Army originated in 1878. The success of the movement is largely due to Booth's skill as an organizer and executive. Wrote "Darkest England" in 1890.

BORGHESE (*bor-gay'zay*), **PRINCESS MARIE PAULINE** (1780-1825). The beautiful sister of Napo-

leon; born in Ajaccio; died in Florence. She left many legacies, and a donation, the interest of which was to enable two young men of Ajaccio to study medicine and surgery. The rest of her property she left to her brothers, the count of St. Leu and the prince of Montfort. The whole property amounted to 2,000,000 francs.

BOSSUET, JACQUES BENIGNE (1627-1704). French prelate and controversialist, and considered the greatest of Christian orators; first attempted philosophical treatment of history. His orations at the funerals of the duchess of Orleans and the great Condé are masterpieces.

BOURDALOUE (*boor-da-loo'*), **LOUIS** (1632-1704). A Jesuit and one of the greatest preachers France ever produced. The extreme popularity of his sermons induced his superiors to call him to Paris, and he became the favorite preacher of Louis XIV.

BOURNE, HUGH (1772-1852). Founder of the sect of Primitive Methodists. He wrote *History of the Primitive Methodists,* and founded *The Primitive Methodist Magazine* (1824).

BOWEN, FRANCIS (1811-1890). An American author; instructor in intellectual philosophy and political economy at Harvard; proprietor and editor of the *North American Review* (1843-1854); Alford professor of natural religion, moral philosophy, and civil polity at Harvard.

BRACE, CHARLES LORING (1826-1890). An American founder of the Children's Aid Society; born at Litchfield, Conn.; studied prison reforms in Europe (1850-1852); returned to active missionary work in New York City. Was secretary and principal agent of the Children's Aid Society; and founded several industrial schools. Wrote extensively on sociological topics.

BRIDGET, SAINT (453-523). An Irish saint; born at Dundalk; takes rank in Ireland with St. Patrick and St. Columba. Also the name of a Swedish saint in the fourteenth century; founded a new order and 72 monasteries of the order.

BROOKS, PHILLIPS (1835-1893). Bishop of the Protestant Episcopal Church. Rector of Church of the Advent (1862), and Holy Trinity Church, Philadelphia, till 1869, when he became rector of Trinity Church, Boston; bishop of Massachusetts (1891-1893); published *Lectures on Preaching, The Influence of Jesus,* and several volumes of sermons.

BRUNO, SAINT (1030-1101). Born at Cologne; retired to a lonely spot near Grenoble, with 14 others, where they lived in cells apart, and met only on Sundays; founder of the Carthusian Order of Monks, the first house of which was established in the solitude of Chartreuse.

BUSHNELL, HORACE (1802-1876). An American clergyman and noted writer on religion, morality, and other topics.

BUTLER, JOSEPH (1692-1752). An eminent English divine; became preacher at the Rolls, where he delivered his celebrated *Sermons;* made dean of St. Paul's and finally bishop of Durham; his great work was *The Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature.*

CALVIN, JOHN (1509-1564). An eminent reformer of the sixteenth century; for his attempts at reforming theology was compelled to flee from France (1533); settled in Basel, where he wrote the *Institutes of the Christian Religion;* went to Geneva (1536) and worked for the Reformation. His religious works fill 59 volumes, published in Berlin (1863-1900). He established the Presbyterian form of church government; the fundamental principle of his theology is that of predestination to eternal happiness or misery by the absolute decree of God.

CAMPBELL, ALEXANDER (1788-1866). Irish founder of the denomination of "Christians," or "Disciples of Christ," known as "Campbellites"; came to the United States in 1809 and settled at Bethany, W. Va.; founded Bethany College (1841) and was president of it until his death; established the *Christian Baptist* (1823), which became the *Millennial Harbinger* from 1829 until 1863.

CATHERINE, SAINT (1347-1380). An Italian nun at Siena; mediator between the rival popes in the great schism.

CAVALIER (*kah-val-yay'*), **JEAN** (1679-1740). Leader of the Camisards; born at Ribaute; fought for religious freedom against Louis XIV.; passed over to England; served against France, and was governor of Jersey.

CHALMERS, THOMAS (1780-1847). A noted Scotch divine; regarded as the founder of the Free Church of Scotland.

CHANNING, WILLIAM ELLERY (1740-1842). Noted American preacher, "the apostle of Unitarianism"; author of many religious and literary works; his widest influence was exerted upon social questions.

CHEMNITZ, MARTIN (1522-1586). German Protestant theologian; by inducing the Saxon and Swabian churches to adopt the *Concordien formel* as their confession of faith, he consolidated Luther's work.

CHRYSOSTOM, JOHN, SAINT ("GOLDEN MOUTHED") (344?-407). A celebrated Greek father of the church; his works consist of *Homilies, Commentaries, Epistles, Treatises,* and *Liturgies.* The *Homilies* are considered to be finer than any other similar early Christian writings.

CLARKE, JAMES FREEMAN (1810-1888). An American Unitarian clergyman and author; settled in Boston, Mass., in 1841, and was pastor of the Church of the Disciples. From 1867 to 1871 he was professor of natural religion at Harvard.

CLEMENS, TITUS FLAVIUS, or CLEMENT OF ALEXANDRIA (about 150-about 215). One of the Greek fathers of the church; had Origen for pupil; brought up in Greek philosophy; converted in manhood to Christianity. Jerome called him "the most learned of men." In the *Stromata* is found one of the earliest Christian hymns, "Shepherd of Tender Youth."

COBB, HENRY EVERTON (1863-). Clergyman of the Reformed Church. In 1888 began to preach at West Troy, N. Y.; first pastor of West End Avenue Collegiate Church in New York City since 1893.

COLLYER, ROBERT (1823-). Unitarian clergyman of English birth; a blacksmith who became a Methodist preacher, changing to Unitarianism in 1859; founded Unity Church, Chicago (1860); since 1879 pastor of Church of Messiah, New York City (now pastor emeritus). Author of *Nature and Life, The Simple Truth, Talks to Young Men,* and *Things New and Old.*

COLUMBA, SAINT (521-597). A native of Ireland. About 563 he landed in the island of Hy, now called Iona, and founded his church; traversed the whole of northern Scotland, preaching the Christian faith and founding monasteries. The Columban Church was in some points of doctrine and ceremonial opposed to that of Rome, to which it owed no allegiance. He died in Iona.

CONWELL, RUSSELL HERMAN (1842-). Baptist clergyman; lawyer in Minneapolis and Boston till 1879, serving in the meantime as immigration agent and foreign correspondent for Boston and New York papers. Pastor of Grace Baptist Church, Philadelphia (1881-1891); founder and president of Temple College (1888); pastor of the Baptist Temple, Philadelphia, since 1891; Lyceum lecturer. Author of *Woman and the Law, Acres of Diamonds, Lives of the Presidents,* and *The New Day.*

COOPER, PETER (1791-1883). A manufacturer and philanthropist; born in New York City; apprenticed to a carriage maker; engaged in furniture manufacture; mover in laying the Atlantic cable; took great interest in education; founded Cooper Institute.

CORNELL, EZRA (1807-1874). An American philanthropist; born in Westchester Landing, N. Y. He accumulated a large fortune and is best known as the founder of Cornell University. He began life as a mechanic and miller at Ithaca, N. Y., and subsequently became a contractor for the erection of telegraph lines. He died in Ithaca.

CROSBY, HOWARD (1826-1891). American clergyman and scholar. In 1863 pastor of the Fourth Avenue Presbyterian Church in New York City; in 1877 a delegate to the first Presbyterian General Council, in Edinburgh; one of the founders and president of the Society for the Prevention of Crime.

CUYLER, THEODORE LEDYARD (1822-1909). American Presbyterian clergyman; after active pastoral work (1848-1890), became minister at large. Active in temperance and philanthropic work; published about 4,000 articles in religious periodicals.

DIONYSIUS EXIGUUS (about 470-about 540). A learned monk, a "Scythian by birth, but wholly Roman in other respects." His works include a collection of the first 50 canons of the Apostles, the canons of 10 Councils, and 38 decretals of the popes from 384 to 498; promulgated by Charlemagne in 802. Dionysius

completed the paschal year and introduced the system of counting the years from the birth of Christ.

DOL'LINGER, JOHANN JOSEPH IGNAZ VON (1799-1890). A Catholic theologian and historian; head of the old Catholic party in Germany; wrote extensively on theological and ecclesiastical topics.

DORNER, ISAAK AUGUST (1809-1884). A German Lutheran divine; born in Württemberg; professor of systematic theology and exegesis at the University of Berlin (1861).

DOW, NEAL (1804-1897). An American temperance reformer; born in Portland, Me. He was the author of the bill which prohibited the manufacture and sale of intoxicating liquors in the state of Maine, widely known as the "Maine Law." During the Civil War he was colonel of a Maine regiment, and a brigadier general of volunteers.

DRACHMAN, BERNARD (1861-). Rabbi Congregation Zichron Ephraim, New York, since 1889, and professor of Bible and Rabbinical Codes, Jewish Theological Seminary of America; author of *From the Heart of Israel;* translator of Hebrew literature.

DUNSTAN, SAINT (925?-988). An English monk who was made Archbishop of Canterbury, and obtained great political influence, which he subsequently lost.

ECK, JOHANN MAIER VON (1486-1543). A German theologian; a violent antagonist of Luther and Luther's doctrines; went to Rome, and procured a papal bull against both (1520); undertook at the Augsburg Diet to controvert Luther's doctrine from the Fathers, but not from the Scriptures; was present at the conferences of Worms and Regensburg; wrote the *Obelisci* to confute Luther's theses. He wrote a German translation of the Old Testament and revised Luther's translation of the New.

EDDY, MARY BAKER GLOVER (about 1822-). The founder of the Christian Scientist denomination. Mrs. Eddy assigns 1866 as the date of her discovery; founded the First Christian Science Church at Boston (1879) and opened the Massachusetts Metaphysical College (1881); wrote *Science and Health with Key to the Scriptures* (1875), *People's Idea of God, Christian Healing, Retrospection and Introspection, Unity of Good, Rudimental Divine Science, No and Yes, Manual, Miscellaneous Writings, Christ and Christmas, Christian Science versus Pantheism, Pulpit and Press,* and *Message to the Mother Church.*

EDWARDS, JONATHAN (1703-1758). Most celebrated early American divine; president of Princeton College for 34 days; after a successful pastorate of 17 years he was dismissed in 1750 by council; for eight years he was missionary to the Indians, during which time he wrote *Freedom of the Will, Original Sin,* and *Nature of Virtue,* all works of great power and influence, which led to a distinct theological movement in America.

ELIZABETH, SAINT (1207-1231). Daughter of Andrew II. of Hungary and wife of Louis IV., landgrave of Thuringia; spent her life in charitable and religious work; at the death of her husband, driven with her children from Thuringia to Marburg, she identified herself with a new religious order; four years after her death canonized by Gregory IX.

ERASTUS, THOMAS (1524-1583). A Swiss physician and theologian; occupied several positions as chief physician to dignitaries throughout Europe and held the chair of medicine in several colleges. His fame now rests on his theological writings.

ESCOBAR' Y MENDOZA, ANTONIO (1589-1669). A Spanish Jesuit and casuist; born at Valladolid; a preacher and voluminous writer. He was celebrated for his doctrine that the moral value of action lies in the nature of the intention.

FABER, FREDERICK WILLIAM (1814-1863). English clergyman and author; enthusiastic admirer of John Henry Newman; joined the Roman Catholic Church (1845) and became superior of the House of Oratorians in London (1850). Among his theological works are *All for Jesus, The Blessed Sacrament,* and *The Precious Blood;* best known as a hymn writer; *O gift of gifts, O grace of faith; O Paradise, O Paradise; Hark, hark, my soul;* and *Sweet Saviour, bless us ere we go,* have found a place in Protestant and Catholic hymnals.

FALCONIO, DIOMEDE (1840-). Roman Catholic archbishop and Apostolic Delegate; held various positions in educational institutions in United States and Newfoundland till 1883; returned to Italy, holding high ecclesiastical offices until 1892, when he became bishop, archbishop (1895), Apostolic Delegate to Canada and the United States (1902).

FARLEY, JOHN MURPHY (1842-). American Roman Catholic prelate; secretary to Archbishop McCloskey (1872-1884); private chamberlain to Pope Leo XIII. (1884); vicar general, New York (1891); domestic prelate to Pope Leo XIII. (1892); auxiliary bishop of New York (1895); fourth archbishop (1902).

FARRAR, FREDERIC WILLIAM (1831-1903). An English clergyman, dean of Canterbury; 16 years master at Harrow; canon and archdeacon of Westminster, and chaplain to the queen.

FLEISCHER, CHARLES (1861-). Jewish rabbi Temple Adath Israel, Boston, since 1894; prominent as a lecturer; his subjects include "Democracy and Women," "Aristocracy," and "My Discovery of America."

FOURIER (*foo're-ai*), **FRANCOIS MARIE CHARLES** (1772-1837). A French social economist; at first in trade, then in the army. After seeing a cargo of rice thrown into the sea to raise its price he was led to attempt a reform abolishing the competitive system, by means of associated production and life in "phalansteries." He died in Paris.

FOWLER, CHARLES HENRY (1837-1908). Methodist Episcopal bishop. President Northwestern University (1872-1876); elected bishop (1884); visited South America, Japan, Korea, China; made a trip around the world, holding conferences; organized universities at Peking and Nankin, China, and churches at St. Petersburg, Russia; established Macloy College of Theology in southern California; delegate to many important conferences at home and abroad.

FOX, GEORGE (1624-1691). An Englishman, founder of the Society of Friends, or Quakers. When 19 years old he believed himself called to preach, and wandered about England doing so; his numerous followers gained their name Quakers in 1650, because Fox had bidden the magistrates, who frequently arrested him, "to tremble (quake) at the word of the Lord."

FRANCIS OF ASSISI, SAINT (1182-1226). Founder of the Order of the Friars Minor, or Franciscans. Born in Assisi, Italy; in business with his father until 24, when he retired to lead a life like Christ's; with 11 others he received the approval of Pope Innocent III. to form the order (1209). His rule of life consisted of 23 chapters, prescribing poverty, obedience, chastity, giving up of property, and obligation to live upon alms. The order was formally sanctioned in 1216.

FRY, (Mrs.) ELIZABETH (1780-1845) An English philanthropist; born at Earlham; third daughter of John Gurney, the Quaker banker; devoted her life to prison reform and the reform of criminals, as well as to other benevolent enterprises.

FULGENTIUS OF RUSPE, SAINT (468-533). A Latin Christian father; went to Rome (500); founded a monastery in Ruspe and became bishop of Ruspe (508).

GARRISON, WILLIAM LLOYD (1805-1879). American abolitionist; with Benjamin Lundy, published *Genius of Universal Emancipation* in Baltimore (1829); published *The Liberator* (1831-1865), demanding emancipation and extinction of slavery; riots and violence followed in attempts to suppress the abolitionists, but Garrison was not daunted though dragged through the streets by a mob; his uncompromising spirit and heroic perseverance secured the liberty he desired and he lived to be honored in Europe and America for his efforts.

GAVAZZI (*ga-vat'see*), **ALESSANDRO** (1809-1889). An Italian preacher and reformer; one of the most energetic supporters of Pius IX. in his liberal policy; afterwards withdrew his allegiance, joined the Revolution of 1848, and ultimately fled to England on the occupation of Rome by the French.

GEORGE, SAINT (flourished third century). Bishop of Alexandria; patron saint of England. To him is attributed the destruction of a terrible dragon. This legend occurs first in the *Legenda Aurea* of Jacobus de Voragine in the Middle Ages.

GIBBONS, JAMES (1834-). Roman Catholic cardinal; ordained priest (1861); pastor, secretary to Archbishop Spalding and chancellor till 1868; Vicar Apostolic of North Carolina with rank and title of bishop (1868-1872); coadjutor archbishop of Baltimore and succeeded to the See (1872-1877); invested with insignia of cardinal (1886); best known work *The Faith of Our Fathers.*

GIRARD, STEPHEN (1750-1831). An American philanthropist; born in France; died in Philadelphia.

He made a large fortune as a merchant in Philadelphia, and at his death left $5,260,000 to found a college for orphan boys, to be conducted on strictly secular principles. The building is one of the finest in the country.

GLADDEN, WASHINGTON (1836-). Congregational clergyman, author, and editor. Since 1882, pastor of First Congregational Church, Columbus, O.; noted as a writer upon social reforms; some of his books are: *Being a Christian*, *Burning Questions*, and *Social Salvation*.

GOTTSCHALK or **FULGENTIUS** (about 805-about 868). A German theological controversialist; ardent believer in predestination; denounced as a heretic, yet wandered everywhere throughout Germany preaching his doctrine; condemned at the Synod of Mainz (848) and again at the Synod at Quircy (849); was whipped and imprisoned for the rest of his life.

GOUGH, JOHN BARTHOLOMEW (1817-1886). A temperance orator; born in Kent, England, became a bookbinder; early a victim to intemperance; took the pledge in 1842, and became an eloquent and powerful advocate of the temperance cause both in England and America.

GREGORY XIII., BUONCOMPAGNI (1502-1585). A native of Bologna, who succeeded Pope Pius V. in 1572. He was deeply versed in the canon and civil law and had distinguished himself at the Council of Trent. He ornamented Rome with many fine buildings and fountains; but his pontificate is chiefly memorable for the reformation of the calendar which bore his name. He published a valuable edition of the *Decretum Gratiani*.

GREGORY NAZIANZUS, SAINT (329-390). Bishop of Constantinople; excelled all his contemporaries in pulpit eloquence. Many of his works are extant, and consist of orations, letters, and poems. His theological system is best set forth in his *Theological Orations*.

GUNSAULUS, FRANK WAKELEY (1856-). Congregational clergyman; pastor Columbus, Ohio (1879-1881); Newtonville, Mass. (1881-1885); Baltimore (1885-1887); Plymouth Church, Chicago, till 1899; Central Church, Chicago, since 1899; president Armour Institute of Technology since 1893; lecturer at Yale Theological Seminary and Chicago University. Author of much poetry and religious prose.

HALE, EDWARD EVERETT (1822-1909). Unitarian clergyman, author, and social reformer. Pastor of Church of the Unity, Worcester, Mass. (1846-1856), and of South Congregational Church, Boston (1856-1909); chaplain of U. S. Senate (1902-1909); promoted the Chautauqua movement and assisted in organizing "lend-a-hand" clubs; founder and editor of *The Christian Examiner* and *Old and New*, which were finally merged into the original *Scribner's Monthly*; best known as the organizer of the "lend-a-hand" movement and as the author of *The Man Without a Country*.

HALL, CHARLES CUTHBERT (1852-1908). President of Union Theological Seminary (1897-1908). Pastorates in Newburgh, N. Y. (1875-1887), and Brooklyn, N. Y. (1887-1897). Lecturer at Chicago, Vanderbilt, and Harvard universities. Among his works are *Christian Belief Interpreted by Christian Experience*, *Christ and the Human Race*, and others.

HARRISON, LEON (1866-). Since 1891, rabbi Temple Israel (Reformed Jewish), St. Louis; founder of sisterhood of Personal Service, St. Louis, Social Settlement League, Fresh Air Society; Lyceum and Chautauqua lecturer.

HARVARD, JOHN (1607-1638). Founder of Harvard College. An English clergyman; M.A. Cambridge (1635); pastor at Charlestown, Mass. (1637); gave library of 260 volumes and about $2,000 to the college at "New Town" (Cambridge).

HENSON, POINDEXTER SMITH (1831-). Baptist clergyman; lawyer till 1856; pastor of Fluvanna Baptist Church, Broad Street Church, Memorial Church, Philadelphia, and First Church, Chicago, till 1901, Hanson Place, Brooklyn (1901-1903), and Tremont Temple, Boston (1903-1909). Editor *Baptist Teacher*.

HICKS, ELIAS (1748-1830). An American preacher of the Quaker connection, who adopted Unitarian views and caused a split in the body.

HILARY OF POITIERS, SAINT. Bishop of Poitiers about 353; banished into Phrygia in 356 for not sanctioning the condemnation of Athanasius; permitted to return in 359; a vigorous and consistent opponent of Arianism.

HILLIS, NEWELL DWIGHT (1858-). Presbyterian minister; pastorates in Peoria, Ill. (1887-1890); Evanston, Ill. (1890-1894); Central Church, Chicago (1894-1899), and Plymouth Church, Brooklyn, since 1899. Author of *The Investment of Influence*, *A Man's Value to Society*, *Great Books as Life Teachers*, and many others.

HOPKINS, JOHNS (1795-1873). An American philanthropist; born in Anne Arundel County, Md. In 1873 he gave property worth $4,500,000 to found a free hospital. He presented Baltimore with a public park and he also gave over $3,000,000 to found the Johns Hopkins University in Baltimore.

HORR, GEORGE EDWIN (1856-). Theologian and educator; pastor at Tarrytown, N. Y. (1879-1884), and Charlestown, Mass. (1884-1891); professor of Church history at Newton Theological Seminary since 1903; editor-in-chief of the *Watchman* (1891-1903); and since, president of the Watchman Publishing Company.

HOSS, ELIJAH EMBREE (1849-). Bishop of Methodist Episcopal Church, South, since 1902; pastor at Knoxville, Tenn., San Francisco, Cal., and Asheville, N. C.; professor and president of Martha Washington College, Va. (1876-1881); vice-president and later president of Emory and Henry College (1881-1585); on theological faculty of Vanderbilt University (1885-1890); editor of Nashville *Christian Advocate* (1890-1902).

HUNTINGTON, WILLIAM EDWARDS (1844-). Methodist clergyman and president of Boston University since 1904; pastor in Boston and vicinity (1870-1882); dean of the College of Liberal Arts, Boston University (1882-1904).

HURLBUT, JESSE LYMAN (1843-). Methodist Episcopal clergyman and editor. Pastor from 1865-1879; agent of Sunday School Union, to 1884; assistant and finally editor of *Sunday School Literature* (1884-1900); pastor in New Jersey since 1901; counselor of Chautauqua Society; author of *Outline Normal Lessons*, *Studies in the Four Gospels*, and other works.

HUSS (*hoos*), **JOHANN** (1373-1415). A distinguished religious reformer; born in Bohemia; convicted of heresy by the Council of Constance, and by the secular authorities burned at the stake. His followers, called Hussites, inaugurated a war for religious freedom (1419), continued until the emperor Sigismund granted acceptable terms and peace was restored.

IGNATIUS, SAINT, surnamed **THEOPHORUS** (32?-107). Bishop of Antioch; martyred in Rome. His writings are still held in high esteem and include seven Greek letters found in the writings of the apostolic fathers. He first applied the term "eucharist" to the Lord's Supper, and in his writings we first find the phrase "the Catholic Church."

IRELAND, JOHN (1838-). Roman Catholic archbishop of St. Paul since 1888; priest (1861); rector cathedral, St. Paul; coadjutor Bishop of Saint Paul (1875), succeeded Bishop Grace (1884) with the title of archbishop (1888); important figure in movements for total abstinence, colonization in the Northwest, and the establishment of the Catholic University at Washington; author of *The Church and Modern Society*.

IRENAEUS, SAINT (flourished second century). One of the fathers of the church; was bishop of Lyons, and suffered martyrdom about 202; wrote against the Gnostics in a work in Greek, of which all but a few fragments in Latin is lost.

JANSE'NIUS, CORNELIUS (1585-1638). A Flemish theologian; founded the body of sectaries in the Roman Catholic Church known as Jansenists; made bishop of Ypres; great work is *Augustinus sive Doctrina Sancti Augustini*.

JEROME OF PRAGUE (1360?-1416). A Bohemian reformer; was in faith and sufferings the companion of the famous John Huss; was burned at the stake, and his ashes thrown into the Rhine.

JOHN OF DAMASCUS (about 700-754). A father of the church; the author of the standard text-book on dogmatic theology in the Greek Church; canonized by both the Latin and Greek churches; one of the doctors of the Latin Church; the ablest philosopher of his time; wrote three *Operations* or letters on image-worship.

JONES, JENKINS LLOYD (1843-). Independent minister, editor, and lecturer; organizer of the Abraham Lincoln Center and All Souls' Church, Chicago, Ill., of which he has been pastor since 1882; secretary of the World's Parliament of Religions; lecturer in English, university extension department of Chicago

University; editor and founder of *Unity;* author of many books on religious subjects.

JUDSON, ADONIRAM (1788-1850). An American missionary; born in Malden, Mass. In February, 1812, he sailed with his wife for Asia. During the voyage he was converted from the Congregational faith to that of the Baptist church. In 1814, when the Baptists of the United States organized a missionary union, he was taken under its care. He settled in Burma, mastered the language, and labored there for nearly forty years. He died at sea.

JUDSON, EDWARD (1844-). Baptist clergyman; professor of Latin, Madison University (1867-1874); pastor of Baptist Church, Orange, N. J. (1875-1881); Berean Baptist Church, N. Y.; later secured a site and erected a church to the memory of his father, Adoniram Judson, where he has since been pastor.

JUSTIN, surnamed **THE MARTYR** (about 100-about 165). An early Christian apologist; studied philosophy in the Stoic and Platonic schools, and was converted to Christianity; was the author of *Apologies for the Christians* and *Dialogue with Tryphon the Jew;* suffered martyrdom.

KNOX, JOHN (1505-1572). A Scotch religious reformer; pioneer of Puritanism; prisoner of war, for 19 months, in French galleys; friend of Calvin and Beza; a preacher of sermons that moved his hearers to demolish convents; arrested for treason, an armed "congregation" at his heels; burned in effigy; for years a dictator—he spent his life forwarding the Reformation in Scotland. His great work distinguished in Scottish prose was his *History of the Reformation of Religion within the Realm of Scotland.*

KOHLER, KAUFMANN (1843-). Jewish rabbi; president Hebrew Union College since 1903; elected honorary minister for life of Temple Beth-El, New York (1903); previous pastorates in Detroit (1869-1871); Chicago (1871-1879), where he introduced Sunday lectures; editor *Jewish Reformer* (1886); *Sabbath Visitor* (1881-1882); extensive writer and lecturer on Biblical topics.

KYRLE (*kurl*), **JOHN** (1637-1724). Philanthropist; born in Gloucestershire; was distinguished for his benefactions; has given name to a society founded, among other things, for the betterment of the homes of the people.

LACTAN'TIUS, LUCIUS COELIUS FIRMIANUS (290-325). The most eloquent and learned of the Christian fathers; chief works are *Divinarum Institutionum Libri VII., De Ira Dei,* and *De Mortibus Persecutorum.*

LAMPERIERE, ANNA M. J. (1854-). French social reformer, born at Lisieux, Normandy; in 1879 she became director of the Ecole Normale, having been the youngest person to receive the honor; she was delegate to the Congress of Social and Moral Reforms at Chicago in 1893, is especially interested in the advancement and social education of women, and has written much upon that and kindred topics.

LANFRANC (about 1005-1089). An Italian churchman in the medieval church in England; selected by William the Conqueror to fill the archbishopric of Canterbury (1070). After the death of the Conqueror, Lanfranc wielded a great influence over England. He wrote *Commentaries* on St. Paul, *De Corpore et Sanguine Domini,* sermons, and letters.

LASSALLE, FERDINAND (1825-1864). German socialist leader, born at Breslau; his parents were wealthy Hebrews; he was a student of philosophy, called by Humboldt "Das Wunderkind"; at the age of 33 he became an active socialist, and was repeatedly indicted for high treason; founded the Social Democratic party of Germany; was a friend of Bismarck; his death resulted from a duel fought over his fiancée, who had jilted him. Heine called this remarkable man "the Messiah of the nineteenth century." Lassalle was not a theorist, but a practical organizer, and did more for the success of labor organizations and the socialistic movements in Germany than any other man.

LATHROP, ROSE HAWTHORNE (1851-). An American poet and philanthropist; daughter of Nathaniel Hawthorne; studied and lived abroad; married George Parsons Lathrop (1871); wrote *Along the Shore* and *Memories of Hawthorne;* founded Saint Rose's Free Home for Cancer in New York (1896); took the title of Mother Mary Alphonsa and became the head of a Dominican community and director of a charitable home in New York City.

LATIMER, HUGH (about 1485-1555). An English reformer and martyr; made bishop of Worcester (1535); burned at the stake with Bishop Ridley. His *Remains and Sermons* was printed by the Parker Society (1844-1845).

LAUD, WILLIAM (1573-1645). An English prelate; archbishop of Canterbury in the reign of Charles I. His endeavors to introduce the liturgy into Scotland made him numerous enemies; therefore he was impeached by the Commons, and sent to the Tower. After lying there nearly three years he was declared guilty of treason, and was beheaded on Tower Hill. Laud enriched the University of Oxford with over 1,300 manuscripts; wrote a *Diary* and a few other works published in collected form in 1887.

LAVAL-MONTMORENCY, FRANCOIS XAVIER DE (1622-1708). French bishop, born at Laval; received the tonsure at nine years of age, becoming a priest at twenty-three and at thirty-one Archdeacon of Evreux; sent to Canada as vicar of Pope Alexander VII., with title of Bishop of Petra (1659); established Seminary of Quebec (1663); titular Bishop of Quebec (1674-1683). His name is perpetuated in Laval University, Quebec, founded in 1852.

LEE, ANN (1736-1784). Founder of the Society of Shakers in America; born in Manchester, England. She was poor and uneducated, and in 1758 joined the Shakers, a sect allied in their belief to the Friends, but who were peculiar in their form of worship. She believed herself inspired, and was imprisoned in 1770 for preaching the new doctrine of celibacy. In 1774 she emigrated to America and founded the Society of Shakers in 1776. She was greatly revered by her followers, and by them was called "Mother Ann." She died in Watervliet, N. Y..

LEVASSEUR, PIERRE EMILE (1828-). French political economist and writer, born in Paris; has belonged to the faculty of several different institutions of learning; member of numerous scientific societies; his exhaustive work, *Condition of the Working Classes in France, Before and Since the Revolution,* would alone have established him as an authority upon sociological matters.

LEVINTHAL, BERNARD LOUIS (1866-). Rabbi, United Orthodox Hebrew Congregation since 1891; founder of Hebrew Free Schools; president and founder of Hebrew Talmudic Institute; principal and founder of Hebrew High School, all of Philadelphia, Pa.

LICK, JAMES (1796-1876). An American philanthropist; born in Fredericksburg, Pa. In 1847 he emigrated to California, taking with him $30,000, which he invested in real estate in San Francisco, and its rapid advance in value made him wealthy. In 1874 he placed his entire property in the hands of trustees, to be devoted to public and charitable purposes. The total amount thus given was $13,000,000, of which $700,000 was for Lick Observatory, to be connected with the University of California; $150,000 for free public baths in San Francisco, and $540,000 for an institution to be called the California School of Mechanical Arts. He died in San Francisco, Cal.

LIDDON, HENRY PARRY (1829-1890). Canon of St. Paul's, London; eminent both as a scholar and a preacher; author of an eloquent course of lectures, the Bampton, *On the Divinity of Jesus Christ;* belonged to the Liberal section of the High-Church Party.

LINDSAY, SAMUEL McCUNE (1869-). American sociologist, born in Pittsburg, Pa.; professor of social legislation at Columbia University and director of the New York School of Philanthropy; is especially interested in educational and child labor problems and has written extensively upon these subjects; holds offices in various philanthropic and educational societies.

LIVERMORE, MARY ASHTON (RICE) (1821-1905). An American reformer and lecturer; born in Boston, Mass.; conspicuous in her efforts to promote the woman suffrage and temperance movements. Among her popular lectures are "What Shall We Do with Our Daughters?" "Women of the War," "The Moral Heroism of the Temperance Reform."

LONDON, JACK (1876-). American socialist and novelist, born in San Francisco. That he might have material for his books he became successively sailor, miner, fisherman, longshoreman, seal hunter, etc.; lived as tramp and vagabond in America and London; was frequently jailed. He was in the Klondike gold rush, and was war correspondent in Japan; has lectured frequently for the Socialist party, although he holds his own wealth for himself.

LUTHER, MARTIN (1483-1546)). Leader of the Protestant Reformation; ordained a priest (1507); professor of philosophy at Wittenberg (1508); denounced the sale of indulgences (1517); cited to appear before Leo X., he refused; burned papal bull containing order to destroy certain of his works, and denied the authority of the pope; excommunicated; enjoyed the support of the elector of Saxony; attended the Diet of Worms, convened for his trial, in 1521; laid aside his monastic dress in 1524, and married Catherine von Bora, an ex-nun, in 1525; wrote a translation of the New Testament and of the Old Testament. His most famous hymn, *Ein feste Burg ist unser Gott,* was published in 1529.

MacARTHUR MARY R. (1880-). Scotch socialist, born at Glasgow; secretary of Women's Trade Union League and the National Union of Shop Assistants and Clerks; represented the former association at the Women's International Congress in Berlin in 1904; she is the only woman member of the Executive of the London Trades' Council; is a member of the Independent Labor party; her special object is the organization of women's trades unions.

McCABE, CHARLES CARDWELL (1836-1909). A Methodist Episcopal bishop; pastor (1860-1862) in Ohio; chaplain in the army till 1866; prominent in Methodist Church extension movement and raised over a million dollars a year for missions; became bishop in 1896 and chancellor of American University at Washington, D. C., in 1902.

MACKAY, DONALD SAGE (1863-1908). Pastor of Collegiate Church, New York City (1899-1908); previous pastorates at St. Albans, Vt. (1890-1895), and Newark, N. J. (1895-1899); noted for successful work among young men; extensive contributor to religious magazines.

MALLALIEU, WILLARD FRANCIS (1828-). Methodist Episcopal bishop since 1884; pastorates in Massachusetts until 1881; presiding elder till 1884; voluminous writer for the religious press.

MALTHUS, THOMAS ROBERT (1766-1834). English economist; made a special study of population; as a result wrote *Essay on the Principle of Population as It Affects the Future Improvement of Society,* the main thought of which was that population has tended to outgrow subsistence.

MANES or **MANICHAEUS** (about 216-about 277). A religious teacher in Babylon (242). His religious system of Manichaeism was based upon the Persian dual system.

MARSHMAN, JOSHUA (1768-1837). An English missionary; born in Westbury Leigh, England; was sent in 1799 by the Baptist Missionary Society to Serampore, where he had Carey, Ward, and others as fellow laborers; translated the Bible into Chinese. He died in Serampore, India. His son, John Clark Marshman, founded the first English weekly newspaper in India.

MARX, KARL (1818-1883). A German socialist; born at Treves, of Jewish descent; was at first a student of philosophy and a disciple of Hegel, but soon abandoned philosophy for social economy; early adopted socialistic opinions, for his zeal in which he was driven from Germany and France, to settle in London, where he spent the last 30 years of his life; one of the founders of the "Internationale," and wrote a work, *Das Kapital,* which has become the text-book of Socialism.

MASSILLON, JEAN BAPTISTE (1663-1742). A distinguished French pulpit orator; called to the Church of the Oratory in Paris (1699) and preached the *Advent Sermons* before Louis XIV. at Versailles. Among his celebrated works are *Le petit carême,* a course of 10 Lenten sermons (1718), and his earlier *Advent Sermons* and *Le grand carême;* won distinction through his many brilliant funeral orations; named bishop of Clermont (1717); consecrated in 1719; academician (1719).

MATHER, COTTON (1663-1728). An American theologian and writer; author of 382 works. He believed in witchcraft and became notorious for his zeal in persecuting those against whom it was charged. Among his works are *Magnalia, Wonders of the Invisible World,* and *Essays to Do Good.*

MATHEW, THEOBALD (1790-1856). An Irish reformer; born in Thomastown, near Cashel, Ireland; was ordained in the Franciscan order. On April 10, 1838, he signed a total abstinence pledge and began a temperance crusade. He traveled over all parts of Great Britain and Ireland, and in the United States. The immediate result of his preaching was a marked decrease in crime and intoxication. Thousands of Father Mathew Total Abstinence Societies have been organized throughout the world in his honor. He died in Queenstown.

MELANCH'THON, PHILIP, or **P. SCHWARZERD** (1497-1560). An eminent German theologian and reformer; was the contemporary, friend, and the successor of Luther as the head of the German Reformation; the foremost teacher of his time; and according to Hallam "far above all others the founder of general learning throughout Europe." His writings fill 28 volumes. At 19 he published an edition of Terence that ran through 73 editions.

MENDES, FREDERIC DE SOLA (1850-). Jewish preacher in London (1873); rabbi of West End Synagogue, New York, since 1874; elected for life (1904); founded *American Hebrew* (newspaper) (1879), and was its editor till 1885; revising editor of *Jewish Encyclopedia* till 1902; author of *Jewish School Books* and *Child's First Bible.*

MENDES, HENRY PEREIRA (1852-). Jewish clergyman and educator; called 1877 to Spanish and Portuguese Congregation, New York; one of the founders and now president of New York Board of Jewish Ministers; a founder of Jewish Theological Seminary; author of *Looking Ahead* and *Jewish Religion Ethically Presented.*

MILMAN, HENRY HART (1791-1868). Dean of St. Paul's or "The Great Dean" (1849-1868); ecclesiastical historian; edited Gibbon's *Decline and Fall;* wrote *History of the Jews, History of Christianity to the Abolition of Paganism in the Roman Empire,* and *History of Latin Christianity;* professor of poetry at Oxford.

MONTEFIO'RE, SIR MOSES (1784-1885). A philanthropic Jewish banker; born in Leghorn; a friend to the emancipation not only of the oppressed among his own race, but of the slaves in all lands; lived to a great age.

MOODY, DWIGHT LYMAN (1837-1899). American evangelist. Began missionary work in 1856 in Chicago, where later a church was erected for him, though he was not ordained as a minister. In 1873, with Ira D. Sankey, he began his famous series of revivals at home and abroad. He established a seminary for young women and a training school for Christian workers at Northfield, Mass., also the Mt. Hermon School for Boys at Gill.

MOTT, LUCRETIA (1793-1880). An American reformer; born in Nantucket, Mass. In 1818 she joined the Friends. In 1833 she assisted in the formation of the American Anti-Slavery Society, and in 1840 went to London as its delegate to the World's Anti-Slavery Convention; was one of the four promoters of the Woman's Rights Convention in the United States, an active exponent of the cause of equal suffrage, temperance, and universal peace.

MUENSTERBERG, EMIL (1855-). German political economist; author; jurist; born in Danzig; finally settled in Berlin; member of numerous benevolent organizations; is especially interested in the poor laws and charitable work.

MUHLENBERG, HEINRICH MELCHIOR (1711-1787). Founder of the German Lutheran Church in America; came to America (1742) to work among the destitute Lutherans in Pennsylvania; wrote an *Autobiography.*

MURPHY, FRANCIS (1836-1907). American temperance reformer, born in Wexford, Ireland; came to the United States as a child; lectured in America and England on total abstinence; 10,000,000 people are said to have signed the pledge through his influence; chaplain in the Spanish-American War (1898).

NEWMAN, JOHN HENRY (1801-1890). English religious leader, first in Church of England, later in Roman Catholic Church; vicar of St. Mary's, Oxford (1828); published *Tracts for the Times* (1833-1841); leader in "Oxford movement"; ordained Roman Catholic priest (1846); rector of University of Dublin (1854-1858); made a cardinal (1879); writer of marked ability; poem *Dream of Gerontius* and hymn *Lead, Kindly Light,* most famous; wrote much relating to affairs of the church.

NEWTON, RICHARD HEBER (1840-). An American clergyman. In 1869 he became rector of All Souls' Church, New York. Among his works are *The Children's Church, The Morals of Trade, Womanhood, Studies of Jesus, Right and Wrong Uses of the Bible, Book of the Beginnings, Philistinism, Social Studies, Church and Creed,* and *Christian Science.*

NIGHTINGALE, FLORENCE (1820-1910). An English philanthropist; born in Florence, Italy. During the Crimean War she promptly volunteered to organize a select band of nurses at Scutari. The offer was accepted by the British War Office, and within a week Miss Nightingale was on her way to the East, where she rendered invaluable service. She was consulted during the American Civil War and the Franco-German War. She has published *Notes on Hospitals, Notes on Nursing,* and *Notes on Lying-in Institutions.*

OASTLER, RICHARD (1787-1861). English reformer, born near Huddersfield; fought for the ten-hour law in the interest of factory laborers, especially child workers; spent five years in the Fleet Prison for debts, from which place he issued a weekly journal devoted to factory and poor laws; in 1847 he won his victory, and the ten-hour bill was passed; he died in poverty.

OBERHOLTZER, SARA LOUISA (1841-). Author, economist; born in Uwchlan, Pa.; authority on school savings banks; president of numerous philanthropic societies; superintendent of the school savings banks department of the National Woman's Christian Temperance Union.

OBERLIN, JEAN FREDERIC (1740-1826). A benevolent Alsatian Lutheran pastor; labored all his life at Ban de la Roche, a wild mountain district of Alsace, and devoted himself with untiring zeal to the spiritual and material welfare of the people. Oberlin College, Ohio, was named in his honor.

OECOLAMPADIUS (*ek-o-lam-pa'di-us*), **JOANNES** (1482-1531). One of the leaders of the Reformation; born at Weinsberg, in Württemberg; became preacher at Basel; assisted Erasmus in his edition of the New Testament; entered a convent at Augsburg; came under Luther's influence and adopted the reformed doctrine.

OGLETHORPE, JAMES EDWARD (1696-1785). An English military officer and philanthropist; born in London, England. It was through his efforts that a colony was formed of insolvent debtors and persecuted Protestants, whom he brought to America and settled in Georgia in 1733. He remained in America till 1743, when he returned to England. He died in Cranham Hall, Essex, England.

OTTERBEIN, PHILIP WILLIAM (1726-1813). Founder of the Church of the United Brethren in Christ; came as missionary to America in 1752; was a powerful preacher, and started a great revival in 1766.

OWEN, ROBERT (1771-1858). Social reformer; called "the father of modern communism"; born in Newtown, North Wales; at the age of 19 he was manager of a large cotton mill in Manchester; 10 years later brought the New Lanark Mills on the Clyde, where he at once proceeded to improve the condition of the mill employees, by providing better homes and good food at cost prices; transferred children from the factory to the schools which he had established; he worked for better factory laws. Owen contended that character is formed by circumstances; tried to start several communities on the socialistic plan, but as he seemed to lack judgment and discretion they amounted to nothing.

PAINE, ROBERT TREAT (1835-1910). American philanthropist, born in Boston; although a member of the bar he retired from the practice of his profession in order to promote his benevolent enterprises; one of the founders and, since 1878, president of the Associated Charities of Boston; organizer of the Workingmen's Loan Association and many similar societies; is in favor of lower tariff and free raw material; has written extensively upon themes in which he is interested.

PALEY, WILLIAM (1743-1805). An English divine and author; in 1775 became rector of Musgrave, and in 1782 was made archdeacon of Carlisle. It is said that he would have received a bishopric had not King George III. taken offense at a paragraph on "Property" in one of his writings. The principal works of Paley are *The Principles of Moral and Political Philosophy, Horae Paulinae, A View of the Evidences of Christianity,* and *Natural Theology.*

PALMER, RAY (1808-1887). An American hymnologist; taught in New York City and at New Haven, Conn.; occupied a pastorate in Bath, Me., until 1850, and then in Albany, N. Y. Among his hymns are *Jesus, the very thought of Thee* and *My faith looks up to Thee;* the latter has been translated into twenty languages. His chief collections are *Hymns and Sacred Pieces, Hymns of My Holy Hours,* and *Voices of Hope and Gladness.*

PANKHURST, CHRISTABEL (1880-). English lawyer and woman suffragist; born in Manchester; a member of the Independent Labor party, Woman's Trade Union and other similar organizations; all of her work as a reformer is in the interests of the advancement of woman; she is the daughter of Emmeline Goulden Pankhurst.

PANKHURST, EMMELINE GOULDEN (-). English woman suffragist, interested especially in the advancement of woman; born in Manchester; member of Independent Labor party; she formed the Women's Social and Political Union.

PARKER, MATTHEW (1504-1575). Archbishop of Canterbury; born in Norwich. In 1544 he was appointed master of Corpus Christi College, Cambridge, and elected vice chancellor of Cambridge University the following year. When Queen Mary succeeded to the throne Parker was deprived of his offices, and remained in concealment till the accession of Elizabeth in 1558. By royal command he was summoned to Lambeth and appointed archbishop of Canterbury.

PARKER, THEODORE (1810-1860). American preacher, scholar, and reformer; pastor of the West Roxbury Unitarian Church (1837-1842). His sermon, *The Transient and Permanent in Christianity* (1841), ranks with Channing's *Baltimore Sermon* of 1819 and Emerson's *Divinity School Address* of 1838; published *A Discourse on Matters Pertaining to Religion, Lessons from the World of Matter and the World of Man,* and *Experiences as a Minister.*

PARKHURST, CHARLES HENRY (1842-). An American clergyman; pastor at Lenox, Mass. (1874); and of Madison Square Presbyterian Church, New York City (1880); president of the Society for the Prevention of Crime (1891); made accusations against the New York City police force which were substantiated by the Lexow Committee appointed by the Senate (1894); wrote *Forms of the Latin Verb Illustrated by the Sanskrit, The Blind Man's Creed, Pattern in the Mount, The Question of the Hour, The Fellowship of Suffering, Our Fight with Tammany, Talks to Young Men,* and *Guarding the Cross with Krupp Guns.*

PATON, JOHN BROWN (1830-). English Congregational minister, editor and writer; founder of Young Men's and Young Women's Brigade of Service, and the Boys' and Girls' League of Honor; assisted in establishing the University Extension System, president British Institute of Social Service (1904).

PATRICK, SAINT (flourished fifth century). The apostle and patron saint of Ireland; his birthplace uncertain. His mission, which extended over a great part of Ireland, was eminently successful. Various miracles are ascribed to him. After the Apostles he was among the most successful of missionaries.

PATTON, FRANCIS LANDEY (1843-). Theologian and educator; pastorates in New York and Chicago till 1881, when he became professor of theology in Princeton Seminary and of ethics in the University; president of the University (1888-1902); president of Princeton Seminary.

PAUL, SAINT (originally called Saul) (flourished first century). The great Apostle of the Gentiles; born at Tarsus, in Cilicia; by birth a Jew and a Roman citizen. He did more for the extension, if not the exposition, of the Christian faith at its first promulgation than any of the Apostles, and perhaps all of them together, and it is questionable if but for him it would have become, as it has become, the professed religion of the most civilized section of the world.

PEABODY, GEORGE (1795-1869). Philanthropist; born at Danvers, now Peabody, Mass.; made a large fortune as a dry goods merchant in Baltimore and as a stockbroker in London; gave away for benevolent purposes in his lifetime more than $8,000,000; died in London.

PEASE, EDWARD R. (1857-). English socialist and political economist, born at Bristol; general secretary of Fabian Society; secretary of the National Labor Federation, and actively engaged in all plans for labor reform; founder of the London School of Economics and the British Library of Political Science.

PERIN, HENRI XAVIER CHARLES (1815-). Belgian Christian socialist and economist, born at Mons; held the chair of political economy and law in the Catholic University at Louvain for 37 years, when he retired, as professor emeritus (1881). Perin bases his hopes for the success of an ideal society upon the moral influence of the church.

PEROVSKAYA, SOPHIA (1854-1881). Russian revolutionist; born an aristocrat; ran away from home to take up the work of socialism, and became a nihil-

ist; suffered imprisonment and exile; was actively interested in the most desperate of the terrorist enterprises, including the assassination of the Czar in 1881, which she directed, and for which she, with four others, was hanged. In person she was beautiful, winning, and lovable.

PETER (-64?). The Greek surname of an apostle of Jesus. Peter's real name was Simon, his father's Jonas, his brother's Andrew. Peter was of an impulsive temperament, generous, but too forward in speech and rash in action. After the Ascension, he was for a time the most prominent of the Apostles. Tradition makes him die as a martyr at Rome, crucified with his head downward. Roman Catholics claim him as the first bishop of Rome, and consider that the authority delegated him by Jesus appertains also to his successors, the popes of Rome.

PHILLIPS, WENDELL (1811-1884). Slavery abolitionist and emancipationist generally; born at Boston, Mass., and bred to the bar; was Garrison's aid-de-camp in the cause, and chief after his death.

PINGREE, HAZEN S. (1842-1901). American municipal reformer, born in Denmark, Me.; served in the Civil War and was six months in Andersonville prison (1864); afterwards started a shoe factory in Detroit, having previously been employed in a shoe factory; was mayor of Detroit (1890-1896), and threw himself into the work of fighting political corruption; was the advocate of municipal ownership of street railways, free water, the eight-hour law, and other reforms; he secured a reduction in the price of gas; in 1896 he became the Republican governor of Michigan.

PIUS IX. (GIOVANNI MARIA MASTAI FERRETTI) (1792-1878). Chosen to the pontificate (1846). During his incumbency the dogmas of the immaculate conception and of papal infallibility were promulgated, temporal power overthrown (1870), and the papal states annexed to Italy.

POLAK, HENRI (1868-). Dutch socialist, born in Amsterdam; president of the Diamond Workers' Union; member of the Social Democratic Federation of Holland and other similar organizations; one of the founders of Social Democratic Labor party, and secretary of the 1894 strike committee; he reduced the hours of labor from 12 and 15 hours a day to seven and nine, and increased the wages two, three, and four fold; owing to Polak's efforts the diamond cutters are the best paid workmen in Europe.

POLYCARP, SAINT (69-155). Bishop of Smyrna; martyr.

POTTER, HENRY CODMAN (1834-1909). Protestant Episcopal bishop of New York since 1887. Pastorates: Christ Church, Greensburg, Pa. (1857-1858); St. John's, Troy (1859-1866); assistant Trinity Church, Boston; rector of Grace Church, New York, till 1887. Author of *Thirty Years Reviewed, The Church and Her Children, The Religion of To-day,* and many other works.

POWDERLY, TERENCE VINCENT (1849-). American labor reformer; writer; born in Carbondale, Pa.; was formerly general master workman of the Knights of Labor; in 1869 he removed to Scranton, Pa., and soon after became president of the Machinists' and Blacksmiths' Union; mayor of Scranton, representing the labor party (1878, 1880, and 1882); in 1901 he was admitted to the bar of the United States Supreme Court. In both of the McKinley campaigns he made a tour of several states, delivering political speeches for the Republican candidates; has been the chief of division of information in Bureau of Immigration and Naturalization at Washington since 1907. In 1890 he published *Thirty Years of Labor,* covering the period between 1859 and 1889.

PROUDHON, PIERRE JOSEPH (1809-1865). French philosophical anarchist; writer; born at Besançon; he was reared in poverty, but through his own efforts acquired an education; spent three years in prison, and was at other times threatened with imprisonment.

PUSEY, EDWARD BOUVERIE (1800-1882). An English theological writer; a leader of the Anglo-Catholic party in the Established Church; published revolutionary sermons which resulted in his suspension for three years. Of his larger works the most important are *The Doctrine of the Real Presence* and *The Real Presence of the Body and Blood of Christ the Doctrine of the English Church.*

QUELCH, HENRY (1858-), English socialist, editor, and author; born in Hungerford, Berkshire; organizer of the South Side Labor Protection League; has been prosecuted for his connection with strikes and labor agitation; member of Social Democratic Federation in England; editor of *Justice.*

RAIFFEISEN, FRIEDRICH WILHELM (1818-1888). German economist, born in Hamin; devoted himself to the establishment of coöperative savings and loan associations in the country districts of Germany, to save the peasants from the clutches of usurers; was mayor successively in several small towns.

REYNOLDS, JAMES BRONSON (1861-). American social reformer; born at Kiantone, New York; educated in the leading universities of America and Europe; head worker in the New York University settlement; member of the State Tenement House Commission; afterward special adviser to President Roosevelt on Washington municipal affairs; member of the commission to investigate the Chicago stock yards.

RICHMOND, LEGH (1772-1827). An English divine and religious writer; took an active part in the reforms of his day; is best known to history as the author of a number of popular tracts under the title, *Annals of the Poor.* His *Dairyman's Daughter* had reached, within 20 years after his death, a circulation of 4,000,000 copies in 19 languages. He edited a series of *Fathers of the English Church* (1807-1812).

ROBERTSON, FREDERICK WILLIAM (1816-1853). A distinguished English preacher; curate at Winchester, at Cheltenham, and Brighton; is widely known for his printed sermons, and his earnestness in behalf of Christian truth.

ROGERS, AMES EDWIN THOROLD (1823-1890). English economist, historian; born in Hampshire; was professor of political economy at Oxford; devoted himself to historical research on economic subjects; his greatest work, "History of Agriculture and Prices," necessitated 20 years of patient study among all kinds of old records.

RUSH, BENJAMIN (1746-1813). American abolitionist, born near Philadelphia; physician; one of the signers of the Declaration of Independence, surgeon general in the army; started the first dispensary of the United States in Philadelphia; during the yellow fever scourge in 1793 Rush was said to have saved the lives of 6,000 Philadelphians, in recognition of which he was the recipient of many honors from both Europe and America; president of many moral and religious societies; Rush Medical Institute of Chicago is named for him.

RUSSELL, HOWARD H. (1855-). American clergyman; temperance reformer; born in Stillwater, Minn.; founder of the anti-saloon league; league superintendent in New York State; Russell believes that the reforming power of the world lies in the Church and the Gospel. The anti-saloon league is spreading throughout the country, and now raises and expends about $400,000 a year.

SANKEY, IRA DAVID (1840-1908). An American evangelist; associated with the late Dwight L. Moody for some years, attracting and holding the attention of great audiences by singing hymns composed by himself, which are published as *Gospel Hymns, Sacred Songs,* and *Sacred Songs and Solos.*

SAVAGE, MINOT JUDSON (1841-). Unitarian clergyman; Congregational pastor from 1864-1873; Unitarian pastorates in Chicago; Church of the Unity, Boston (1874-1896); Church of the Messiah, New York (1896-1906). A voluminous writer on ethical topics as well as editor.

SAVONAROLA, GIROLAMO (1452-1497). Famous Italian religious and political reformer of noble birth, a member of the Dominican order; by his intense religious zeal and powerful oratory became a prophet to his followers. Political disturbances within Italy followed by French invasion resulted in its control by Savonarola and his party, who aimed to establish a Christian commonwealth. Through too high a standard and his attacks upon the pope, he was forbidden to preach; was imprisoned and tried for heresy and sedition; finally hanged and his body burned. His numerous writings include sermons, poems, religious and political essays.

SCHLEIERMACHER, FRIEDRICH DANIEL (1768-1834). A German theologian; took orders (1794); professor of theology at Halle (1804-1806) and Berlin (1810-1834); pastor of Trinity Church, Berlin. His productions include lectures and essays on church history, philosophy, psychology, politics, and theology. His books are *Reden über die Religion an die Gebildeten unter ihren Verächtern, Monologen, Translation of Plato,* and *Grundlinien einer Kritik der bisherigen Sittenlehre.*

SCHWARTZ, BERTHOLD (1300-1369). A German monk; is said to have discovered gunpowder.

SCOTT, ROSE (1847-). English woman suffragist; lecturer; born in Glendon. Active in many movements for the advancement and benefit of women.

SCUDDER, VIDA DUTTON (1861-). Author; professor at Wellesley College; born in southern India; was one of the prime movers in the establishment of the first college settlements; her special care is for the immigrant Italians, among whom she has done much educational work.

SEBASTIAN, SAINT. A Roman soldier at Narbonne, and martyred under Diocletian when it was discovered he was a Christian; is depicted in art bound naked to a tree and pierced with arrows; and sometimes, with arrows in his hand, offering them to heaven on his knees, he having been first shot with arrows and then beaten to death.

SELIGMAN, EDWIN ROBERT ANDERSON (1861-). Professor of political economy at Columbia University; president of the American Economic Association, Tenement House Building Company, and the Bureau of Municipal Research; editor and author.

SERVE'TUS, MICHAEL (1509-1553). A Spanish theologian; martyred through the intolerance of Calvin.

SHELDON, CHARLES MONROE (1857-). An American clergyman; pastor of the Central Congregational Church at Topeka, Kansas (1889); conducted a Topeka daily newspaper for one week in accordance with his views of Christian daily living (1900); wrote *Robert Hardy's Seven Days, The Crucifixion of Philip Strong, His Brother's Keeper,* and *In His Steps.*

SHEPARD, THOMAS (1605-1649). English Puritan divine; silenced for non-conformity, he went to Boston (1635); pastor at Cambridge, where he took active part in founding Harvard College and in Indian missionary work.

SIMPSON, ALBERT B. (1846-). Canadian clergyman, founder of the Christian Alliance (1887); incorporated with the International Missionary Alliance (1897) under the name, Christian and Missionary Alliance, of which he is president and superintendent; equipped hundreds of foreign missionaries and maintains a missionary training institute; pastor of Gospel Tabernacle in New York City.

SINCLAIR, UPTON (1878-). American author; socialist, born at Baltimore, Md. His book, *The Jungle,* which made him famous, exposed the conditions of the packing house industries, and created such a sensation that President Roosevelt ordered an investigation, which resulted in a reform in the meat inspection laws.

SMITH, ALEXANDER COKE (1849-). Bishop of Methodist Episcopal Church, South. A clergyman from 1872 to 1886; became professor of mental and moral philosophy at Wofford College, S. C.; professor of theology at Vanderbilt (1890-1892); returned to pastoral duties and was elected bishop in 1902. Author of *The Teacher's Meeting* and contributor to various church publications.

SMITH, CHARLES SPRAGUE (1853-1910). American municipal reformer; educator, lecturer, and writer; born in Andover, Mass.; director and founder of the People's Institute, New York City. While supporting government monopoly theories, he insisted that such institution be gradually brought about.

SMITH, JOSEPH FIELDING (1838-). President of the Church of Jesus Christ of Latter Day Saints since 1901, having been connected with this church as missionary, apostle, and counselor since 1854; has been a strong factor in the political life of Utah; editor of *Juvenile Instructor* and *Improvement Era.*

SOCINUS, or **SOZZINI.** Two Italians, founders of Socinianism, and the precursors of the modern Unitarians. **Lelio** (1525-1562) studied Greek, Hebrew, and Arabic, to understand better the Scriptures; he visited several countries, meeting other liberal leaders, including Calvin. Part of his writings were published, which fell into the hands of his nephew, **Fausto** (1539-1604), who became their champion. He went to Poland, but was banished; wrote several controversial works and an explanation of Socinian theology.

SOLLY, HENRY (1813-). Unitarian clergyman (1840); feeling need of social intercourse among workmen, he set himself the task of establishing clubs; traversed entire country to further his idea; formed nearly 3,000 clubs with almost a million members.

SOMERSET, LADY HENRY (1851-). President of the British Woman's Temperance Association; philanthropist; born in London; upon the death of her husband in 1884 she renounced society and devoted herself to the welfare of her tenants, numbering over 100,000; took an active part in the temperance movements in both England and America. In collaboration with Frances E. Willard, she organized the World's Woman's Christian Temperance Union, which unites the cause of temperance with that of social purity and woman's suffrage; is editor of *The Woman's Signal,* the leading woman's paper in England, voicing the cause of reform and philanthropy.

SPALDING, JOHN LANCASTER (1840-). Roman Catholic bishop of Peoria (1877-1908); built St. Augustine's Church for Catholic negroes of Louisville (1869); secretary and chancellor diocese of Louisville (1871); of New York (1872-1877); appointed in 1902 by the president arbitrator in coal strike; author of many essays and reviews upon social, educational, and ethical questions, also poetry of a high order.

SPARGO, JOHN (1870-). English socialist and reformer; born in Stithians, Cornwall; settlement worker, author, and lecturer; removed to America in 1901 where he now lives, at Yonkers, N. Y.

SPURGEON, CHARLES HADDON (1834-1892). An English preacher. His followers built for him his well known "Tabernacle" in Newington Butts in 1861. Spurgeon preached in the Tabernacle every Sunday to thousands of hearers. His sermons were published weekly from 1854, and yearly volumes were issued from 1856. They had an enormous circulation, many of them being translated into various languages.

STANFORD, JANE LATHROP (1825-1905). An American philanthropist; born in Albany, N. Y.; the wife of Leland Stanford, founder of the Leland Stanford Junior University. She built and endowed the Children's Hospital in Albany, N. Y., at a cost of $200,000; gave $160,000 to the kindergartens in San Francisco, Cal., and after the death of her husband in 1893 devoted herself to the development and support of the Leland Stanford Junior University. In 1901 she supplemented her gifts to the university by turning over to its trustees stocks valued at $18,000,000, her residence in San Francisco, valued at $400,000, for a museum and art gallery, and 1,000,000 acres of land worth $12,000,000. These gifts swelled the endowment of the university to more than $45,000,000, making it the most richly endowed educational institution in the world.

STANFORD, LELAND (1824-1893). An American lawyer and philanthropist; born in Watervliet, Albany County, N. Y. In 1852 he went to California, where he engaged in mining, but in 1856 removed to San Francisco and there engaged in business, laying the foundation of a fortune estimated at more than $50,000,000. He was elected president of the Central Pacific Railroad in 1861; was governor of California (1861-1863); and in 1885 was elected to the United States Senate. In memory of a deceased son, Leland Stanford, Jr., he gave $20,000,000 for the founding of Leland Stanford University at Palo Alto, Cal. He died in Palo Alto.

STANLEY, ARTHUR PENRHYN (1815-1881). Widely known as Dean Stanley; an English scholar and divine; professor of ecclesiastical history in Oxford, and published lectures on the Eastern Church, the Jewish Church, the Athanasian Creed, and the Church of Scotland; accompanied the Prince of Wales to the East in 1862, and became dean of Westminster (1864); wrote *Historical Monuments of Westminster Abbey* and *Christian Institutions.*

STANTON, ELIZABETH CADY (1815-1902). An American reformer; born in Johnstown, N. Y.; called the first Woman's Rights Convention in Seneca Falls, N. Y., in 1848, and was an unsuccessful candidate for Congress in 1868. She was the author of *The History of Woman Suffrage* and other works.

STEAD, WILLIAM THOMAS (1849-). English editor and reformer; spent three months in jail for a technical breach of the law committed in order to change the age of consent from 13 to 16 years; is a free trader, with a leaning toward socialism; voluminous writer; author; editor of the *Review of Reviews.*

STELZLE, CHARLES (1869-). American Presbyterian clergyman and sociologist; studied industrial problems in machine shops; pastor till 1902; since superintendent of church and labor department for Presbyterian churches in the United States; author of numerous articles and volumes on social problems.

STEPNIAC, SERGIUS MICHAEL DROGOMANOFF (1852-1895). Russian radical; advocate and worker for political and social reforms; removed to London in 1884.

STEVENS, LILLIAN M. M. (1844-). President National Woman's Christian Temperance Union; born in Dover, Me.; is the advocate of total abstinence, and the same standard of purity for both men and women; contends that other reforms would result from national prohibition of the liquor traffic.

STOKES, JAMES GRAHAM PHELPS (1872-). Capitalist, publicist; born in New York; received a thorough scientific education; married Rose Pastor, a social worker (1905); president Woodbridge Company, Haynes Company, Nevada Company, Nevada Central Railroad Company; member of New York Association for Improving Condition of the Poor, New York Prison Association, and is treasurer of numerous social societies and financial enterprises; member Squadron A, National Guard State of New York (1896-1901).

STONE, LUCY (MRS. BLACKWELL) (1818-1893). An American reformer; born in West Brookfield, Mass. She was graduated at Oberlin College in 1847. She published a protest, *Taxation Without Representation*. In 1869 she helped organize the American Woman's Suffrage Association. Her lectures on woman suffrage made her known throughout the country. She died in Boston.

SUTHERLAND, LADY MILLICENT FANNY ST. CLAIR-ERSKINE (1869-). Economic and industrial reformer; influenced Parliament to appoint a commission to investigate the lead poisoning conditions among the pottery workers. President of many philanthropic societies; author of several books.

SUTTNER, BERTHA, BARONESS VON (1843-). Founder and president of the Austrian Society of Peace; author of numerous books; devoted to the cause of peace.

SWEDENBORG, EMANUEL (1688-1772). A Swedish theosophist. In his theosophy the central point is the correspondence of the natural and the supernatural; founder of the sect known as the Swedenborgians or the Church of the New Jerusalem. All of his works were written in Latin.

TACHE (*ta-shay'*), **ALEXANDRE ANTOINE** (1823-1894). A Canadian Catholic archbishop; joined the Order of the Oblate Fathers and conducted mission work in Northwest Canada among the Indians; archbishop of Saint Boniface (1871); founded the Saint Boniface Theological College; wrote *Vingt années de missions dans le nord-ouest l'Amérique and Esquisses sur le nord-ouest de l'Amérique*, which in its English translation is a most valuable work of reference on that region.

TAIT, ARCHIBALD CAMPBELL (1811-1882). Archbishop of Canterbury; in 1842 succeeded Dr. Arnold at Rugby; dean of Carlisle (1849); bishop of London (1856); primate of England (1869).

TALMAGE, THOMAS DE WITT (1832-1902). An American clergyman; pastor of the Central Presbyterian Church in Brooklyn, N. Y. (1869-1894); afterward associate pastor of the First Presbyterian Church in Washington, D. C.; editor of the *Christian Herald*, and author of *Crumbs Swept Up; Woman: Her Powers and Privileges, From Manger to Throne, Every-Day Religion*, etc.

TAYLOR, JEREMY (1613-1667). An English prelate and author; "the modern Chrysostom"; in 1638 rector of Uppingham in Rutlandshire. In the civil war Taylor took the royal side, and so lost all his preferments. For many years he lived in retirement in Wales, busily engaged in writing books. In 1658 he went to Ireland; immediately after the Restoration bishop of Down and Connor, also that of Dromore till his death; wrote *Episcopacy Asserted, The Liberty of Prophesying, Life of Christ, Holy Living*, and *Holy Dying*.

TCHAYKOVSKY, N. W. (1851-). Russian revolutionist; openly advocated the cause of the people; has followed a variety of occupations in order to study people, and has traveled widely to learn the free countries; has written much upon the industrial conditions in Russia.

THERESA, SAINT (1515-1582). A Spanish Carmelite nun; eminent for learning and piety; founder of a reformed society of barefooted members of that order; canonized by Pope Gregory XV.

TINGLEY, (Mrs.) KATHERINE. Born at Newburyport, Mass.; appointed successor of Mme. P. Blavatsky and William Q. Judge in the "Universal Brotherhood and Theosophical Society" movement; head of the "Raja Yoga" schools of Point Loma, San Diego, and San Francisco, California, and the Brotherhood schools of England and Cuba; long engaged in philanthropic work, embracing East Side mission movements in New York, relief corps work in the Spanish War, emergency hospital work for sick soldiers at Montauk Point, and charitable work in Havana; first to make complete educational exposition of the idea of "theosophy in practice," upholding to the young the theosophic principles of "Karma," the all-pervading law of relentless justice, and the figure of Christ as one of the most important of the world's great teachers; at present engaged in establishing an eastern replica of the Point Loma institution at Newburyport, occupying the site of the historic "Lord" Timothy Dexter mansion; financial support for the movement is obtained by voluntary contributions. Her society is understood to be distinct from and unaffiliated with "The Theosophical Society," whose head is Mrs. Annie Besant, and the headquarters of which is at Adyar, Madras, India.

TOME, JACOB (1810-1898). An American philanthropist; born in Manheim township, York County, Pa.; went to Port Deposit, Md., in 1833. In 1884 he presented to Dickinson College a valuable building for scientific uses. His largest gift was for the foundation of the Jacob Tome Institute, at Port Deposit, $1,600,000, a sum that was increased by his will to more than $3,500,000. He died in Port Deposit, Md.

TRUEBLOOD, BENJAMIN FRANKLIN (1847-). General secretary of the American Peace Society since 1892; editor of the *Advocate of Peace;* in 1899 attended The Hague Peace Conference; holds radical views on the subject of peace, woman suffrage, temperance, and the municipal ownership of street railways; a prominent lecturer and writer on international subjects.

TUCKWELL, GERTRUDE M. (1862-). English Christian socialist; trade unionist; chairman of the Women's Trade Union League; born in Oxford; her father, Rev. William Tuckwell, known as "the radical parson," has a reputation throughout England for his strong views on labor, land, naturalization, etc.; Miss Tuckwell has written extensively upon industrial subjects.

TYSON, ROBERT (1845-). English political economist and social reformer; born in Canterbury; removed to Toronto, Canada, in 1870; worked in a machine shop as a boy; has worked vigorously in the cause of single tax, then for direct legislation and proportional representation; is the advocate of electoral reform; newspaper reporter and editor; writer.

ULFILAS (*ul'fi-las*) (about 311-about 381). The apostle and bishop of the Goths; labored among the Goths for over 30 years; preached and wrote in Greek, Latin, and Gothic; his translation of the Bible into Gothic is the beginning of all German literature; he omitted the books of Samuel and Kings, for he considered that they were too vivid a picture of war to present to his fierce countrymen.

URSULA, SAINT. A traditionary virgin martyr; reputed daughter of a British prince, who, with 11,000 other virgins, suffered cruel martyrdom at Cologne in the third or fourth century.

VAIL, CHARLES HENRY (1866-). Economic writer; pastor of Pullman Memorial Church, Albion, New York; is the advocate of national ownership of railways, collective ownership of means of production and distribution.

VERRIJN, STUART COENRAAD ALEXANDER (1865-). Professor of economics and industrial law at the Academy of Technology, Delft, Holland; born at Ueesp. A liberal in politics, he claims that social reform can come only through mental and moral improvement of the individual, not through the interference of the state.

VINCENT DE PAUL, SAINT (1576-1660). An eminent French philanthropist and reformer; canonized by Pope Clement XII. (1737). He organized the Congregation of Missions and founded the order of Sisters of Charity.

VINCENT, JOHN HEYL (1832-). Since 1900 bishop of Methodist Episcopal Church, and since 1878 chancellor of the Chautauqua system, of which he was a founder in 1874. Previously he had been pastor eight years and connected with Sunday school work and publications nine years. He is preacher to Harvard, Yale, Cornell, and other colleges. Author of many books relating to Sunday school work and Bible teaching.

WALD, LILLIAN D. (1866-). Social reformer; writer; born in Cincinnati, Ohio; active in trades union work; member of the Women's Trade Union League; social settlement worker; interested in

the child labor movement; identified with many philanthropic and reform movements in New York City.

WARBURTON, WILLIAM (1698-1779). An English divine; bishop of Gloucester; author of the famous *Divine Legation of Moses.*

WARREN, JOSIAH (1799-1874). Philosophical anarchist; born near Boston; was associated with Robert Owen in the New Harmony community; individualist; believed that cost was the true standard of price; started an experimental store to exemplify his principles; founded communities which did not prosper.

WARWICK, FRANCES EVELYN, COUNTESS OF (1861-). Socialist and philanthropist; president of many philanthropic societies; founder of a home for crippled children and various schools; one of the poor law guardians; established a system for nursing the sick and caring for the needy.

WATSON, THOMAS E. (1856-). Ex-populist congressman; journalist; born in Columbia, Ga.; secured the appropriation for rural free delivery; people's party presidential candidate (1904).

WATTS, ISAAC (1674-1748). An English hymnologist; wrote *Hymns and Spiritual Songs, Divine and Moral Songs for the Use of Children, A Manual of Logic,* several volumes of *Sermons.*

WAXWEILER, EMILE (186 -). Economist, born in Belgium; director of the Solvay Sociological Institute, Brussels; lecturer on sociology and political economy.

WAYLAND, JULIUS A. (1854-). Socialist; publisher of *The Appeal to Reason* in Girard, Kansas; believes in common ownership of all means of production and distribution.

WEBB, BEATRICE (1858-). Writer; economist; daughter of Richard Potter, for a time president of the Grand Trunk Railroad; student of working class life in English cities, especially the sweat shop system; member of Fabian Society, and the Royal Commission on the Poor Law.

WEITLING, WILHELM (1808-1871). Pioneer German socialist, an earnest advocate of extreme communism.

WELLS, DAVID AMES (1828-1898). Economist; writer; born at Springfield, Mass.; was university lecturer on political economy at Yale College; advocate of free trade, civil service reform, etc.

WESLEY, JOHN (1703-1791). Founder of the sect called Wesleyans or Methodists; went with General Oglethorpe to Savannah, Ga., in 1735, where he established the first American Sunday school. His first hymn book was published at Charleston (1737); spent three months with the Moravians in Germany (1738); organized his religious system of Methodism; his literary works are principally hymns.

WHATELY, RICHARD (1787-1863). Economist; born in London; well known for his *Lectures on Political Economy* published in 1831; active in carrying out the principles of the Roman Catholic Relief Act.

WHITEFIELD, GEORGE (1714-1770). An English clergyman; a friend of Charles Wesley; ordained in 1736; preached with great effect, and in 1737 visited America; returned to England; held outdoor meetings and gathered immense crowds. He made seven voyages to America, preaching throughout the colonies with such power that he was called "the wonder of the age."

WICLIF, JOHN (about 1320-1384). An English patriot and reformer; in 1360 became master of Balliol College, and for a while was royal chaplain; translated the Bible into English; was repeatedly arraigned for heresy, and finally prohibited from teaching in the University; retired to his rectory of Lutterworth. His buried remains, by order of the rival pope, Clement VIII., were disinterred, burned, and the ashes cast into the Swift, a branch of the Avon River.

WILBERFORCE, WILLIAM (1759-1833). Founder of the English anti-slavery society; born at Hull, England; member of the House of Commons; framed the abolition of slavery bill which was passed one month after his death; was interested in many other reforms and philanthropies.

WILLARD, FRANCES ELIZABETH (1839-1898). An American temperance reformer; born in Churchville, near Rochester, N. Y. After some years spent in teaching she became professor of esthetics in the Northwestern University, and was made dean of the Woman's College in February, 1871. She began her active temperance work in 1874, and was made secretary of the National Woman's Christian Temperance Union. In 1879 she was made president of that organization and held the office till her death. She was chosen as president of the World's Christian Temperance Union in 1888, and in 1892 visited England as the guest of Lady Henry Somerset, the well known temperance worker. She was an orator of great eloquence, humor, and power. Her executive ability and genius for organization were wonderful, and her work for temperance and social purity will live in the history of her country. She died in New York City.

WILLIAMS, TALCOTT (1849-). Journalist; economist; born in Turkey; he declares himself in favor of free contract, free competition, and free labor, as he believes this régime to tend toward the distribution of wealth, and to result in the greatest good to the greatest number.

WISEMAN, NICHOLAS PATRICK STEPHEN (1802-1865). An English Roman Catholic prelate; ordained to the priesthood in 1825; made professor of oriental languages in the University, and rector of the English College of Rome until 1835, when he returned to England, where he became noted as a preacher and lecturer; created by the pope a bishop *in partibus* (1840); made vicar apostolic of the London district (1849); and in 1850 Roman Catholic archbishop of Westminster and a cardinal. His principal works are *Lectures on the Connection between Science and Revealed Religion, The Real Presence, Lectures on the Catholic Hierarchy, Recollections of the Last Four Popes,* and *Sermons on Our Lord Jesus Christ and His Blessed Mother.*

WOLFF, HENRY WILLIAM (1840-). English social reformer, born at Leeds; founder and chairman of the International Coöperative Alliance, prolific writer; believes in reform by means of self-help, moral and educational influences, and the breaking down of class distinctions.

WOODRUFF, CLINTON ROGERS (1868-). Municipal reformer; secretary of the National Municipal League; born in Philadelphia.

WOODS, ROBERT ARCHEY (1865-). Social reformer; founder and head of the South End House, Boston; interested also in many other movements for the betterment of human conditions, social, industrial, and educational.

WOOLLEY, JOHN GRANVILLE (1850-). Temperance reformer; born in Collinsville, Ohio; believes that all reform hinges upon temperance reform, and that the temperance question is the most important in practical politics.

WOOLMAN, JOHN (1720-1772). Philanthropist; abolitionist; Quaker; began by teaching the neglected children of the poor; his journal has been published with an introduction by Whittier; he died of smallpox in England.

YALE, ELIHU (1648-1721). An Anglo-American philanthropist; went to the East Indies as a trader (1672), and acquired great wealth. From 1687 to 1692 he was governor at Fort St. George, Madras. He gave to the Saybrook Collegiate School books and money valued at $4,000, a gift which resulted in the connection of his name with the college after its removal to New Haven.

YOUNG, BRIGHAM (1801-1877). Second president of the Mormon Church or Church of Jesus Christ of the Latter Day Saints, and founder of the state of Utah. He was active in promoting agriculture; founded the University of Deseret and other schools; was interested in the construction of railroads and the prime mover in building the celebrated Mormon Temple. He displayed remarkable efficiency in organizing and consolidating the Mormon Church.

ZIN'ZENDORF, NIKOLAUS LUDWIG VON, COUNT (1700-1760). A German count; established the religious community of Herrnhut on his estate in Saxony, consisting chiefly of a body of Moravian brethren who had been driven out of Bohemia and Moravia, called Herrnhuters, of which he became one of the leaders and chief apostles; author of more than 100 works in prose and verse.

ZOROASTER, ZARATHUS'TRA or **ZER'DUSHT** (660-583 B. C.). The founder or reformer of the Parsee religion. Though certainly a historical personage, nothing whatever is known except that his family name was Spitama, that he was born in Bactria, and that he could not have flourished later than 580 B. C.

ZUEBLIN, CHARLES (1866-). Lecturer; writer; member of London Fabian Society; professor of sociology at the University of Chicago; born at Pendleton, Indiana; especially interested in municipal sociology in American cities.

RELIGIOUS STATISTICS OF THE WORLD.

	Buddhists.	Greek Catholics.	Roman Catholics.	Jews.	Mohammedans.	Protestants.	Animists, Fetichists, etc.	Confucianists and Taoists.	Hindus.
Abyssinia (*a*)	....	....	2,000	60,000	50,000	....	300,000	....	....
Afghanistan	....	....	....	....	4,000,000	....	160,000	....	....
Argentine Republic	....	...	4,660,000	17,000	....	50,000	....	....	....
Austria	....	3,761,000	20,655,000	1,225,000	....	500,000	....	....	....
Belgium	....	....	6,675,000	4,000	....	10,000	....	....	....
Bolivia	....	....	1,700,000	....	....	3,000	....	....	....
Brazil	....	....	14,179,615	2,000	....	143,743	....	....	....
British Empire									
England and Wales	....	....	2,130,000	196,000	....	31,425,000	....	....	....
Scotland	....	....	410,000	6,000	....	4,124,000	....	....	....
Ireland	....	....	3,308,661	3,898	....	1,160,000	....	....	....
Ceylon	2,140,000	....	283,000	....	248,000	75,000	4,000	....	828,000
India	9,447,000	....	1,595,000	18,000	62,458,000	1,078,000	8,584,000	...	207,146,000
Straits Settlements, Federated Malay States	180,000	....	20,000	....	490,000	3,000	37,000	402,000	109,000
Basutoland	....	....	10,000	....	....	38,000	300,000	....	....
Cape of Good Hope	....	....	37,069	19,537	22,623	1,305,453	....	....	....
Uganda Protectorate	....	....	46,000	....	200,000	260,000	3,480,000	....	....
Mauritius	....	....	113,000	....	41,000	7,000	....	3,000	206,000
Natal	4,000	....	21,000	....	14,000	72,000	948,000	8,000	30,000
Orange River Colony	....	....	16,000	....	....	98,000	231,000	3,000	2,000
The Transvaal	5,000	....	34,000	10,000	....	256,000	1,033,000	12,000	....
Nigeria	....	....	18,000	....	10,000,000	7,000	14,975,000	....	....
W. African Colonies									
Gold Coast	....	....	6,000	....	32,000	35,000	1,412,000	....	....
Sierra Leone	....	....	5,000	....	18,000	48,000	1,005,000	....	....
Gambia	....	....	4,000	....	35,000	2,000	50,000	....	....
Canada	....	....	2,230,000	....	....	3,083,000	....	....	....
Newfoundland, Labrador	....	....	76,000	....	....	135,893	....	....	....
West Indies									
Barbados	....	....	816	21	....	171,000	....	....	....
Trinidad	....	....	89,213	....	....	74,920	....	....	....
Australia	4,000	....	964,000	17,000	3,000	3,424,000	40,000	31,000	1,000
New Zealand	....	....	127,227	1,867	....	719,087	....	....	....
Fiji	....	....	9,000	....	....	92,000	17,000	....	....
Chile	....	....	3,044,000	....	....	7,000	....	....	....
China	83,000,000	....	1,000,000	20,000	33,000,000	150,000	....	284,000,000	....
Colombia	....	....	3,664,500	....	....	500	....	....	....
Costa Rica	....	....	Recog. by State	....	....	3,021	....	....	....
Cuba	....	....	Prevail. relig.	....	....	3,774	....	....	....
Denmark	....	106	5,373	3,476	....	2,436,084	....	....	....
Ecuador	....	....	1,200,000	....	....	1,000	....	....	....
France	....	....	35,387,000	49,000	....	580,000	....	....	....
Algeria	....	....	527,000	57,000	4,100,000	31,000	499,000	....	....
Madagascar	....	....	79,000	...	6,000	438,000	1,975,000	....	....
Tunis	....	400	35,000	60,000	1,718,000	1,000	....	....	....
German Empire	....	....	22,109,644	607,862	....	37,646,852	....	....	....
Alsace-Lorraine	....	....	1,387,462	31,708	....	391,067	....	....	....
Baden	....	....	1,206,919	25,893	....	769,866	....	....	....
Bavaria	....	933	4,608,469	55,341	....	1,844,699	....	....	....
Bremen	....	....	19,124	1,432	....	240,041	....	....	....
Bavaria	....	....	26,375	...	....	400,000	....	....	....
Hamburg	....	....	40,333	19,602	....	807,429	....	....	....
Hesse	....	....	372,613	24,696	....	803,195	....	....	....
Lippe	....	....	5,481	735	....	130,000	....	....	....
Lübeck	....	....	2,457	638	....	102,484	....	....	....
Mecklenburg-Schwerin	....	....	12,835	1,482	....	609,877	....	....	....
Mecklenburg-Strelitz	....	....	2,627	298	....	100,000	....	....	....
Oldenburg	....	....	96,058	1,522	....	339,925	....	....	....
Prussia	....	....	13,352,444	409,501	....	23,341,502	....	....	....
Reuss, Elder Branch	....	....	1,500	....	....	60,000	....	....	....
Reuss, Younger Branch	....	....	2,579	178	....	135,958	....	....	....
Saxe-Altenburg	....	....	5,449	....	....	200,511	....	....	....
Saxe-Coburg-Gotha	....	....	3,330	608	....	225,074	....	....	....
Saxe-Meiningen	....	....	4,845	1,256	....	262,243	....	....	....
Saxe-Weimar	....	....	17,915	1,421	....	367,789	....	....	....
Saxony	....	....	218,033	14,697	....	4,233,469	....	....	....
Schaumburg-Lippe	....	....	785	257	....	40,000	....	...	....
Schwarzburg-Rudolstadt	....	....	637	48	....	95,000	....	....	....
Schwarzburg-Sondershausen		....	1,520	195	....	80,000	....	....	....
Waldeck	....	....	1,890	629	....	55,000	....	....	....
Württemberg	....	....	695,808	12,053	....	1,582,745	....	....	....
Greece	....	1,902,386	14,677	5,792	24,165	....	....	....	....
Guatemala	....	....	(*b*)	....	....	....	....	....	....
Haiti	....	....	(*b*)	....	....	....	....	....	....
Honduras	....	...	(*b*)	....	....	....	....	....	....
Hungary (*c*)	....	1,854,143	9,919,913	851,378	....	3,730,084	....	....	....
Italy	....	2,472	31,539,863	38,000	....	65,595	....	....	....
Japan (*d*)	19,858,000	....	65,000	....	....	58,000	2,000,000	100,000	....
Korea	1,5 0,000	....	32,000	....	....	35,000	432,000	6,000,000	....
Liberia	....	....	....	....	....	65,000	1,995,000	....	....
Luxemburg	....	....	230,000	1,201	....	2,269	....	....	....
Mexico	....	....	12,380,245	8,972	....	40,445	....	....	....
Montenegro	....	205,000	10,000	....	14,000	....	....	....	....
Morocco	....	....	5,000	150,000	5,000,000	1,000	300,000	....	....
Nepal	2,500,000	....	....	....	....	....	500,000	....	1,000,000

Religious Statistics—*Continued.*

	Buddhists.	Greek Catholics.	Roman Catholics.	Jews.	Mohammedans.	Protestants.	Animists, Fetichists, etc.	Confucianists and Taoists.	Hindus.
Netherlands, The	....	....	1,790,161	103,988	....	3,069,132	....	....	....
East Indies	....	....	50,000	1,000	20,000,000	380,000	15,000,000	480,000	27,000
West Indies	....	....	58,560	2,021	6,071	10,254	30,000	....	....
Nicaragua	....	....	....	....	....	6,231	....	....	....
Norway	....	....	1,969	....	....	2,237,063	....	....	....
Panama	....	....	Recog. relig.	....	....	993	....	....	....
Paraguay	....	....	500,000	....	....	450	100,000	....	....
Persia	....	60,000	14 000	35,000	9,500,000	6,000	....	....	....
Peru	7,000	....	3,687,000	500	....	5,000	....	....	....
Portugal	....	....	5,000,000	481	....	4,491	....	....	....
Roumania	(*e*)	5,451,787	149,667	266,659	43,740	68,276	....	....	....
Russia	433,863	87,123,604	11,467,994	5,215,805	13,906,972	3,572,653	2,000,000	....	....
Santo Domingo	....	....	Recog. relig.	....	....	6,200	....	....	....
Servia	....	2,460,515	10,423	5,729	14,745	1,399	....	....	....
Siam	3,600,000	....	....	....	....	15,000	1,600,000	....	....
Spain	....	....	18,000,000	402	....	6,654	....	....	....
Sweden	....	44	2,378	3,912	....	5,072,792	....	....	....
Switzerland	....	....	1,379,664	12,264	....	1,916,157	....	....	....
Turkey	....	....	858,000	379,000	18,594,000	100,000	....	....	....
Bulgaria	....	3,346,781	29,442	37,653	603,113	5,402	....	....	....
Egypt	....	53,396	56,426	25,200	8,979,000	27,000	....	....	....
United States	....	....	13,887,000	1,044,000	15,000	67,223,000	....	....	....
Porto Rico	....	....	Prevail. relig.	....	....	7,000	....	....	....
Philippines	75,000	....	3,940,000 (*g*)	....	270,000	27,000	260,000	....	....
Uruguay	....	....	930,000	....	....	13,000	....	....	....
Venezuela	....	....	2,223,000	500	....	8,000	....	....	....

(*a*) Oriental churches, 3,098,000.
(*b*) Prevailing religion is Roman Catholic.
(*c*) Greek Orientals, 2,815,713.
(*d*) Shintoists, 24,900,000.
(*e*) Eastern churches, 5,415,341.
(*f*) Includes Alaska and Hawaii.
(*g*) Independent Catholics besides, 3,000,000.

PROTESTANT EVANGELICAL SUNDAY SCHOOLS OF THE WORLD.

From information given at the Twelfth International Sunday School Convention at Louisville, Kentucky, June, 1908.

Countries.	Scholars.	Teachers.	Sunday Schools.	Countries.	Scholars.	Teachers.	Sunday Schools.
Europe:				Asia:			
Great Britain and Ireland	7,450,374	684,342	46,399	China	5,264	1,053	105
Austria-Hungary	10,572	643	238	Japan	44.035	7,505	1,074
Belgium	6,600	346	132	Turkey in Asia	25,833	4,250	516
Bulgaria	1,496	72	29	Africa	161,394	8,455	4,246
Denmark	80,000	5,000	1,000	North America:			
Finland	165,140	12,928	7,611	United States	11,329,253	1,451,855	140,519
France	67,000	7,000	1,200	Canada	684,235	85,632	10,750
Germany	855,114	28,356	8,073	Newfoundland and Labrador	22 766	2,374	353
Greece	200	8	6	West Indies	111,335	10,769	2,306
Holland	206.000	5,092	2,020	Central America	5,741	577	231
Italy	16,000	1,500	350	Mexico	15,128	1,600	426
Norway	26,000	2,000	325	South America	150,000	3,000	350
Portugal	1.717	72	18	Oceania:			
Russia	12,000	1,100	350	Australasia	595,031	54,670	7,458
Spain	6,500	200	100	Fiji Islands	42,909	2,700	1,474
Sweden	320.000	18,025	4,455	Hawaiian Islands	15,840	1,413	230
Switzerland	122,567	7,490	1,762	Other Islands	10,000	800	210
Turkey in Europe	1,129	42	28				
Asia:				Total	22,572,858	2,411,373	244,528
Persia	4,876	440	167				
Siam	809	64	16				

The table given above does not include over 1,000,000 children attending the Roman Catholic Sunday schools in the United States, or any of the non-Evangelical Protestant churches.

Sunday Schools.—Robert Raikes of Gloucester, England, is to be regarded rather as the reviver than as a founder of Sunday schools in 1780. Much religious instruction was given by the ancients in a formal way in such classes. Hannah More, John and Charles Wesley, Whitefield, and others encouraged the movement; Rev. Rowland Hill, William Fox, Jonas Hanway furthered the formation of the Sunday School Society (1785). In 1811, Great Britain had 400,000 children attending Sunday schools. The first Sunday school appears to have been opened at Plymouth, Mass., in 1669.

The Sunday schools were organized under a society in Philadelphia in 1791; in New York in 1816; and the American Sunday School Union was formed in Philadelphia in 1824. The first National Sunday School Convention assembled in New York City in 1832, with Hon. Theodore Frelinghuysen as president. The uniform lesson system was inaugurated in Indianapolis in 1872. The convention became international in Baltimore in 1875, and a World's convention was held in London in 1889.

RELIGIOUS DENOMINATIONS IN THE UNITED STATES.

Denominations.	Ministers.	Churches.	Communicants.
Adventists:			
Evangelical	34	30	1,147
Advent Christians	912	610	26,500
Seventh-Day	488	1,750	64,232
Church of God	19	29	647
Life and Advent Union	60	28	3,800
Churches of God in Jesus Christ	56	97	2,872
Total Adventists	1,569	2,544	99,298
Baptists:			
Regular, North	7,998	9,595	1,155,422
Regular, South	13,412	21,216	1,981,749
Regular, Colored	12,201	17,721	1,778,824
Six Principle	8	12	858
Seventh-Day	98	84	8,509
Freewill	1,248	1,409	82,303
Original Freewill	120	167	12,000
General	475	535	29,347
Separate	113	103	6,479
United	25	204	13,209
Baptist Church of Christ	80	152	8,254
Primitive	2,130	3,530	126,000
Old Two Seed in the Spirit Predestinarian	300	473	12,851
Church of God and Saints of Christ	71	93	8,500
Total Baptists	38,279	55,294	5,224,305
Brethren (River)	173	98	4,239
Brethren (Plymouth)	....	314	6,661
Buddhist (Chinese)	....	47	....
Buddhist and Shintoist (Japanese)	....	9	....
Catholics:			
Roman Catholics (*a*)	16,093	12,923	14,235,451
Maronite Catholic	10	10	35,000
Polish Catholic	33	43	42,850
Old Catholic	3	5	425
Reformed Catholic	6	4	1,750
Russian Orthodox	75	103	55,000
Greek Orthodox	43	42	100,000
Syrian Orthodox	13	21	30,000
Armenian	15	21	8,500
Total Catholics (*b*)	16,291	13,172	14,508,976
Catholic Apostolic	95	10	1,491
Christadelphians	....	63	1,277
Christian Connection	1,348	1,340	101,597
Christian Catholic (Dowie)	104	110	40,000
Christian Scientists	1,336	668	85,096
Christian Union	201	268	17,500
Church of God (Winnebrennarian)	499	590	41,175
Church of the New Jerusalem	130	144	8,200
Communistic Societies:			
Shakers	....	15	1,000
Amana	....	1	1,766
Harmony	....	1	8
Altruists	....	1	25
Church Triumphant (Koreshan Ecclesia)	....	3	205
Christian Commonwealth	....	1	80
Total Communists	....	22	3,084
Congregationalists	5,923	5,941	699,327
Disciples of Christ	6,673	11,307	1,285,123
Dunkards	3,337	1,159	121,705
Evangelical Bodies:			
Evangelical Association	950	1,652	103,525
United Evangelical Church	553	1,014	70,116
Total Evangelical	1,500	2,666	173,641
Friends:			
Orthodox	1,302	830	97,836
"Hicksite"	115	183	19,545
"Wilburite"	38	53	4,468
Primitive	11	9	232
Total Friends	1,466	1,075	122,081
Friends of the Temple	4	4	340
German Evangelical Protestant	100	155	20,000
German Evangelical Synod	974	1,262	237,321
Jews:			
Orthodox	135	340	62,000
Reformed	166	230	81,000
Total Jews (See Note *c*)	301	570	143,000
Latter-Day Saints:			
Utah Branch	752	775	350,000
Reorganized Branch	1,200	553	48,000
Total Mormons	1,952	1,328	398,000
Lutherans:			
General Synod	1,322	1,734	265,469
United Synod, South	235	458	47,514
General Council	1,433	2,195	437,788
Synodical Conference	2,444	3,101	643,599
United Norwegian	480	1,335	154,055
Independent Synods	2,126	4,346	474,180
Total Lutherans (*d*)	8,040	13,169	2,022,605
Swedish Evangelical Mission Covenant (Waldenstromians)	355	351	46,000
Mennonites	1,240	701	61,690
Methodists:			
Methodist Episcopal	17,861	27,965	3,036,667
Union American M. E.	138	255	18,500
African Methodist Episcopal	6,070	6,815	850,000
African Union Meth. Prot.	200	125	4,000
African Meth. Episcopal Zion	3,912	3,241	578,310
Methodist Protestants	1,551	2,242	188,894
Wesleyan Methodist	524	598	19,064
Methodist Episcopal, South	6,978	15,496	1,673,892
Congregational Methodist	415	425	24,000
Cong. Methodist (Colored)	5	5	319
New Congregational Meth.	238	417	4,022
Zion Union Apostolic	30	32	2,346
Colored Methodist Episcopal	2,673	2,619	219,739
Primitive	72	104	7,013
Free Methodist	1,126	1,117	31,435
Independent Methodist	8	15	2,569
Evangelist Missionary	92	47	5,014
Total Methodists	41,893	61,518	6,660,784
Moravians	129	119	17,199
Presbyterians:			
Northern	8,822	10,893	1,312,075
Cumberland	400	424	38,102
Cumberland (Colored)	583	558	42,000
Welsh Calvinistic	80	150	13,020
United	987	960	127,205
Southern	1,606	3,192	262,390
Associate	12	31	1,053
Associate Reformed, South	96	136	12,620
Reformed (Synod)	113	109	9,063
Reformed (General Synod)	23	23	3,500
Reformed (Covenanted)	1	1	40
Reformed in U. S. & Canada	....	1	436
Total Presbyterians	12,723	16,478	1,821,504
Protestant Episcopal:			
Protestant Episcopal	5,115	7,705	821,240
Reformed Episcopal	82	74	9,419
Total Protestant Episcopal	5,197	7,779	830,659
Reformed:			
Reformed (Dutch)	719	667	121,210
Reformed (German)	1,164	1,754	284,073
Christian Reformed	116	175	25,175
Total Reformed	1,199	2,596	430,458
Salvation Army	4,765	1,016	28,000
Schwenkfeldians	6	8	740
Social Brethren	17	20	913
Society for Ethical Culture	30	5	2,142
Spiritualists	....	748	150,000
Theosophical Society	....	72	2,607
United Brethren:			
United Brethren	1,864	3,819	271,335
U. Brethren (Old Constitution)	296	559	20,423
Total United Brethren	2,160	4,378	291,758
Unitarians	549	473	71,200
Universalists	728	910	52,621
Independent Congregations	54	156	14,126
Grand Total	161,825	210,359	34,848,743

NOTE—(*a*) Not including the Hawaiian and Philippine Islands and Porto Rico. (*b*) The Official Catholic Directory 1909 gives the Catholic population of the Philippine Islands, 7,283,989, of Porto Rico, about 1,000,000, and of Hawaii, 35,000. (*c*) The American Jewish Year Book for 1908 estimates the number of the Jewish race in the United States in 1908 as 1,777,185. (*d*) The Lutheran Church Almanac gives the number of ministers as 7,483, churches or congregations 13,106, communicant members 1,785,799.

The aggregate of 34,848,743 represents actual church membership, and includes all Catholics, but not all persons affiliated by family ties to Protestant bodies. The larger of the Protestant bodies may claim twice the number of their communicants as nominal adherents.

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INDEX.

How to Use: While the following index is most comprehensive, embracing about 20,000 entries, thousands of subjects in addition to those listed herein are *self-indexed* in numerous dictionaries and tabulations throughout the text. Owing to the accurate classification of the matter into related groups, where the subject sought for can be readily found in its alphabetical or logical order, it would not only be needless repetition to enter such subjects in the general index, but their inclusion there would make it too large and unwieldy for quick reference.

An alphabetical list of some forty groups of subjects covered by special dictionaries is given under the subject: Dictionary. Likewise about one hundred groups of valuable matter in tabular form are listed under the subject: Tables. Among these special dictionaries which should be consulted in case the subject desired is not found in the general index, are the dictionaries of *Coins and Coinage*, *Weights and Measures*, *Business and Financial Terms*, *Commercial Geography*, *Technical Terms* (Agriculture, Mining, Engineering, and Textile), *Art and Musical Terms*, *Masterpieces of Art*, *Pedagogical Terms*, *Literary Plots*, *Characters and Allusions*, *Pseudonyms*, *Mythology*, and the dictionary of *English Synonyms*, which is provided with a special index in the text.

Among the extensive tabulations which will prove invaluable when used in connection with the general index are: *World's History in Graphic Outline*, *Outlines of the World's Literature*, *Important Wars*, *Facts Regarding Presidents*, *States of the Union*, *Municipal Statistics*, *Financial Events*, *Canals*, *Progress Table of the United States*, *British Empire*, *Chemical Elements*, *Cultivated Plants*, *Domestic Animals*, *Operas*, *Oratorios*, *Educational and Religious Statistics*. Attention is called to the full treatment with extensive cross-references under the several states and countries and also under the head of *Origin*, *Introduction*, *Invention*, *Discovery*, *First Use*, and *First Record*.

To illustrate the use of the dictionaries: Suppose it is desired to find the difference in value between a franc and a mark. Individual coins are not listed in the index. The inquirer should turn to the subject Dictionary, under which that on *Coins and Coinage* is indicated at page 550, where both franc and mark will be found in alphabetical order. Similarly, profitable use can be made of the various tables and other classified groupings of related subjects.

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